

Peel2051

Regional Official Plan Review

**Recommended Methodology
to Confirm Environmental and
Non-Environmental Exclusions (Take Outs)**

New Settlement Expansion Areas and
Existing Designated Greenfield Areas

February 2022

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1. Introduction

The Peel 2051 Regional Official Plan Review is being undertaken in accordance with the *Planning Act* to ensure that the policies of the Plan are consistent with Provincial plans and policies and address Regional needs. As part of the Review, the Region is required to accommodate and plan for growth to 2051. Provincial requirements under the Growth Plan require the Region to determine the available supply of developable land within existing and new designated greenfield areas (DGA) and then later measure the minimum greenfield density target, once established by the Region, over the entire DGA taking into account eligible environmental and non-environmental take outs.

The following technical summary describes the approach being taken to identify and map environmental and non-environmental take outs for the purposes of the Peel 2051 Review. Separate take out methods are proposed for existing DGA and new settlement areas (proposed new DGA) that will be identified through the Region's Settlement Area Boundary Expansion Study which is a component of Peel 2051. Separate methods for the existing and new DGA are required to account for the established and currently planned boundaries of environmental take outs in existing DGA where natural heritage designations have been refined and determined through development approvals.

2. Take Out Methodology for New Settlement Areas

The following describes the recommended approach to produce mapping of environmental and non-environmental exclusions ("take outs") for the purpose of delineating new settlement area boundaries with sufficient net developable area to meet land needs in accordance with Policies 2.2.7.3 and 2.2.8.2 of the Growth Plan. Policy 2.2.7.3 of the Growth Plan lists eligible environmental and non-environmental features and areas required to be netted out of the calculation of developable area for the purpose of measuring greenfield density. Accounting for take outs also allows the developable area needed to satisfy new community and employment land needs to be determined in accordance with Growth Plan Policy 2.2.8.2.

Policy 2.2.8.2 states:

A settlement area boundary expansion may only occur through a municipal comprehensive review where it is demonstrated that:

- a) *based on the minimum intensification and density targets in this Plan and a land needs assessment undertaken in accordance with policy 2.2.1.5, sufficient opportunities to accommodate forecasted growth to the horizon of this Plan are not available through intensification and in the designated greenfield area:*
 - i) *within the upper- or single-tier municipality, and*
 - ii) *within the applicable lower-tier municipality;*
- b) *the proposed expansion will make available sufficient lands not exceeding the horizon of this Plan, based on the analysis provided for in policy 2.2.8.2 a), while minimizing land consumption;*
and
- c) *the timing of the proposed expansion and the phasing of development within the designated greenfield area will not adversely affect the achievement of the minimum intensification and density targets in this Plan, as well as the other policies of this Plan.*

Policy 2.2.7.3 states:

The minimum density target will be measured over the entire designated greenfield area of each upper- or single-tier municipality, excluding the following:

- a) *natural heritage features and areas, natural heritage systems and floodplains, provided development is prohibited in these areas;*
- b) *rights-of-way for:*
 - i) *electricity transmission lines;*
 - ii) *energy transmission pipelines;*
 - iii) *freeways, as defined by and mapped as part of the Ontario Road Network; and*
 - iv) *railways;*
- c) *employment areas; and*
- d) *cemeteries.*

Unlike existing designated greenfield areas that have established or planned natural heritage systems, features and areas with defined boundaries, the natural heritage systems in new settlement areas are subject to further study and refinement at the local level through the secondary plan approval stage when more detailed field studies are undertaken to inform the delineation of land uses. The process involves further evaluation and refinement of system, feature and area boundaries including identifying buffers adjacent to features, enhancement areas and linkages.

In determining an environmental take out for new settlement expansion areas, the approach recommended for the Peel 2051 Regional Official Plan Review has considered two methods. The first involved mapping natural heritage features and areas based on available Regional datasets. The features and areas selected for mapping are subject to policy requirements prohibiting development and include buffers to represent areas adjacent to features that would typically be protected while recognizing that these areas require confirmation and potential refinement in subsequent stages. The second method included in the approach utilizes a preliminary conceptual natural heritage system based on a further detailed desktop assessment of features and functions generated as a component of the scoped sub-watershed study for the expansion area. The outputs from these two methods generated two “take out” scenarios. Based on an assessment of the two methods a recommended environmental “take out” is described with mapping to support the confirmation of net developable land requirements for the Peel 2051 Settlement Area Boundary Expansion Study.

2.1 Natural Heritage Features and Areas

The eligibility of natural heritage features and areas, natural heritage systems and flood plains to be included as a take out requires development to be prohibited in the areas. The relevant policies determining whether development is prohibited is provided in the Provincial Policy Statement, the Growth Plan, the provincial Greenbelt Plans, the Region of Peel Official Plan and the Town of Caledon Official Plan. New settlement expansion areas are not contemplated in the Cities of Brampton and Mississauga as settlement boundaries extend to municipal limits and have no areas with potential for settlement expansion.

3. Policy Basis for Natural Heritage Feature and Area Take Outs

3.1 Provincial Policy Statement

The 2020 Provincial Policy Statement (PPS) provides policy direction for the protection of natural heritage features and areas and identification of natural heritage systems.

Development and site alteration are not permitted in (Policy 2.1.4):

- significant wetlands and significant coastal wetlands.

Development and site alteration are also not permitted in the following features unless it is demonstrated that there will be no negative impacts on the features or their ecological functions (Policy 2.1.5):

- significant woodlands;
- significant valleylands;
- significant wildlife habitat;
- significant areas of natural and scientific interest;
- coastal wetlands not subject to policy 2.1.4

In the case of fish habitat or the habitat of endangered or threatened species, development and site alteration is not permitted unless the development is permitted in accordance with federal and provincial requirements (Policy 2.1.6 and 2.1.7).

The PPS also does not permit development and site alteration on adjacent lands to natural heritage features and areas unless the ecological function of the adjacent lands has been evaluated and it is demonstrated that there will be no negative impacts on the natural features or their functions (Policy 2.1.8). The implementation of this policy in accordance with the Region of Peel and Town of Caledon Official Plans typically requires buffers and enhancement areas adjacent to features to be identified and protected. The consideration of buffers and enhancement areas requires consideration in the determination of the net developable area for new settlement expansion areas.

The PPS further requires municipalities to identify, maintain, restore or, where possible, improve the diversity and connectivity of natural heritage features and areas and the long-term ecological function of natural heritage systems (Policy 2.1.2). The PPS requires protection of significant natural heritage features and the flexibility to include 'other natural heritage features and areas', and 'lands that have been or that have the potential to be restored to a natural state'. The policies support the inclusion of features that may not be deemed 'significant' at the provincial level, but which support the identification of a natural heritage system as defined under the PPS. The implementation of the PPS requires municipalities to effectively identify and protect natural heritage systems including providing appropriate buffers adjacent to features and linkages between and among features and areas. The identification of natural heritage systems is a fundamental component of planning new communities and should be given consideration in the determination of the developable area for new settlement areas.

Finally, in accordance with the PPS, development is generally directed to areas outside of hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards. The relevant exclusion in the Region of Peel for flooding hazards is the regulatory flood plain associated with river and stream systems impacted by flooding hazards.

3.2 Growth Plan Natural Heritage System

The Growth Plan states that if a settlement area is expanded to include the Natural Heritage System for the Growth Plan, the portion within the revised settlement area boundary will be designated in official plans and continue to be protected in a manner that ensures that connectivity between, and the diversity and functions of, the natural heritage features will be maintained, restored, or enhanced (Policy 4.2.2.7).

The Growth Plan further directs that municipalities within settlement areas:

- will continue to protect any other natural heritage features or areas in a manner consistent with the PPS; and
- may continue to protect any other natural heritage system or identify new systems in a manner consistent with the PPS (Policy 4.2.3.6).

