

PRESERVE NORTH (PHASE 4)

TREE CANOPY COVERAGE ANALYSIS

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1.0 INTRODUCTION

1.1 Purpose of the Analysis

The proposed Preserve North - Phase 4 (herein referred to as Phase 4) Tree Canopy Coverage Analysis represents a general assessment of the projected tree canopy coverage for these lands within North Oakville. The proposed development is planned as a mix of residential dwellings, including single detached dwellings and townhouse dwellings, with the higher density built form associated with the Neighbourhood Centre Area situated in the north-east block of the subject lands. Other land uses include portions of the future elementary school at the north-east corner, walkway and vista blocks, and the interface with the designated NHS in the south and west edges of the study area.

The analysis will determine how these land uses can contribute to the tree canopy coverage and will estimate the projected coverage for streets, and open space blocks, 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 Phase 4 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 previous phases of The Preserve.

1.2 Study Area

The development site for Phase 4 is situated north of Dundas St., south of Burnhamthorpe Rd, and west of Sixth Line, comprising the northern extent of the first four phases which combine to form The Preserve lands. The existing topography and vegetation of the subject lands is that of gently rolling farmland, hedgerows, and wooded areas. NHS lands including woodlots and wetlands, are a significant natural feature, with an NHS corridor running east-west at southern end of the subject lands.

The Phase 4 lands are bounded by the future extension of Preserve Drive on the east, with future residential land uses immediately to the east and north. NHS lands surround the west and southern boundaries of the site. A future neighbourhood park is planned on the north-east side of the subject lands with a future public elementary school partially contained in Phase 4. Further south beyond the NHS, the lands are fully urbanized up to North Park Boulevard and consist of low and medium density residential uses. In accordance with the North Oakville Trails Plan, a trail network along the northern boundary of Phase 3 will connect to the Phase 4 development.



Fig. 2.3 - Major Trail located in Phase 3 will be connected to Phase 4

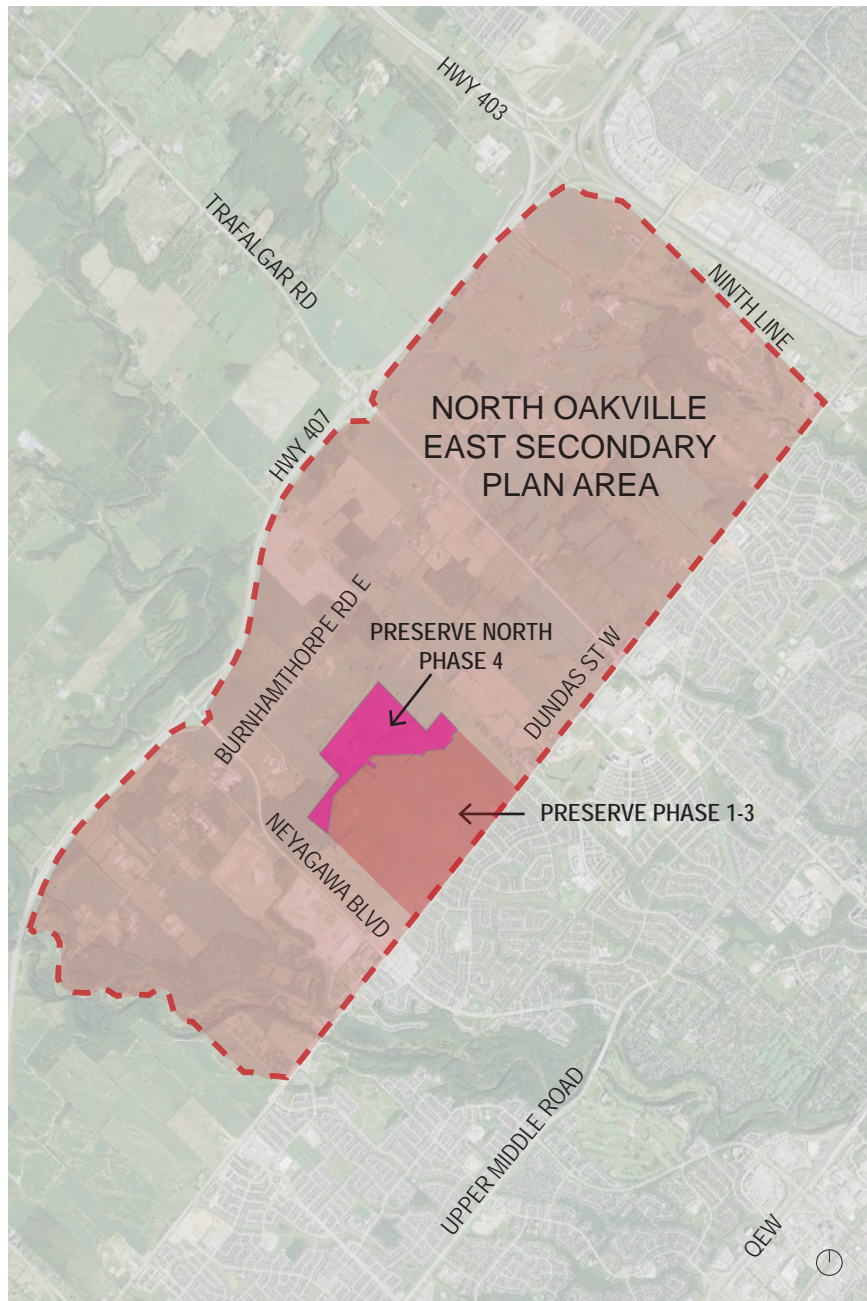


Fig. 1.0 - The Preserve Phase 4 lands within the North Oakville Secondary Plan Area



Fig. 2.2f - Preserve Phase 4 Subject Lands

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.

