



BRONTE RIVER

TREE CANOPY COVERAGE ANALYSIS

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1.0 INTRODUCTION

1.1 Purpose of the Analysis

The proposed Bronte River Tree Canopy Coverage Analysis represents a general assessment of the projected tree canopy coverage for these lands within West Oakville. The proposed development is planned as a mix of residential dwellings, including single detached dwellings and townhouse dwellings, with medium density residential encompassing a condominium block situated along the eastern limits of the subject lands.

The analysis will determine how these land uses can contribute to the tree canopy coverage and will estimate the projected coverage for the local streets, in part, on standard calculation methods outlined in the North Oakville Urban Forest Strategic Management Plan (NOUFSMP - Natural Resource Solutions Inc. & Dillon Consulting Limited, November 2011). It will also address potential measures within the Bronte River study area that will help meet the criteria established by the NOUFSMP for achieving the Town of Oakville's long term objective of a 40% urban forest canopy cover, including criteria related to soil volume, tree health and tree spacing.

This analysis will be informed by the current land use plan available, with future driveway, parking layouts and utility constraints considered as an average based on similarly developed residential streetscapes in the surrounding communities.

1.2 Study Area

Situated with the community of West Oakville, the Bronte River lands are located on Bronte Road (Regional Rd 25), east of Bronte River, north of the QEW, south of Upper Middle Road. The existing topography and vegetation of the subject lands is that of gently sloped manicured lawn and wooded areas. NHS lands are a significant natural feature, surrounding the majority of the site's south, west, and north boundaries. A small man-made pond is situated toward the west side of the subject lands. Further west, Bronte Creek runs through the NHS with a ravine trail network that connects to the north to Bronte Creek Provincial Park.

The Bronte River lands are adjacent to the current Glen Abbey Encore development on the east side of Bronte Road, with future medium density residential land uses fronting the subject lands. South of the future east-west collector road, recently built rear lane townhouses are designed in a contemporary style. The Halton Regional Centre, Halton Regional Police Station and Emergency Services Buildings, and the Deerfield Golf Course are located to the south east, north of the QEW. Established commercial/residential areas are located to northwest (Palermo West) and southeast (Bronte Village). Built form character of the housing in the area includes a range of architectural styles and materials.

Within the subject lands, the Heritage home on Bronte Road and the Georgian-style Enns House will be retained and sensitively integrated into the new proposed development. Refer to the Urban Design Brief for additional information on the Heritage home, and its proposed relocation at the entrance into the development from Bronte Road.

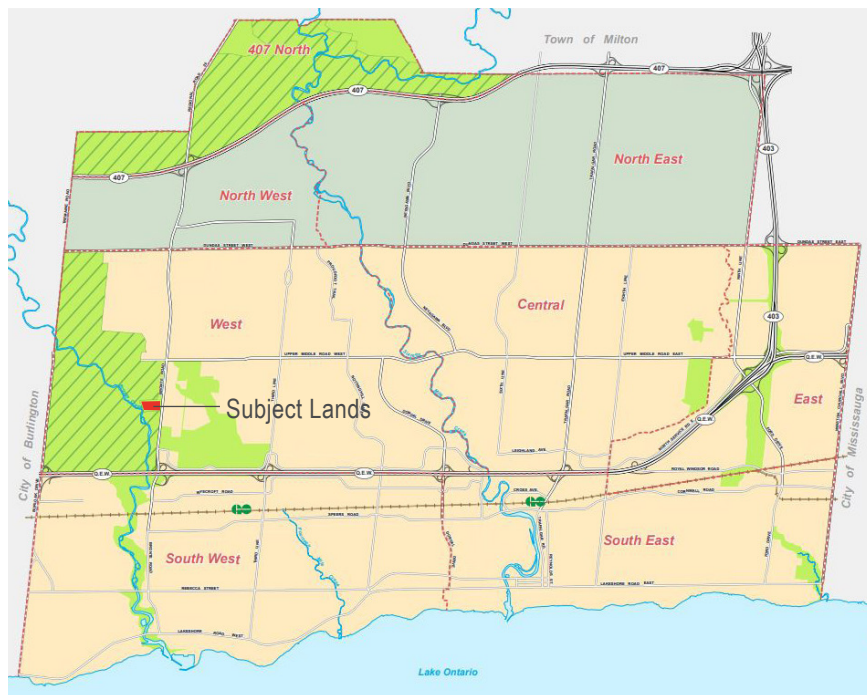


Fig. 1.2a - Location Bronte River Subject Lands in west Oakville (Livable Oakville - Schedule E: Land Use Boundaries, 2018)



Fig. 1.2b - Aerial view facing north east



Fig. 1.2c - Plan showing land uses on the Bronte River subject lands, within the surrounding residential development

1.3 North Oakville Urban Forest Strategic Management Plan (NOUFSMP)

The North Oakville Urban Forest Strategic Management Plan is a high level strategy and planning study prepared to provide the Town of Oakville with recommendations and guidelines for achieving a sustainable, healthy urban forest for the North Oakville lands. This strategy is an extension of the Town's long term vision to achieve its 40% tree canopy coverage target. Given that there is not currently specific criteria specified for broader Oakville, NOUFSMP will be applied to this site in West Oakville for the purposes of this analysis.

North Oakville comprises approximately 4,000 hectares of land, with roughly 1,600 hectares of tree canopy coverage required to achieve the 40% target. The designated Natural Heritage System (NHS), which includes native forests, cultural woodlands, shrub lands and agricultural hedgerows, accounts for approximately 1,200 hectares of North Oakville's land area, making it a significant contributor to achieving the 40% target. The remaining approximately 400 hectares of coverage is expected to be achieved through land development (residential, employment/industrial, institutional and commercial), including streetscapes, parks, buffers, cemeteries, stormwater management facilities, parking lots, etc.