The Growth Plan identifies three locations in the Region where the Natural Heritage System for the Growth Plan applies outside of settlement areas. If settlement expansions include the Natural Heritage System for the Growth Plan in these locations, it is appropriate that the Natural Heritage System boundary be considered as an eligible take out as the policy requires its designation and protection.

3.3 Greenbelt Plan

Generally, the Greenbelt Plan does not apply to lands within settlement boundaries (Villages and Hamlets). However, where expansions to settlement areas are proposed the policies of the Greenbelt Plan and Growth Plan apply. In accordance with the Greenbelt Plan and Growth Plan, expansion of Villages within the Protected Countryside may be permitted if the expansion is modest in size and represents no more than a 5 per cent increase in geographic size of the settlement area boundary, up to a maximum 10 hectares (Policy 2.2.8.3 k)). Villages within the Greenbelt Plan Area in Peel include Inglewood, Caledon Village, Alton and Caledon East.

Policies applying to the Natural Heritage System, key natural heritage features and key hydrologic features apply when considering expansions to Greenbelt Villages (Greenbelt Policies 3.2.2.4 and Section 3.2.5).

Settlement Areas within the Greenbelt Plan Area are not permitted to expand into the Natural Heritage System (Policy 3.2.2.6).

Beyond the Natural Heritage System within the Protected Countryside, key hydrologic features are defined by and subject to the policies of Section 3.2.5 of the Greenbelt Plan (Policy 3.2.5.2). The

Greenbelt Plan does not permit development and site alteration within key hydrologic features or their associated vegetation protection zones (VPZ). The Plan further states that the required vegetation protection zone for key hydrologic features is a minimum of 30 metres. Key hydrologic features and their required VPZs are defined as:

- permanent and intermittent streams (30 m minimum VPZ)
- lakes and their littoral zones (30 m minimum VPZ)
- seepage areas and springs (30 m minimum VPZ)
- wetlands (30 m minimum VPZ)

Beyond the Natural Heritage System within the Protected Countryside, key natural heritage features are subject to the policies of the PPS (Policy 3.2.5.3).

If expansions of settlement areas (Villages) are considered, key hydrologic features and associated vegetation protection zones are eligible to be excluded from the net developable area along with any PPS protected natural heritage feature and area and associated buffer.

3.4 Niagara Escarpment Plan

The Niagara Escarpment Plan designates six Minor Urban Centres in Peel. Any proposal to expand the boundary of a Minor Urban Centre requires an amendment to the Niagara Escarpment Plan subject to the policies of the Plan.

In accordance with the Growth Plan, the definition of designated greenfield area excludes rural settlements which include the Minor Urban Centres of the Niagara Escarpment Plan. The designated greenfield area density calculation therefore does not include the Minor Urban Centres of the NEP or any settlement area expansion of a Minor Urban Centre. The environmental take outs are not a required deduction in the calculation of designated greenfield density but should be considered in the determination of the net developable area for a Minor Urban Centre expansion. If applicable, the identification of key natural heritage and key hydrologic features and their vegetation protection zones is based on development criteria specified in the Niagara Escarpment Plan.

3.5 Oak Ridges Moraine Conservation Plan

Upper-tier municipalities may consider an expansion to a Settlement Area as part of a municipal comprehensive review. The only designated Settlement Area in Peel is the Caledon East Rural Service Centre. In accordance with the Oak Ridges Moraine Conservation Plan (ORMCP), Settlement Area boundaries are not permitted to expand into Natural Core Areas or Natural Linkage Areas (ORMCP Implementation).

Similar to the Greenbelt Plan and Niagara Escarpment Plan, if a settlement expansion is considered outside of Natural Core Area and Natural Linkage Area designations, development and site alteration is not permitted in key natural heritage features and key hydrologic features and their associated vegetation protection zones (VPZs). The ORMCP specifies minimum 30 metre VPZs for certain features

and requires natural heritage and hydrologic evaluations to be undertaken to consider the adequacy of the minimum VPZs and the determination of VPZs for other features that do not have specified zones. The protection of key natural heritage and key hydrologic features and their minimum VPZs therefore requires consideration in the determination of the net developable area of ORMCP settlement area expansions.

The ORMCP defines key natural heritage features and their minimum VPZs as:

- wetlands (30 m minimum VPZ)
- habitat of endangered and threatened species (subject to natural heritage evaluation)
- fish habitat (30 m minimum VPZ)
- life science Areas of Natural and Scientific Interest (subject to natural heritage evaluation)
- significant valleylands (30 m minimum VPZ)
- significant woodlands (30 m minimum VPZ)
- significant wildlife habitat (including habitat of special concern species) (subject to natural heritage evaluation)
- sand barrens, savannahs and tallgrass prairies (30 m minimum VPZ)

Key hydrologic features and their associated VPZs are:

- permanent and intermittent streams (30 m minimum VPZ)
- wetlands (30 m minimum VPZ)
- kettle lakes (greater of 30 m minimum VPZ or all land within the surface catchment area)
- seepage areas and springs (30 m minimum VPZ).

3.6 Region of Peel Official Plan

The Regional Official Plan implements the Provincial Policy Statement's (PPS) natural heritage system policies by providing policy direction for the protection of natural heritage and water resource features through the Greenlands System's Core Areas, Natural Areas and Corridors (NAC) and Potential Natural Areas and Corridors (PNAC) policy framework. Core Areas of the Greenlands System are identified and shown on Schedule A to the Region of Peel Official Plan.

In accordance with the Plan, development and site alteration are not permitted within Core Areas with limited exceptions (Policy 2.3.2.6). Core Areas include:

- a) significant wetlands
- b) significant coastal wetlands;
- c) Core woodlands meeting one or more of the criteria in Table 1;
- d) Environmentally Sensitive or Significant Areas;
- e) Provincial Life Science Areas of Natural and Scientific Interest;
- f) significant habitats of threatened and endangered species;
- g) Escarpment Natural Areas of the Niagara Escarpment Plan; and
- h) Core valley and stream corridors meeting one or more of the criteria in Table 2.

The Regional Official Plan directs the area municipalities to identify and protect Core Areas in conformity with the Plan and provincial policy and to further interpret, identify and protect NAC and PNAC features and areas in the local official plans in accordance with provincial policy (Policies 2.3.2.4 and 2.3.2.11). Implementation requires environmental impact studies for development and site alteration within and on adjacent lands to the Greenlands System in accordance with the policies of the Plan and provincial policy (Policy 2.3.2.25).

The Regional Official Plan is read in conjunction with the area municipal official plans to determine the extent of natural heritage features and areas and adjacent lands protected in accordance with provincial, regional and local policy. A summary of the Town of Caledon Official Plan requirements regarding implementation of the Regional Plan is provided below.

Section 2.5 of the Regional Official Plan further implements provincial policy direction for natural hazards including policy addressing development in flood plains. In accordance with the Plan, development is directed to areas outside of the regulatory flood plain in accordance with provincial policy.

It is recommended that the criteria for identification of eligible natural heritage exclusions be based on the most recent draft or final Greenlands System policies that are being proposed through the Peel 2051 Regional Official Plan Review.

3.7 Town of Caledon Official Plan

The area municipal official plans in Peel further interpret, identify and protect natural heritage features and areas in accordance with provincial and regional policy direction.

The Town of Caledon Official Plan's Ecosystem Framework incorporates and refines the components of the Regional Greenlands System, as defined in the Region of Peel Official Plan, in a manner which conforms with the policy direction in the Regional Plan and in accordance with provincial policy. The Ecosystem Framework establishes policy requirements for Natural Core Areas, Natural Corridors, Supportive Natural Systems, and Natural Linkages. Natural Core Areas and Natural Corridors are designated Environmental Policy Area (EPA) on Schedule A to the Town of Caledon Official Plan. Development and site alteration are not permitted within the EPA designation with limited exceptions.

