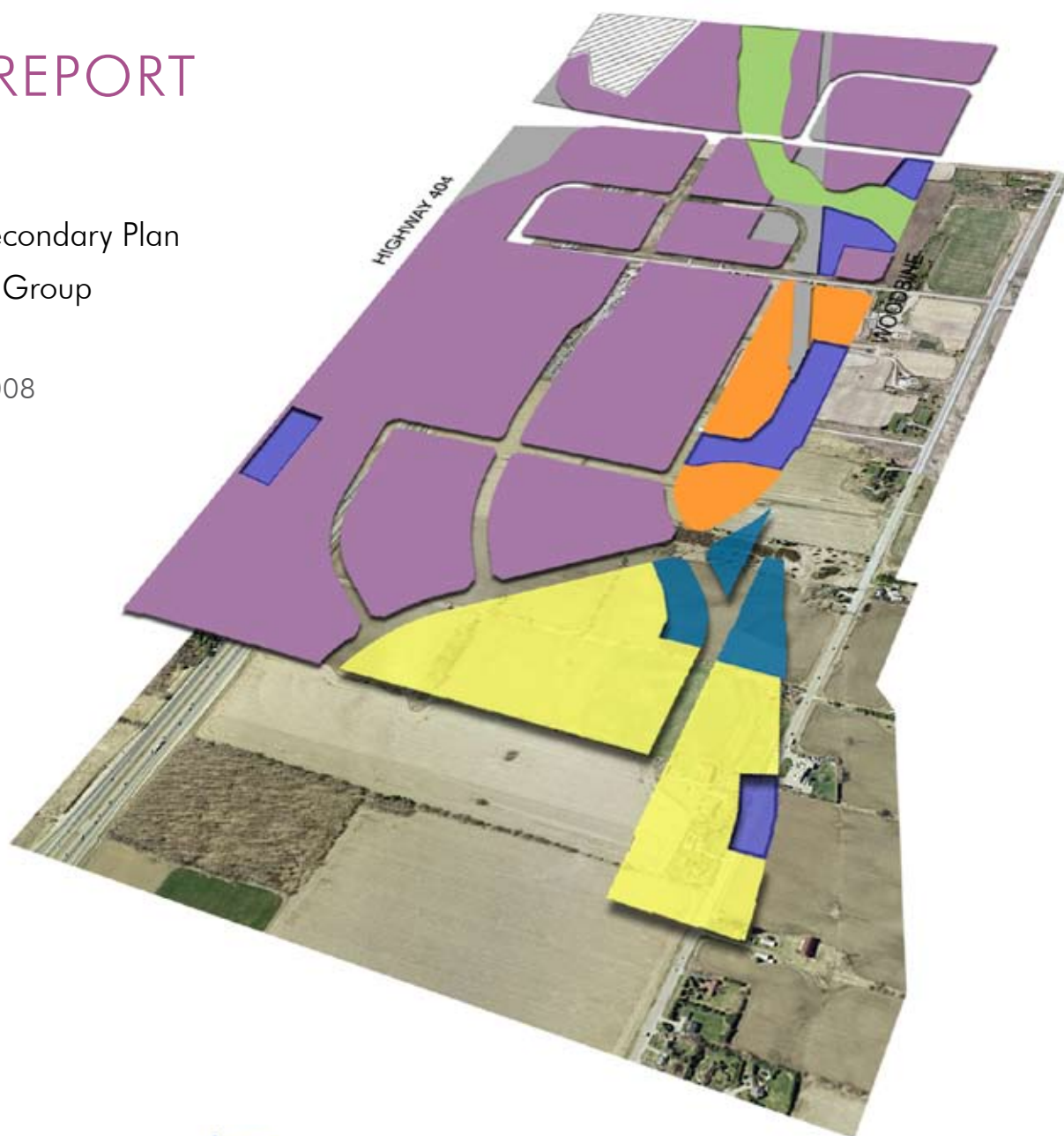


OPEN SPACE AND STREETSCAPE MASTERPLAN

FINAL REPORT

Prepared for
404 North Secondary Plan
Development Group

August 25th, 2008



Todhunter Associates
planning and urban design

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1.0 INTRODUCTION

1.1 Introduction and Outline

In September of 2006, the Region of York approved the *Official Plan and Secondary Plan for the Highway 404 North Planning District, Amendment no.149* (henceforth *OPA 149*) for a section of land in the northwest portion of the Town of Markham. Within this Secondary Plan, the land use of the majority of the lands were designated as “Business Park Area” and “Business Corridor Area”, while the lands located south of the Woodbine By-Pass extension were designated as “Residential”.