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 Phase 4 study area.

1.3.1 Tree Classification and Sizing

The canopy coverage plan shall comply with the following guidelines -

- small stature trees (3m spread) = 38.5 sq.m and shown as 3m dia.
- medium stature trees (10m spread) = 78.5 sq.m and shown as 10m dia.
- large stature trees (14m spread) = 154 sq.m and shown as 14m 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-oriented 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.

3.0 COMMUNITY TREE COVERAGE

Within the Phase 4 study area, the canopy coverage contribution will be achieved through the proposed streetscape treatment, walkways that comprise the public open spaces, landscape strips and private drive streetscaping. Although not measured specifically in this analysis, 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 Phase 4 study area is a preliminary estimate based on a conceptual land use plan primarily characterized by General Urban and Sub Urban Areas, corresponding with the Town's planning designations for these lands. Towards the northeast portion of the site, one (1) block is designated as a Neighbourhood Centre Area and will consist of front loaded townhouses. 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. The street tree canopy coverage corresponds with the proposed road hierarchy 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 and large stature, until such time a more comprehensive streetscape plan can be undertaken as part of a detailed landscape plan review process. Large stature trees have been situated along Carding Mill Trail and Preserve Drive, where greater boulevard widths are anticipated. Medium stature trees have been identified for the local streets.

The preliminary tree canopy coverage results are as follows (refer to figure 2.1.1):

- Total Phase 4 TCCA Applicable Land Area - approx. 212,460 sq.m (not including the NHS and Future Elementary School).
- Total Street Tree Canopy Coverage Area (based on medium and large stature trees) - approx. 43,650 sq.m (not including the NHS and Future Elementary School).
- **Phase 4 Street Tree Canopy Coverage = 20.5%** (43,650/212,460)



Fig 5.0 - Conceptual Street Tree Canopy Coverage Plan for Phase 4.

2.2 Open Spaces

Public Elementary School

The Public Elementary School site is partially located within the Phase 4 subject lands (0.98 ha. of 2.43 ha.), with the remainder situated in the future development lands to the north. The school site and adjacent neighbourhood park will be planned in future phases of Preserve North. Similar to previous neighbourhood parks in the community, the tree canopy coverage will be calculated based on the amount of landscape area that could possibly be covered by canopy, with the exclusion of hard landscape features, parking areas, buildings and sports fields.

Vista Block

Along the southern border between of the proposed residential development and the NHS, a 9m width vista block provides a direct visual connection to the NHS aligning with the terminus of Street 'D', a north-south local road. A vista block has been strategically placed within the street network in Phase 4 to allow for an amenity area and view to the NHS. This vista block may narrow deciduous trees. Planting on either side of the path 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 Phase 4 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.

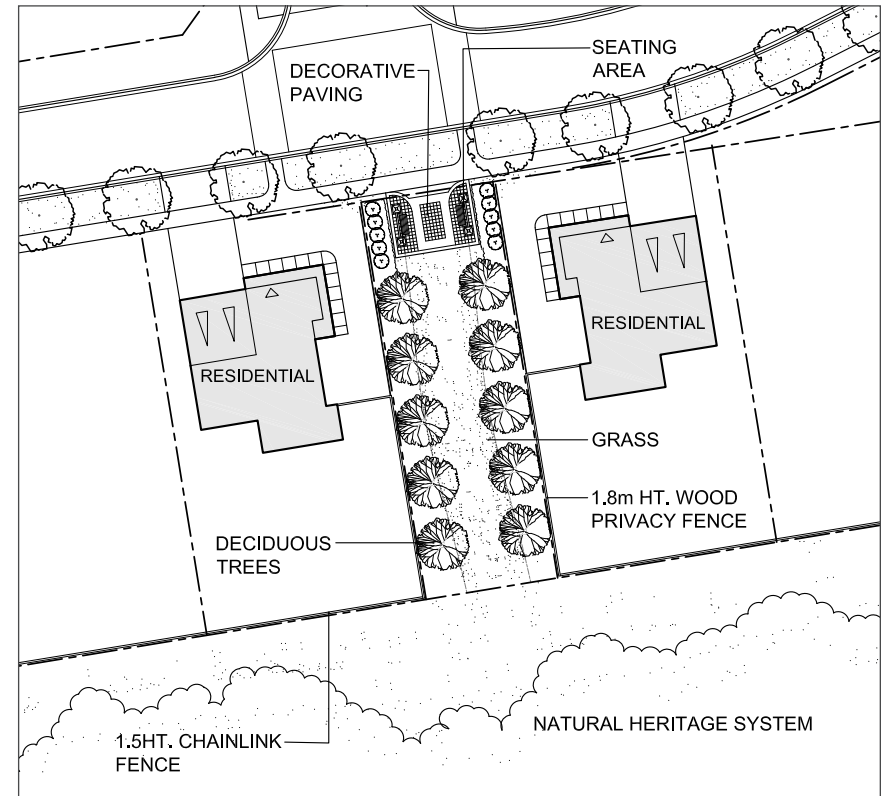


Figure 6.1.3b - Conceptual plan of a vista block treatment with small stature trees and a view of the NHS to the south.