Ecosystem components which are not currently designated EPA, and which are identified through more detailed environmental studies as warranting protection, may be excluded from development in order to satisfy the Town's environmental policies and performance measures. The Town's Ecosystem Framework components identified through studies as warranting protection are generally placed in an EPA designation, subject to the policies of the Caledon Official Plan. The Town of Caledon Ecosystem Framework components are categorized in Table 3.1 of the Caledon Official Plan.

The Town of Caledon is undertaking an official plan review to be consistent with the 2020 Provincial Policy Statement and conform to provincial plans, including the 2019 Growth Plan and the Regional Official Plan. Until such time that the Town of Caledon's Official Plan is updated it is recommended that

the current in effect Caledon Official Plan policies and mapping apply to identify eligible environmental exclusions recognizing that any revisions to the natural heritage policies and mapping as a result of the official plan review will need to be reflected in the implementation of the settlement area boundary expansion at the local level.

4. Take Out Option 1 for New Settlement Areas – Identification of Environmental Exclusions Based on Existing Natural Heritage Feature Mapping and Buffers

In accordance with the above direction relating to the protection of natural heritage features and areas, the following option is one of two options being considered for the identification of environmental take outs for the purposes of Policies 2.2.7.3 and 2.2.8.2 of the Growth Plan. The mapping of environmental features and areas utilizes existing mapped datasets and mapped designations in the Provincial Greenbelt Plans, Growth Plan, Region of Peel Official Plan and Town of Caledon Official Plan.

4.1 Outside the Greenbelt Plan Area and Outside Settlement Areas

Protected Natural Heritage Features and Flood Plains

The following natural heritage features and areas are recommended to be included as eligible environmental take outs:

- Region of Peel – Core Areas of the Greenlands System in Peel as mapped on Schedule A
- Town of Caledon – Environmental Policy Areas as mapped on Schedule A
- Natural Heritage System for the Growth Plan
- The following additional environmental features where development is prohibited by policy in the Regional Official Plan or Town of Caledon Official Plan:
 - Wetlands (all wetlands, evaluated Provincially significant, evaluated non-Provincially significant and unevaluated wetlands)
 - Earth and Life Science Areas of Natural and Scientific Interest
 - Peel Core, NAC and PNAC Woodlands (all woodlands > 0.5 ha in size)
 - Peel Core and NAC valley and stream corridors (all defined valley and stream corridors based on conservation authority crest of slope data)
 - Watercourses
 - Drainage (approximately represents headwater drainage features not identified in the watercourse data layer)
 - Waterbodies (all waterbodies > 0.5 ha. in size excluding off-line artificial reservoirs, industrial ponds, sewage lagoons and stormwater management ponds)
 - Conservation Authority Flood Plains (“engineered” floodplains)

Buffers

In addition to mapping features, it is recommended that buffers be applied to the base natural heritage feature data to represent lands that would be identified in subsequent planning stages and protected within a recommended natural heritage system as buffers adjacent to features, enhancement areas added to features, and linkage areas connecting features and areas. Buffers are recommended to be included in the take out analysis to represent a regional scale natural heritage system that will need to be further interpreted, identified, and protected in the secondary plan implementing the regional settlement area boundary expansion.

Regarding buffer width, 30 m buffers are recommended to be applied to currently mapped outer boundaries of all wetlands, woodlands, watercourses, waterbodies, and valley and stream corridors. It is also recommended that 15 m buffers be applied to drainage features (either side of polyline) in addition to the buffers that apply to all wetlands, woodlands, watercourses, waterbodies, valley and stream corridors.

Headwater drainage features represented by the “drainage” dataset will not reflect the ultimate location of headwater features requiring protection as the current regional scale data is based on air photo interpretation and is not field verified.

The recommended 15 metre and 30 metre “vegetation protection zone (VPZ)/buffers” generally align with provincial, regional and local policy direction and guidelines and reflect approximate buffer and/or enhancement requirements that would need to be confirmed through detailed delineation of a natural heritage system in the secondary plan.

Mapping buffers provides a high-level sensitivity testing of constraints recognizing that regional scale datasets are only representative of feature boundaries and that delineation of the natural heritage system with vegetation protection zones/buffers and enhancement areas will require detailed studies at the secondary plan and development approval stages.

Testing of the 15 m buffer applied to drainage features will be undertaken to confirm the application of this buffer provides a reasonable representation of headwater enhancement areas and may be included or excluded based on results of the scoped subwatershed study.

The Region of Peel Core Greenlands dataset¹, Town of Caledon Environmental Protection Areas, earth and life science ANSIs and conservation authority flood plains are recommended to be mapped without buffers.

After buffers are applied, all datasets should be merged and mapped as a single constraint layer. The base data to be used in the take out calculation is attached as Appendix A along with the procedure to generate the GIS shapefile.

4.2 Within the Greenbelt Plan Protected Countryside

The environmental exclusions for expansion of Villages within the Greenbelt Plan Protected Countryside are recommended to include all the exclusions in Section 4.1 plus the following Greenbelt key hydrologic features and their vegetation protection zones:

¹ The Region of Peel Core Greenlands consists of individual features and areas that have been combined and mapped as one mapping dataset/layer that includes natural heritage areas that would not normally require the application of buffers for their protection (e.g. Escarpment Natural Areas and Environmentally Sensitive or Significant Areas). Buffer requirements for natural heritage feature types that may be included in these areas are mapped separately in the methodology (e.g. woodlands, wetlands, valleylands).

- permanent and intermittent streams (30 m minimum VPZ)
- lakes and their littoral zones (30 m minimum VPZ)
- seepage areas and springs (30 m minimum VPZ)
- wetlands (30 m minimum VPZ)

With the exception of seepage areas and springs, existing mapped data for key hydrologic features are available from provincial and regional data sources. It is recommended that wetlands within the Greenbelt Protected Countryside area be mapped in accordance with the Greenbelt Plan 2005 Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System for the Protected Countryside or as may be amended and updated by the Province.

4.3 Within the Oak Ridges Moraine Conservation Plan Area

The environmental exclusions for expansion of Settlement Areas within the ORMCP Area are recommended to include all the exclusions in Section 4.1 plus the following ORMCP key natural heritage features and key hydrologic features and their vegetation protection zones:

ORMCP key natural heritage features:

- wetlands (30 m minimum VPZ)
- habitat of endangered and threatened species (subject to natural heritage evaluation)
- fish habitat (30 m minimum VPZ)
- life science Areas of Natural and Scientific Interest (subject to natural heritage evaluation)
- significant valleylands (30 m minimum VPZ)
- significant woodlands (30 m minimum VPZ)
- significant wildlife habitat (including habitat of special concern species) (subject to natural heritage evaluation)
- sand barrens, savannahs and tallgrass prairies (30 m minimum VPZ)

ORMCP key hydrologic features:

- permanent and intermittent streams (30 m minimum VPZ)
- wetlands (30 m minimum VPZ)
- kettle lakes (greater of 30 m minimum VPZ or all land within the surface catchment area)
- seepage areas and springs (30 m minimum VPZ)

Existing datasets of ORMCP key features and their VPZs are available from the Town of Caledon. If needed, further refinement of key natural heritage features and key hydrologic features within the ORMCP should be undertaken in accordance with the Oak Ridges Moraine Technical Paper Series.