Section 9.0 of *OPA 149* (April 11th, 2006) notes that prior to the approval of any implementing development, a Community Design Plan must be developed. The following document fulfills this requirement in part by addressing exclusively the lands designated under “Business Park Area” and “Business Corridor Area”. A separate Community Design Plan is to be prepared specifically for residential lands within the *OPA 149*.

The Highway 404 North Planning District lands are also subject to policies outlined in the *Rouge North Management Plan* (2001), which was developed by the Rouge Alliance and partners to guide the management of Rouge Park lands along the tributaries within York Region. The vision, goal and objectives in the *Rouge North Management Plan* have been taken into consideration in this *Open Space and Streetscape Master Plan*.

In accordance with the Community Design Plan as aforementioned, this document outlines the relevant general policies relating to the Open Space Master Plan and the Streetscape Design Guidelines for the Business Park Area and Business Corridor Area, respectively.

Section 1.0 (Introduction) of this report introduces the Highway 404 North Planning District, and provides a context in relation to the district’s location, environmental significance, and land-use designations within the Town of Markham.

Section 2.0 (Demonstration Plan) indicates the main design principles upon which

this document is based, and provides a design framework for the overall Open Space and Streetscape Master Plan.

Section 3.0 (Open Space Plan) forwards specific guidelines relating to the integration of the natural environment into the Subject Lands.

Section 4.0 (Streetscape Master Plan) forwards specific guidelines relating to the design of streetscape elements according to street hierarchies.

Section 5.0 (Summary and Conclusion) provides a design summary of the Open Space and Streetscape Master Plan.

The **Appendix** contains further resources and tools supplementary to this report.

1.2 Existing Context and Setting

1.2.1 Vision

The Highway 404 North Planning District is envisioned as an attractive business community providing a range of employment opportunities, which coexist in harmony with adjacent residential areas and natural features.

Figure 1.1: Regional Context Plan



As such, this Open Space and Streetscape Master Plan aims to reflect and integrate characteristics from the neighbouring communities in order to achieve consistency in design approach, while protecting environment features through the incorporation of landscape buffers and related requirements.

In summary, recommendations and guidelines in the following sections of this document will reflect the following principles:

i. Protect and Enhance Natural Features

The Open Space and Streetscape Master Plan and related guidelines have been formulated with the protection of the existing natural features in mind, specifically Berczy Creek, existing woodlots and hedgerows within the study boundary.

ii. Respond Sensitively to the Planning Goals and Objectives of Adjacent Planning Districts

The Highway 404 North Planning District borders two distinct districts: the Cathedral Planning District, and the Victoria Square Planning District. This document addresses the existing characteristics and distinctiveness of each of these communities, and seeks to extend relevant design principles into the OPA 149 study area.

iii. Capitalize on the Visibility of Highway 404

With a high volume of traffic along Highway 404, the future building frontages along this expressway serve as an impression of the entire district. As such, this frontage is aesthetically important, and guidelines are forwarded to ensure that this frontage reflects a prestige image suitable for Business Park uses.

1.2.2 Location

The Highway 404 North Planning District No. 42, OPA 149 (hereafter “Subject Lands”) is located in the northwest portion of the Town of Markham. They are described as Part of Lots 27 to 32, Concession 3, and Part of Lots 26 and 27, Concession 4.

The Subject Lands are bounded on the west by Highway 404; on the north by the southern boundary of the Oak Ridges Moraine, and the Markham – Whitchurch-Stouffville municipal boundary; on the east by Woodbine Avenue, and a portion of the Hydro One transmission corridor running east of Woodbine Avenue; and on the south by the northerly limit of Planning District no. 39 (Cathedral Planning District) and the northerly limit of Planning District no. 14 (Victoria Square Planning District).