The following is a brief summary of some of the targets, recommendations and measuring criteria described in the NOUFSMP that are pertinent to assessing the ultimate long term tree canopy coverage within the Bronte River study area.

1.3.1 Tree Classification and Sizing

The canopy coverage plan shall comply with the following guidelines -

- medium stature trees (10m spread) = 78.5 sq.m and shown as 10m dia.

1.3.2 Projected Street Tree Canopy Coverage (Residential)

As a general proposed standard, the NOUFSMP recommends achieving a 20% street tree canopy coverage for residential developments. However, it is noted that trees will not reach their full genetic size potential within most streetscape environments unless enhanced rooting techniques are employed to achieve the growing environment necessary to support good quality canopy coverage. This is particularly important within a more dense, compact and transit-supportive environment where the utilization of enhanced rooting techniques, such as rooting break-out zones below sidewalks and driveways within engineered soil systems, may be required to achieve the 30 cu.m soil volume requirement.

2.0 COMMUNITY TREE COVERAGE

Within the Bronte River study area, the canopy coverage contribution will be achieved through the proposed streetscape treatment. Although not measured specifically in this analysis for the community tree coverage, a secondary contribution may be considered through front and rear yard landscape treatment for dwellings. This can account for approximately 1-2% coverage and is typically derived from smaller stature trees.

2.1 Street Tree Canopy Coverage

The street tree canopy coverage calculation for the Bronte River study area is a preliminary estimate based on a conceptual land use plan primarily characterized by a low density residential area, corresponding with the Town's planning designations for these lands in the Livable Oakville Plan (2006). Along the eastern boundary of the site, the condominium block (Condo Block 'A') comprises medium density residential land uses that will not be subject to this analysis. Considering the type of residential development intended for the community, it is not expected that engineered soils (e.g. structural soils or cell support structures) will be utilized on residential streets. The street tree canopy coverage corresponds with the proposed local roads and all trees to be planted within grass boulevards.

Street trees have been indicated, on average, at approximately one tree per lot. The street trees in this assessment have been designated as medium stature, until such time a more comprehensive streetscape plan can be undertaken as part of a detailed landscape plan review process. Medium stature trees have been identified on all streets for this report to demonstrate a minimum coverage calculation.

The preliminary tree canopy coverage results are as follows (refer to figure 2.1):

- Total Bronte River TCCA Applicable Land Area - approx. 27,850 sq.m (not including the Woodlot, Condominium Block, buffer and LID).
- Total Street Tree Canopy Coverage Area (based on medium stature trees) - approx. 6357 sq.m (not including the Woodlot, Condominium Block, Buffer and LID).
- **Bronte River Street Tree Canopy Coverage = 22.8%**
(6357/27,850)



Fig. 2.1 - Conceptual Street Tree Canopy Coverage Plan for Bronte River

2.2 Open Spaces

As part of the Bronte River overall planning and coordination of amenities, a series of open spaces and connections are proposed within the development. The surrounding NHS lands and woodlot to the south offer opportunities for trail connectivity to natural areas and strategic views toward open space features.

NHS Buffer and Woodlot

The proposed land use fabric for Bronte River, including streets, and residential land uses, was planned and designed with the surrounding natural areas on the south, west, and northwest edges of the subject lands. To the south of the developable area, a 5.32ha woodlot is dedicated as part of the NHS. This woodlot provides opportunities for trail connections through this preserved natural feature to the existing multi-use trail on the west side of Bronte Road.

An Environmental Impact Assessment (EIA) was prepared by Beacon Environmental to assess the potential impacts of the redevelopment proposal on natural heritage features and functions. In evaluating the potential impacts of the proposed Draft Plan, a multi-disciplinary integrated approach was adopted to ensure that interrelationships between natural heritage features and surface water and groundwater systems and development related effects were appropriately considered.

As the proposed Draft Plan will be limited to portions of the subject property that already support development and will be setback further from natural heritage features and natural hazards than the existing development, no direct impacts to significant natural heritage features and their ecological functions are anticipated. Indirect impacts related to the increased human density will be mitigated through implementation of buffers and fencing and controlled access to the adjacent valleylands and tableland woodlot.

Once the preliminary landscape design for the buffer is complete, tree canopy coverage within the buffer can be calculated based on the amount of landscape area that could possibly be covered by canopy.

LID

A LID measure is proposed along the south side of the developable portion of the subject lands. The primary LID is a Bio-filtration swale. It is a grass lined or vegetated swale with a sand filtration system at the bottom. Once preliminary design is complete, tree canopy coverage can be calculated based on the amount of landscape area that could possibly be covered by canopy, with the exclusion of the swale and any hard landscape features.

Open Space / Vista / Walkway Blocks

Several open space / vista blocks are proposed to enhance the development by supporting safe and direct access by walking and cycling through the development, trails and the broader community. The proposed open space / vista / walkway blocks in Condo Block 'A' will provide opportunities for soft landscaping and pedestrian connections between laneways. At the southern extent of the developable lands, walkway blocks will provide physical and visual connections to the woodlot and convenient access to the multi-use trail on Bronte Road. These blocks may include low planting and soft landscape treatment on either side of the path. Any planting shall not obstruct views through the walkway block.

2.3 Conclusion

There are many factors that will contribute to the health and long term sustainability of the tree canopy within Bronte River and the surrounding development areas. In addition to maximizing tree planting opportunities, resolving issues related to soil compaction, soil quality, soil volumes and tree species selection in an increasingly urban environment will be fundamental to reaching the overall 40% tree canopy coverage targeted for the Town of Oakville. These issues can be considered in a more comprehensive depth during the detailed landscape design process.



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