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5. Take Out Mapping Option 2 for New Settlement Areas – Identification of Environmental Exclusions Based on Conceptual Natural Heritage/Water Resource System Study

The Region retained a consultant team led by Wood Environment & Infrastructure Solutions to undertake an Environmental Screening and Scoped Subwatershed Study as part of the Settlement Area Boundary Expansion Study (SABE). The Scoped Subwatershed Study includes an inventory of the natural environment potentially affected by development, an assessment of the potential impacts of settlement expansion, and an implementation plan with recommendations and strategies to manage impacts.

A key deliverable of the Scoped Subwatershed Study is the identification of a conceptual natural heritage system at a regional scale based on a natural heritage and water resource system study component.

The eventual deliverable of this study is to identify a conceptual natural heritage and water resource system using existing information (mapping and observational data, where available) of natural features and areas supplemented by additional information collected through the subwatershed study and the analysis and integration of technical subwatershed study sub-components (e.g. aquatic, hydrology, hydrogeology, ecology). The study includes:

- i) Identification of a natural heritage system that enhances the form, function and integrity of ecological features within and surrounding the study area;
- ii) Identification of minimum ecological buffers where prescribed by relevant policies, and recommended potential buffers/enhancement areas where not prescribed but consistent with natural heritage system planning objectives;
- iii) Identification and potential refinement of the provincial Growth Plan Natural Heritage System, as mapped by the Province;
- iv) Identification and refinement of the Core Areas of the Greenlands System;
- v) Identification of a water resource system that should be managed for the long-term protection of key hydrologic features, key hydrologic areas and their functions;
- vi) Strategies to avoid and/or mitigate anticipated impacts of land use changes on the form and function of the ecological features, natural heritage system and water resource system;
- vii) Identification of linkages which will maintain and where possible improve connectivity across the landscape to support a robust and resilient natural heritage system and connect features in an urbanizing landscape;
- viii) Identification of enhancement opportunities which serve to enhance the size, shape and configuration of existing natural heritage system features and areas and maintaining or improving the existing function of linkages between features and areas; and
- ix) Consideration and review of conservation authority ‘target’ natural heritage systems areas as a way to inform, validate and, where appropriate, refine the natural heritage system developed through the Scoped Subwatershed Study.

The output of the study will provide information on whether there is sufficient net developable area within the recommended settlement area boundary while providing the necessary protection of a natural heritage system.

5.1 Summary of the Recommended Conceptual Scoped Subwatershed Natural Heritage System

The identification of a preliminary conceptual natural heritage system for the SABE has been completed and will be refined and finalized at the conclusion of the Peel 2051 Regional Official Plan Review. The conceptual NHS has been developed based on recommended targets for the protection, restoration and enhancement of existing natural cover, the protection of natural heritage features and the establishment of linkages and additional enhancement areas. The Scoped Subwatershed Study includes a recommended overall enhancement target to increase natural cover by a minimum of 30% and identifies the following system components for protection, restoration and enhancement. System components that are not mapped in the Regional study and require delineation when detailed subwatershed studies are undertaken at the local level are indicated as “undefined/unmapped”.

Natural Heritage System Features

- Key features
- Supporting features
- Other features

Linkages – Minimum Vegetated Width

- Major Landscape Linkages
- Local Landscape Linkages
- Feature or Site Scale Linkages (Undefined/unmapped)

Linkages – Permeable Landscape Zones

- PLZs are recommended to facilitate additional habitat connectivity for NHS linkages identified above and to support placement of supporting and/or compatible uses in proximity to features and linkages of the NHS
- A minimum of 30% of permeable landscape zones outside of existing natural cover and buffers comprising the NHS is to be established as natural, self-sustaining vegetation (undefined/unmapped)

Enhancement Areas (Defined and undefined/unmapped)

- In-system enhancements within valleylands of the NHS (Defined)
- Out of system enhancements that fill gaps, holes or inlets within, along the boundary of, or between key features outside valleylands (Defined)
- Floodplains (Defined)
- Provincial Natural Heritage System Enhancements (Un-defined/unmapped)
- Portions of the Linkages PLZs to be enhanced/established as natural, self-sustaining vegetation (undefined/unmapped)

- Other enhancement opportunities identified through future, detailed studies that support habitat diversity, feature size, shape or species-specific habitat objectives (undefined/unmapped)

Provincial Natural Heritage System Enhancements (Un-defined/unmapped)

- The Greenbelt Plan and Growth Plan NHS require that 30% of the total developable area will remain or be returned to natural self-sustaining vegetation
- Recommended enhancements within the Provincial NHS systems reflect provincial policy direction

The study provides recommended targets for several of the NHS system components and preliminary Regional-scale mapping of the base NHS system components. This mapping information and the recommended target areas for un-defined/unmapped system components developed for the Regional scale study were used to compare “take out” options in both the Focus Study Area for the SABE and in the final recommended SABE boundary.

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6. Recommended Environmental Take Out Option for New Settlement Areas

The information below provides an analysis of the two take out options considered and a recommendation to utilize the Scoped Subwatershed Natural Heritage Base System (Scoped SWS NHS) mapping with allowances for enhancement targets for the purposes of confirming land needs for new settlement areas identified through the SABE Study.

6.1 Comparison of Take Out Options

Table 6.1 below compares the total area of the Regional Environmental Take Out Option 1 (mapped features and buffers) and the Scoped SWS NHS Option 2 within the Focus Study Area (FSA) and the final Staff Recommended SABE boundary (February 2022). The Scoped SWS NHS Base System includes the recommended Scoped SWS NHS System components that would be subject to policy protection as noted previously, buffers adjacent to key features and enhancement areas that were possible to map at a regional scale. The mapped Scoped SWS NHS Base System components include natural heritage features recommended for protection or further evaluation; 30 m buffers on all features except headwater drainage reaches requiring further assessment; recommended major and local landscape linkages; and defined enhancements.

To account for undefined enhancements that are not mapped in the Scoped SWS NHS Base System, but are to be provided in the implementation of the study recommendations, take out areas for additional undefined/unmapped enhancements are also added to the Scoped SWS NHS Base System based on recommended targets in the Scoped SWS where these have been provided. For the purpose of the take out analysis, these include the calculated enhancement area targets for permeable linkage zones and other enhancements, with the assumption that these additional enhancements would be provided on tableland outside features and outside the Greenbelt. The entirety of the Greenbelt NHS is also included as settlement areas are not permitted to expand into the Greenbelt Area.

A key difference between the two options is that the Scoped SWS NHS Base System identifies locations for recommended landscape linkages based on ecological criteria and does not apply buffers to all “drainage” features with the exception of watercourses that have been mapped for inclusion in the Scoped SWS NHS based on assessment at the regional scale. Headwater drainage features are subject to field assessments and if included with other targeted enhancements, based on the currently mapped extent of “drainage” feature data, would potentially overrepresent the NHS system that would ultimately be refined and verified in subsequent implementation stages. Although the analysis indicates that total take out areas are very similar between the options, the location of system components varies in some key areas as noted above and based on the approach taken in developing ‘Regional Take-Outs’ versus the Scoped SWS NHS, which has been informed by natural heritage system planning criteria and assessment at a scoped subwatershed scale. Appendix B provides a comparison map of the take out options recognizing that both systems would be subject to further refinement and confirmation in subsequent planning stages.