The Subject Lands may be expanded to include the northwestern most land parcel [discussion pending]. See *Figure 1.3* for the revised boundary modification.

Terraprobe has compiled a study of these lands into a report, which is attached as Appendix 'C' and will be used as part of the process of seeking designation of these lands for development.

1.2.3 Site Characteristics and Surrounding Uses

The Subject Lands are comprised of approximately 181 hectares (447 acres) of primarily flat agricultural lands. However, a relatively small number of residential properties exist along the eastern portion of the Subject Lands, while some industrial and commercial properties exist along the south side of 19th Avenue. Recreational uses such as a golf driving range and a rugby sports field are also within the boundaries of the Subject Lands.

The west tributary of Berczy Creek is a tributary that flows in a southerly direction through a portion of the Subject Lands. The Creek enters from north of the Subject Lands and flows approximately 150m south of 19th Avenue, winding in an easterly direction towards Woodbine Avenue.

Land uses surrounding the Subject Lands include the following:

Rural/agricultural uses to the north, east, and west;

Residential uses to the south and southeast, including the Cathedral Community (currently under development) and the Hamlet of Victoria Square.

1.2.4 Terrestrial and Aquatic Features

The *Background Natural Environment Report*, prepared by Cunningham Environmental Associates (2008), documents and evaluates the existing natural environmental conditions and features within the Subject Lands, which will be considered in the Open Space Plan.

The following summarizes the terrestrial and aquatic environs that are identified in the aforementioned report as *Figure 3 - Existing Terrestrial and Aquatic Features*, which is attached in this document as Appendix C.

Agricultural Cropland (Ag)

Agricultural Cropland identifies land parcels that are comprised of various levels of usage, including hay fields, fruit and vegetable orchards, and fallow fields.

Recreational (Fletcher Field and Woodbine Golf Centre)

This environ identifies the two large land parcels: Fletcher Field, presently used as a rugby/sports field, and Woodbine Golf Centre, a golf driving range.

Residential/Industrial/Commercial Properties

Active uses such as residential, industrial and commercial are primarily dispersed along 19th Avenue and Woodbine Avenue.

Marshes (MAM2-2) (MAS2-1B) (MA3-1B)

Three marsh categories exist within the Subject Lands; these are identified as Reed Canary Grass Mineral Meadow Marsh, and Cattail Mineral Shallow Marsh. Reed Canary Grass is the dominant species primarily located along the edge of the west tributary of Berczy Creek, while small clusters of cattail vegetation exist along swales, roadsides and a pond. Willow tree species, and various other trees and shrubs are dispersed intermittently through the Subject Lands.

Mixed Conifer Coniferous Plantation (CUP3-H)

This type of vegetation is more commonly found near residential properties. Various spruce and cedar tree species are located in the vicinity of, or located on existing residential properties.

Norway Spruce Coniferous Plantation (CUP3-E)

This unit is comprised of spruce and Scotch pine tree species.

Dry-Moist Old Field Meadow Type (CUM1-1)

Weeds and various grasses are found intermittently throughout various parcels in this unit.

Cultural Fenceline-Hedgerow (CUF1-A)

This unit is comprised of narrow strips of deciduous hedgerows that separate parcels of agricultural lands. Sugar maple, white ash, Manitoba maple, basswood and black cherry are the prevalent woody species.

Dry Fresh Sugar Maple-Ironwood Deciduous Forest (FOD5-4)

This unit consists of a small grove of upland hardwoods (dominant species include sugar maple and ironwood). Other woody associates include white pine, white elm, black cherry, common buckthorn and choke cherry). The grove is more or less contiguous with deciduous treed hedgerows that extend to the north in an east-west and north-south direction and connect with a exotic cultural woodland unit.