Table 6.1: Comparison of Environmental Take Out Options

NHS/Environmental Take Out Option	Total Area of Take Out within FSA¹	Total Area of the FSA	Net Area Remaining in FSA	NHS/Environmental Take Out as a % of the FSA
Scoped SWS NHS Base System	2,053 ha	8,059 ha	6,006 ha	25.5%
Scoped SWS NHS Base System + Greenbelt NHS	2,164 ha	8,059 ha	5,895 ha	26.8%
Scoped SWS NHS Base System + Greenbelt NHS + Permeable Linkage Zone + Other Enhancements ³	2,250 ha	8,059 ha	5,809 ha	27.9%
Regional Environmental Take Out Layer ⁴	2,277 ha	8,059 ha	5,782 ha	28.2%
	Total Area of Take Out within SABE²	Total Area of the SABE (February 2022)	Net Area Remaining in SABE	NHS/Environmental Take Out as a % of the SABE
Scoped SWS NHS Base System	1,158 ha	5,622 ha	4,464 ha	20.6%
Scoped SWS NHS Base System + Permeable Linkage Zone + Other Enhancements ³	1,243 ha	5,622 ha	4,379 ha	22.1%
Regional Environmental Take Out Layer ⁴	1,283 ha	5,622 ha	4,339 ha	22.8%

Notes:

- 1 FSA Area does not net out Mayfield West Phase 2 Stage 2 or the approved ROPA 30 Lands.
- 2 Draft Recommended SABE Area (February 2022) excludes Mayfield West Phase 2 Stage 2 and the approved ROPA 30 Lands.
- 3 Area of unmapped Permeable Landscape Zone and Other Enhancements is approximately 85 ha. For this assessment, the take out area assumes the PLZ and Other Enhancements will be provided on tablelands outside of Greenbelt and other NHS System areas (e.g. existing key features).
- 4 Includes 15 m buffer applied to all drainage feature polylines

6.2 Selection of Take Out Option

As summarized in the analysis above, both take out options provide a similar land area for natural heritage system planning and either one of the two options could provide an eligible environmental take out for the purposes of confirming that sufficient net developable land needs are provided in the recommended SABE area to meet growth requirements to 2051. Because it is informed by a scoped subwatershed study analysis, the Scoped SWS NHS Base System with an allowance for additional system enhancement take outs is the recommended option to provide base mapping for the environmental take out. Since recommended permeable landscape zone and other system enhancements are not mapped, it is recommended that an additional allowance for the take out areas based on targets identified in the Scoped SWS (i.e. approximately 85 ha) be included and distributed to the community and employment land areas based on their proportional land area requirements in the SABE. Supporting analysis, mapping, targets and recommendations are provided in the Peel 2051 SABE Scoped Subwatershed Study reports. The Scoped SWS NHS take out areas within the SABE Focus Study Area and recommended SABE boundary are approximately 2,250 hectares and 1,243 hectares respectively.

6.3 Conformity with Growth Plan Requirements and Eligibility

It is recommended that the Peel 2051 Regional Official Plan policy direction provide for the implementation of the recommended Scoped SWS NHS within the SABE. The policy direction should include requirements for the completion of detailed subwatershed studies and identification of a natural heritage system to further implement the direction, targets, criteria and recommendations of the broader scale Scoped SWS with requirements for natural heritage system protection, restoration and enhancement to meet or exceed recommended targets and criteria. Refinement of the natural heritage system boundary will be required in accordance with the recommendations of the Scoped SWS. Additional policy requiring the designation of the natural heritage system in the local municipal official plan with direction that development shall not be permitted in the natural heritage system is also recommended to ensure the take out is tied to eligibility requirements in Growth Plan Policy 2.2.7.3.

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7. Non-Environmental Take Outs

The following non-environmental features and areas are recommended to be included as eligible take outs in accordance with the Growth Plan Policy 2.2.7.3:

- Provincially approved rights-of-way for energy infrastructure (energy transmission lines and pipelines)
- Provincially approved rights-of-way for freeways
- Provincially approved rights-of-way for railways
- Rights-of-way for existing railways
 - identified by querying parcel dataset using Peel’s rail line data; selecting parcels that intersect with rail lines, with manual refinement using aerial photography
- Cemeteries
 - Peel cemeteries dataset; “Exact” cemeteries only
- Employment Areas

Although employment areas are included as an eligible take out for the purpose of measuring minimum density targets in the Community Area DGA, for the purpose identifying new settlement area boundaries with sufficient developable lands for both community and employment areas, environmental and non-environmental exclusions have been applied to the entire settlement area to determine if sufficient net developable land area is provided to meet land need requirements for growth to 2051.

Table 7.1 provides a summary of the total area of combined environmental and non-environmental take outs in the FSA and the Staff Recommended Settlement Area Boundary Expansion (February 2022). Separate take out calculations are provided for the Community Area and Employment Area components of the SABE. Appendix B-1 is a map of the recommended environmental and non-environmental take outs within the Staff Recommended SABE Community Area and Employment Area boundaries as identified in February 2022.

Table 7.1: Environmental and Non-Environmental Take Outs within the FSA and SABE (February 2022)

NHS/Environmental Take Out Option	Total Area of the FSA	Total Area of Take Out within FSA	Net Area Remaining in FSA	Take Out as a % of the FSA
Non-Environmental Take Outs	8,059 ha	555 ha	7,504 ha	6.9%
Environmental ¹ and Non-Environmental Take Outs Combined	8,059 ha	2,654 ha	5,405 ha	31.8%
	Total Area of the SABE (Feb. 2022)	Total Area of Take Out within SABE¹	Net Area Remaining in SABE	Total Area of Take Out as a % of the SABE
Non-Environmental Take Outs	5,622 ha	16 ha	5,606 ha	0.0%
Environmental ² and Non-Environmental Take Outs Combined (For All Community and Employment Areas)	5,622 ha	1,253 ha	4,369 ha	22.2%
Environmental ² and Non-Environmental Take Outs Combined (For Community Area only)	3,741 ha	876 ha	2,865 ha ³	23.4%
Environmental ² and Non-Environmental Take Outs Combined (For Employment Area only)	1,881 ha	377 ha	1,504 ha ⁴	20.0%
Undevelopable Lands	Total Area within SABE	Total Area outside SABE and Existing DGA	Total Area of the SABE (Feb. 2022)	Total Area of SABE and Undevelopable Lands
GTA West Corridor – 2020 Preferred Route	0 ha (N/A)	808 ha	5,622 ha	6,430 ha
Brampton Caledon Airport	0 ha (N/A)	81.0 ha	5,622 ha	6,511 ha

Notes:

- 1 Staff Recommended SABE Area (February 2022) excludes Mayfield West Phase 2 Stage 2 and the approved ROPA 30 Lands
- 2 Environmental take out includes Scoped SWS NHS and 85 ha allowance for the recommended Scoped SWS Study's Permeable Linkage Zone (PLZ) and Other Enhancements. 85 ha allowance distributed to Community and Employment Areas based on their proportional areas.
- 3 Net new 2051 DGA for Community Area land after exclusions
- 4 Net new 2051 DGA for Employment Area land after exclusions

8. Recommended Take Outs for Existing Designated Greenfield Areas

The mapping of natural heritage systems, features and areas in existing designated greenfield areas (DGA), unlike in new settlement areas, is more refined as natural heritage designations have been generally established on the basis of more detailed technical studies and planning approvals. In most instances the mapped delineation of environmental take outs in existing DGA incorporates buffers and enhancement areas and reflects established limits of development. Accordingly, the recommended approach to mapping existing DGA utilizes existing mapped boundaries of natural heritage systems and features as designated in municipal official plans and, where information is available, in recently approved secondary plans.

Where natural heritage systems, features and areas have been refined and designated in secondary plan areas, the natural heritage designations of the secondary plan have been used to replace broader scale mapping in the municipal official plan. Where appropriate, environmental take outs in the existing DGA have been refined to parcel fabric in developed areas to match established designation boundaries and approved limits of development.

The base data to be used in the take out calculation is attached as Appendix C along with the procedure to generate the GIS shapefile. Mapped environmental and non-environmental exclusions include:

Environmental Take Outs

- Region of Peel – Core Areas of the Greenlands System in Peel (Schedule A as amended through Peel 2051)
- Town of Caledon – Environmental Policy Areas (Schedule A)
- City of Brampton – Natural Heritage Features and Areas (Schedule D)
- City of Mississauga – Significant Natural Area, Natural Green Spaces, Special Management Areas and Linkages (Schedule 3)
- Refinements based on secondary plan natural heritage designations
- Conservation Authority Flood Plains (“engineered” floodplains)

Non-Environmental Take Outs

- Cemeteries
- Hydro Transmission Corridors
- Railway Rights of Way
- Ninth Line Transitway Right of Way
- TransCanada Pipeline Right of Way
- Employment Areas
- Freeways, as defined by and mapped as part of the Ontario Road Network

Table 8.1: Environmental and Non-Environmental Exclusions within Existing DGA (ha) ¹

Exclusion / Undevelopable Lands	Brampton	Caledon	Mississauga	Peel
Environmental Exclusions	1,600 ha	297 ha	168 ha	2,065 ha
Non-Environmental Exclusions				
Non-Environmental Exclusions ^{1,2}	227 ha	49 ha	83 ha	359 ha
Undevelopable Lands				
GTA West Transportation Corridor – 2020 Preferred Route ¹	268 ha	71 ha	0 ha (N/A)	339 ha
Ninth Line Transitway ¹	0 ha (N/A)	0 ha (N/A)	10 ha	10 ha
Total	2,095 ha	417 ha	261 ha	2,773 ha

Notes:

- 1 Only portions that do not overlap with environmental exclusions and with each other
- 2 Non-Environmental Exclusions include cemeteries, Hydro Transmission Corridors, Railway Rights-of-way, TransCanada Pipeline Right-of-way, Ninth Line Transitway, Freeway/Existing 400 Series Highway Rights-of-way and Employment Areas

Table 8.2: Existing Designated Greenfield Area (DGA) Developable Land Area (ha) ¹

Municipality	DGA Lands							
	Gross	Total Community Area DGA	Total Employment Area DGA	Environmental Exclusions	Non-Environmental Exclusions ²	Undevelopable Lands	Total Exclusions & Undevelopable	Net Developable
Existing DGA								
Brampton	8,737 ha	7,220 ha	1,517 ha	1,600 ha	227 ha	268 ha	2,095 ha	6,642 ha
Caledon	2,086 ha	1,326 ha	760 ha	297 ha	49 ha	71 ha	417 ha	1,669 ha
Mississauga	538 ha	524 ha	14 ha	168 ha	83 ha	10 ha	261 ha	277 ha
Existing Community DGA	9,070 ha	9,070 ha	0 ha (N/A)	1,772 ha	280 ha	251 ha	2,303 ha	6,767 ha
Existing Employment DGA	2,291 ha	0 ha (N/A)	2,291 ha	293 ha	78 ha	98 ha	470 ha	1,821 ha
Total Existing DGA	11,361 ha	9,070 ha	2,291 ha	2,065 ha	358 ha	349 ha	2,773 ha	8,588 ha
New 2051 DGA								
New 2051 Community DGA	3,741 ha	3,741 ha	0 ha (N/A)	869 ha	7 ha	0 ha (N/A)	876 ha	2,865 ha
New 2051 Employment DGA	1,881 ha	0 ha (N/A)	1,881 ha	374 ha	3 ha	0 ha (N/A)	377 ha	1,504 ha
Total New 2051 DGA	5,622 ha	3,741 ha	1,881 ha	1,243 ha	10 ha	0 ha (N/A)	1,253 ha	4,369 ha
Existing DGA and New 2051 DGA								
Total 2051 Community DGA	12,811 ha	12,811 ha	0 ha (N/A)	2,641 ha	287 ha	251 ha	3,179 ha	9,632 ha
Total 2051 Employment DGA	4,172 ha	0 ha (N/A)	4,028 ha	668 ha	81 ha	98 ha	847 ha	3,325 ha
Total 2051 DGA	16,983 ha	12,955 ha	4,028 ha	3,309 ha	368 ha	349 ha	4,026 ha	12,957 ha

Notes:

- 1 Only portions that do not overlap with environmental exclusions and with each other
- 2 Environmental exclusions include Employment Areas for purposes of calculating DGA density

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9. Summary

The above methodology is recommended to be applied to measure density targets in existing and new DGA and to delineate new settlement boundaries (i.e. new DGA) with sufficient net developable area to meet land needs in accordance with Policies 2.2.7.3 and 2.2.8.2 of the Growth Plan. The approach to identify environmental take outs in new settlement areas provides two “take out” methods, one determined by applying buffers to existing mapped data, and a second that provides a more refined regional scale conceptual natural heritage system based on a scoped sub-watershed study. The selection of the recommended natural heritage system mapping option for new settlement areas has considered the more refined analysis provided through the Scoped Subwatershed Study. It is also recommended that appropriate direction be considered in the policy framework for the settlement expansion to require implementation and refinement of the regional scale natural heritage system at the secondary plan stage based on the recommended targets, criteria and recommendations of the Scoped Subwatershed Study.

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Appendix A: Table of Environmental and Non-Environmental Exclusions for New Settlement Areas

Step	Layer	Files	Attribute Name	Date
1	Region of Peel – Schedule A (Core Areas of the Greenlands System in Peel – as shown on proposed Schedule Y1 – August 2020)	Provincially significant wetlands	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
		Core woodlands	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
		Environmentally sensitive or significant areas	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
		Provincial Life Science Areas, Natural and Scientific Interest	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
		Escarpment Natural Areas of the Niagara Escarpment Plan	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
		Core Valley and Stream Corridors	GREENSYS	August 2020 Draft Schedule Y1 (formerly OP Schedule A)
2	Caledon Official Plan Environmental Policy Areas – All Schedules including Palgrave Estate EZ1	Woodlands	C_EPA_Jul4	Jan 2018 (data received July 2018)
		Wetlands	C_Wetlands_Jul4	April 2018 (data received July 2018)
		Niagara Escarpment Natural Areas	C_EPA_Jul4	April 2018 (data received July 2018)
		ANSI	C_EPA_Jul4	April 2018 (data received July 2018)
		Environmentally Significant Areas	C_EPA_Jul4	April 2018 (data received July 2018)
		Threatened and endangered species	C_EPA_Jul4	April 2018 (data received July 2018)
		Oak Ridges Moraine Key Natural Heritage Features	C_EPA_Jul4	April 2018 (data received July 2018)
		Oak Ridges Moraine Hydrologically Sensitive Features	C_EPA_Jul4	April 2018 (data received July 2018)
		Greenbelt Key Natural Heritage Features	C_EPA_Jul4	April 2018 (data received July 2018)

Step	Layer	Files	Attribute Name	Date
		Greenbelt Key Hydrological Features	C_EPA_Jul4	April 2018 (data received July 2018)
		Fisheries	C_EPA_Jul4	April 2018 (data received July 2018)
		Valley and Stream Corridors	C_EPA_Jul4	April 2018 (data received July 2018)
		Palgrave Estate EZ1	C_PERC_EZ1	April 2018 (data received July 2018)
5	Greenbelt Plan Area (Protected Countryside Area)	Greenbelt Plan Area boundary (Protected Countryside Area) within the FSA	GRNBELT	May 2017
6	Additional Environmental Features Where Development is Prohibited by Policy in the Regional Official Plan or Local Official Plan	Wetlands (all wetlands, evaluated Provincially significant, evaluated non-Provincially significant and unevaluated wetlands)	WETLAND	August 2020
		LIO ANSIS (All provincially significant and regionally significant earth science and life science ANSIs)	ANSI_ES ANSI_LS	March 2019
		Peel Core, NAC and PNAC Woodlands (> .5 ha in size)	LIO_WOOD	March 2019
		Peel Core and NAC valley and stream corridors	VALSTREAM	March 2019
		Watercourses - Watercourse Polylines	WATERCOURS	March 2019
		Rivers - River Polygons	RIVERS	March 2019
		Drainage	DRAINAGE	March 2019
		Waterbodies (> 0.5 ha. in size including natural lakes, natural ponds and marsh	WATERBOD	March 2019

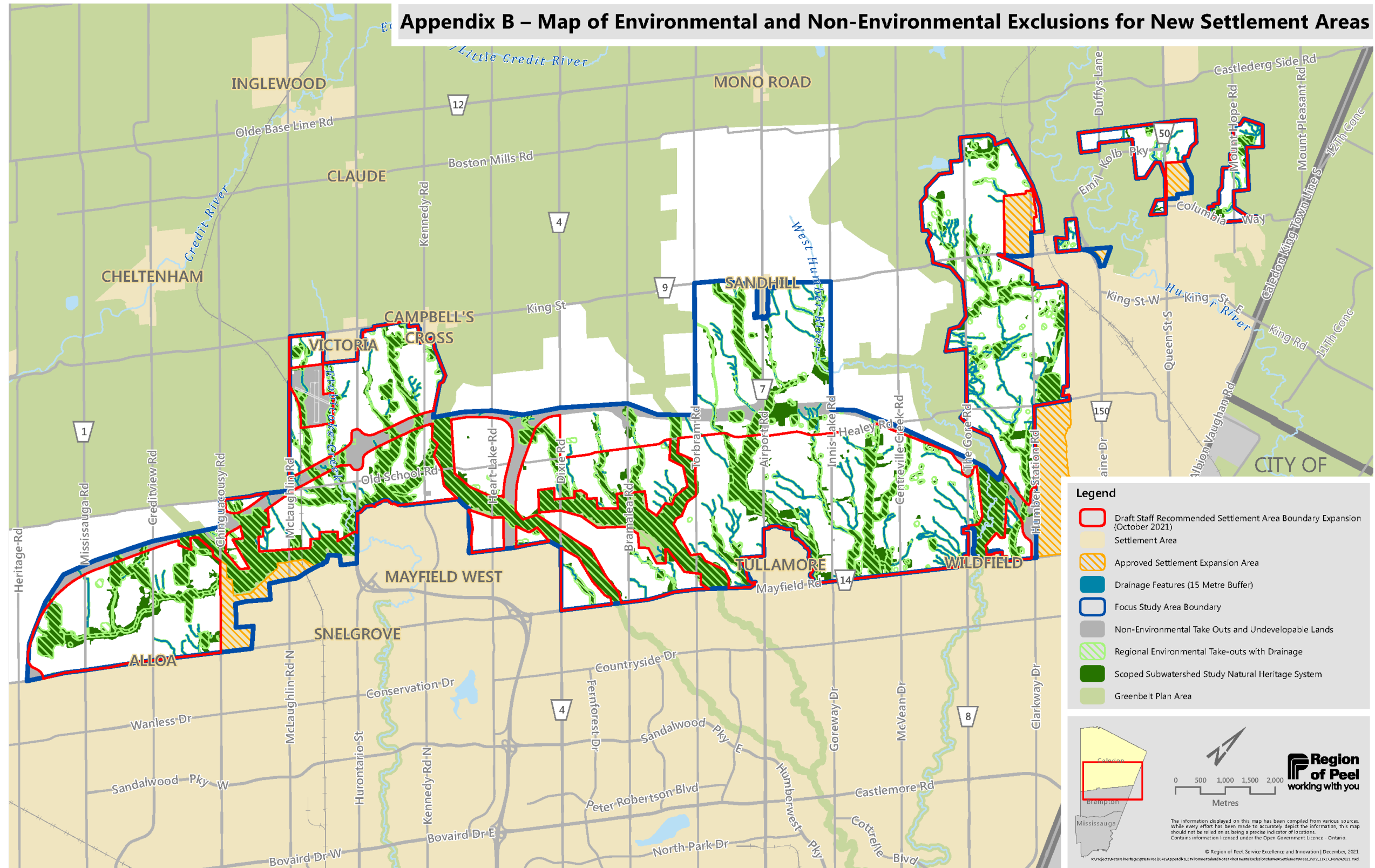
Step	Layer	Files	Attribute Name	Date
		waterbodies and Claireville Reservoir; excluding off-line artificial reservoirs, industrial ponds, sewage lagoons and stormwater management ponds)		
		Escarpment Natural Areas	NEP Escarpment Natural Areas	March 2019
7	Conservation Authority Flood Plains	Engineered/Regulatory flood plains	FLOOD	September 2018
8	Secondary Plan Review	ROPA 28 lands	N/A	September 2018
		ROPA 33 Ninth Line lands	N/A	January 2019
		ROPA 34 Mayfield West Phase 2 Stage 2 lands	N/A	October 2018
		ROPA 30 lands	N/A	November 2020
9	Non-Environmental Features Layer	Cemeteries	CEMETERY	2012
		Hydro Transmission Corridors (Settlement areas to exclude GTA West Transportation Corridor EA – 2020 Preferred Route)	HydroROW GTA West Transportation Corridor EA – 2020 Preferred Route	2012 and 2019
		Railway Right of Way (excluding any adjacent land holdings outside the immediate ROW)	RAILROW	2019
		TransCanada Pipeline Right of Way	PIPELINE	2019
		Existing 400 series highways (Settlement areas to exclude GTA West Transportation Corridor EA – 2020 Preferred Route)	F400sROW GTA West Transportation Corridor EA – 2020 Preferred Route	2019 2020 (GTA West Corridor Preferred Route)

Methodology, Inputs and Process to Calculate Net Developable Area for New Settlement Areas:

- 1) Create a copy of each of the shapefiles listed above by step.
- 2) Simplify their attribute tables by removing all fields.
- 3) Add new field with layer name (e.g. "FLOOD") and enter "YES" for all features in the shapefile.
- 4) Use the Geoprocessing tool Union to join the shapefile(s) of Step 1 with the shapefile(s) of Step 2.
- 5) Dissolve newly created shapefile, preserving fields.
- 6) Repeat process joining the newly created Step 1&2 file with the shapefile(s) of Step 3. Continue until all shapefiles above have been joined together.
- 7) Run the tool 'Multi-part to Single-part' to clean up the newly joined shapefile.
- 8) Create a new field in the final shapefile and calculate geometry to get total takeout area.

Note: Region to obtain latest datasets prior to finalizing environmental and non-environmental exclusions.

Appendix B: Map of Environmental and Non-Environmental Exclusions for New Settlement Areas



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Appendix C: Table of Environmental and Non-Environmental Exclusions for Existing Designated Greenfield Areas

Step	Layer	Files	Policy	Attribute Name	Date
1	Region of Peel – Schedule A (Core Areas of the Greenlands System in Peel)	Provincially significant wetlands	ROP 2.3.2.2 (definition)	GREENSYS	November 2013 (OP Schedule A)
		Core woodlands	ROP 2.3.2.6 (development prohibited)	GREENSYS	November 2013 (OP Schedule A)
		Environmentally sensitive or significant areas		GREENSYS	November 2013 (OP Schedule A)
		Provincial Life Science Areas, Natural and Scientific Interest		GREENSYS	November 2013 (OP Schedule A)
		Escarpment Natural Areas of the Niagara Escarpment Plan		GREENSYS	November 2013 (OP Schedule A)
		Core Valley and Stream Corridors		GREENSYS	November 2013 (OP Schedule A)
2	Caledon – Schedule A (Environmental Policy Areas)	Woodlands	Caledon OP 3.2.3.1.1 (definition)	C_EPA	Jan 2018 (Received Jan 2019)
		Wetlands	Caledon OP 5.7.3.1.1 (development prohibited generally, limits / exceptions in subsequent sections)	C_EPA	April 2018 (Received Jan 2019)
		Niagara Escarpment Natural Areas	C_EPA	April 2018 (Received Jan 2019)	
		ANSI	C_EPA	April 2018 (Received Jan 2019)	
		Environmentally Significant Areas	C_EPA	April 2018 (Received Jan 2019)	
		Threatened and endangered species	C_EPA	April 2018 (Received Jan 2019)	
		Oak Ridges Moraine Key Natural Heritage Features	C_EPA	April 2018 (Received Jan 2019)	
		Oak Ridges Moraine	C_EPA	April 2018	

		Hydrologically Sensitive Features			(Received Jan 2019)
		Greenbelt Key Natural Heritage Features		C_EPA	April 2018 (Received Jan 2019)
		Greenbelt Key Hydrological Features		C_EPA	April 2018 (Received Jan 2019)
		Fisheries		C_EPA	April 2018 (Received Jan 2019)
		Valley and Stream Corridors		C_EPA	April 2018 (Received Jan 2019)
	Caledon – Bolton Residential Expansion Settlement Area ROPA 30 Lands	Take out for the ROPA 30 lands include all wetlands, woodlands, valley and stream corridors, watercourses and drainage features with 30 m buffers and the GTA West 2020 Preferred Route. File name: BRES_SABEtakeoutsIntersect_20201008	Region of Peel OP 5.4.3.2.9.1 Natural Heritage Take out was basis for settlement and ROPA approved by the LPAT.	N/A	September 2020
3	Brampton – Schedule D (Natural Heritage Features and Areas)	Valley lands/Watercourse Corridors	Brampton OP 4.6.7.1 (development prohibited)	B_Valley	Received Jan 2019
		Woodlands	Brampton OP 4.6.8.1/4.6.8.2 (developers must maintain/restore/enhance; development must be in accordance with Woodlot	B_Wood	Received Jan 2019

			Development Guidelines and Province's NHS reference manual)		
		Wetlands (Provincially Significant and Other)	Brampton OP 4.6.9.1 (development prohibited on Provincially Significant Wetlands) Brampton OP 4.6.9.3 (other wetlands must be studied and maintained/restored/enhanced as needed)	B_WetL	Received Jan 2019
		Environmentally Sensitive/Significant Areas	Brampton OP 4.6.10 (development prohibited, with limited exceptions)	B_ESA	Received Jan 2019
		ANSIs	Brampton OP 4.6.1.1 (development prohibited unless no negative impacts)	B_ANSI_LS B_ANSI_ES	Received Jan 2019
		Provincial Greenbelt (Protected Countryside, Natural Heritage System Overlay)	Brampton OP 4.6.14	B_GBelt	Received Jan 2019
4	Mississauga – Schedule 3	Significant Natural Area/Natural Green Spaces	Mississauga OP 6.3.27 (development not permitted unless reasonable	M_NATSYS	Received Jan 2019

			<p>alternatives have been considered and negative impacts minimized)</p> <p>Mississauga OP 6.3.28 (development not permitted (with limits) in provincially significant wetlands/coastal wetlands, endangered or threatened species, fish habitat)</p> <p>Mississauga OP 6.3.32 (development not permitted in natural green spaces unless no negative impact)</p>		
		Special Management Areas	<p>Mississauga OP 6.3.32 (development not permitted unless no negative impact)</p>	M_SPECMGM	Received Jan 2019
		Residential Woodlands	<p>Residential woodlands: Mississauga OP 6.3.19 (development will have</p>	M_WOOD	Received Jan 2019

			regard to how existing tree canopy will be protected, enhanced)		
		Linkages	Mississauga OP 6.3.32 (development not permitted unless no negative impact)	M_LINKAGE	Received Jan 2019
		Ninth Line Natural Heritage System	City of Mississauga OP 6.20.2.4 (protect and enhance NHS identified in subwatershed study) Includes Greenlands designation as shown on Ninth Line OP schedules	M_NL_NHS	Received Jan 2019
5	Greenbelt (Protected Countryside Only)	Protected Countryside (Only)	Protected Countryside only within Caledon-Schedule A (Env. Policy Areas)	GRNBELT	2017
6	Conservation Authority Flood Plains	Engineered/Regulatory flood plains	O. Reg. 160/06 O. Reg. 166/06 2(1) and 3(1) (development prohibited without permission)	FLOOD	September 2018
7	Non-Environmental Features Layer	Cemeteries	Cemetery layer queried for "Exact" polygons	CEMETERY	2012

		(POLTYPE)		
	Hydro Transmission Corridors	Queried hydro one networks ROW and hydro one networks transformer station Additional manual parcel selection based on aerial imagery interpretation	HydroROW	2012
	Railway Right of Way	Railway ROW (excluding any adjacent land holdings outside the immediate ROW). Used parcel fabric dataset to select rail parcel ownership by location (parcels that intersect with rail line dataset)	RAILROW	2019
	Ninth Line Transitway ROW - not included as a "take out" but identified as undevelopable lands excluded from the calculation of developable area for the purpose of measuring greenfield density.	PPS 1.6.8.1	M_407T_ROW	2021

		TransCanada Pipeline Right of Way	Buffered 30 metres from pipeline line	PIPELINE	2019
		Existing 400 series highways	Single line street network – queried class=Provincial Freeway; selected Parcel ownership by location; manual refinement to remove excess parcels	F400sROW	2019
		GTA West Transportation Corridor EA – 2020 Preferred Route not included as a “take out” but identified as undevelopable lands excluded from the calculation of developable area for the purpose of measuring greenfield density.	PPS 1.6.8.1	GTA West Corridor EA – 2020 Preferred Route	2020 (GTA West Corridor Preferred Route)
8	Region of Peel Employment Areas	Region of Peel Draft Employment Area Schedule Y6 (Peel 2051)	Refer to Caledon Official Plan	Draft Employment Area	June 2021

Refinements:

- Latest versions of datasets as currently designated in the respective official plans have been obtained.
- Environmental take outs in the existing DGA have been refined to parcel fabric in developed areas to match established natural heritage designation boundaries. Where natural heritage systems, features and areas have been refined and designated in secondary plan areas, the natural heritage designations of the secondary plan have been used to replace any broader scale mapping in the municipal official plan.

Methodology, Inputs and Process to Calculate Net Developable Area for Existing Designated Greenfield Areas:

- 1) Create a copy of each of the shapefiles listed below and save them in folders by step.
- 2) Simplify their attribute tables by removing all fields.
- 3) Add new field with layer name (e.g. "FLOOD") and enter "YES" for all features in the shapefile.
- 4) Use the Geoprocessing tool Union to join the shapefile(s) of Step 1. Dissolve newly created shapefile, preserving layer fields.
- 5) Repeat this process for Steps 2-6 to get 6 shapefiles by step.
- 6) Union the newly created Step 1 file with the Step 2 shapefile. Continue until all shapefiles above have been unioned.
- 7) Run the tool 'Multi-part to Single-part' to clean up the new shapefile.
- 8) Create a new field in the final shapefile and calculate geometry to get total takeout area.

Notes:

- In addition to Steps 1-6, the calculation of the area over which the minimum density target for the entire DGA is measured excludes employment areas as designated in the Region of Peel Official Plan (Peel 2051) so that the measurement of the minimum density target applies to community areas only.
 - Ninth Line NHS and CA floodline data refined to align with local municipal land use designations
-

Appendix D: Map of Environmental and Non-Environmental Exclusions for Existing Designated Greenfield Areas