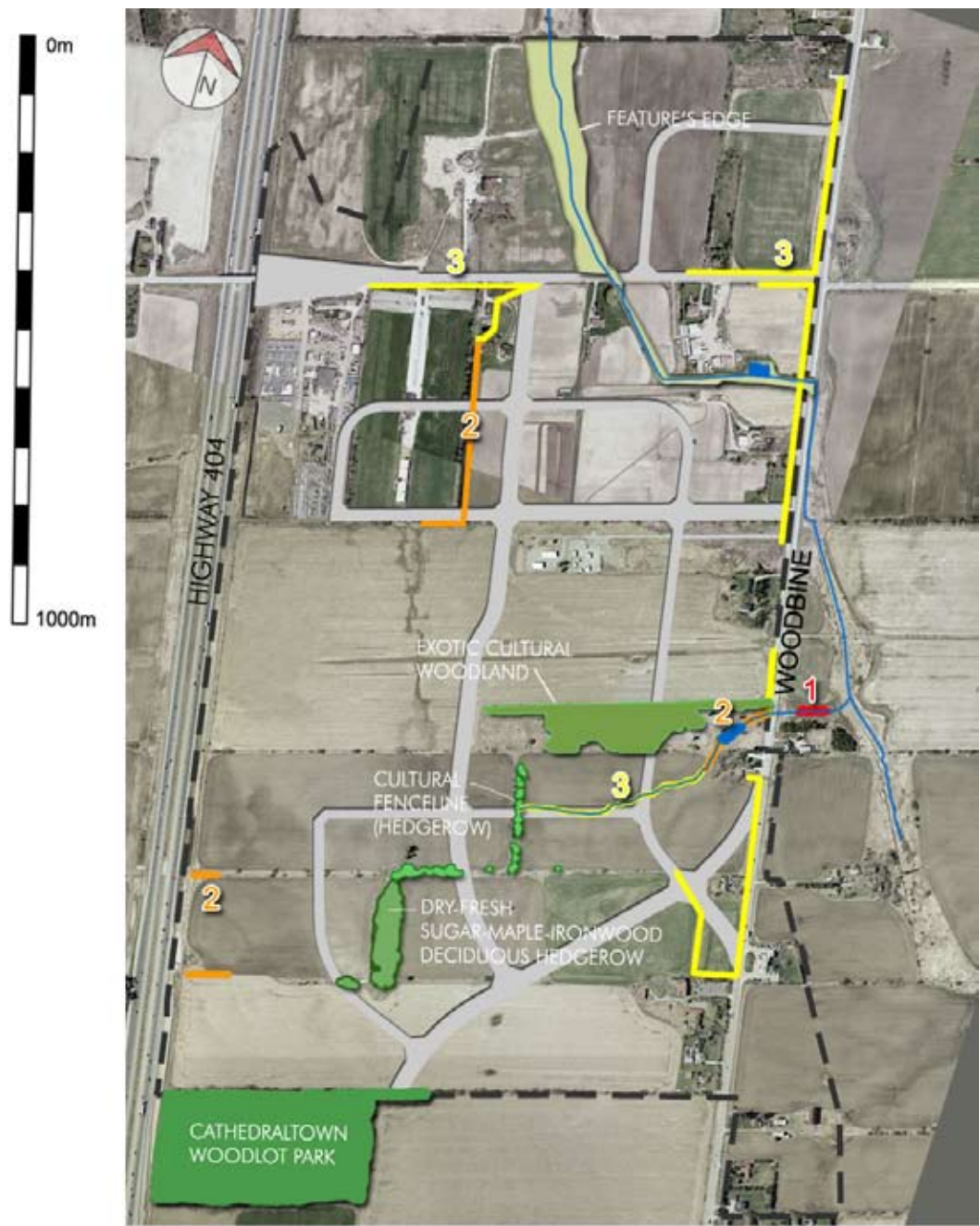


Figure 1.2: Natural Features

LEGEND

- | | |
|--|--|
|  WEST TRIBUTARY OF BERCZY CREEK |  CLASS 1 SMALL STREAM FEATURE |
|  HEDGEROWS |  CLASS 2 SMALL STREAM FEATURE |
|  EXISTING WOODLOT |  CLASS 3 SMALL STREAM FEATURE |
| |  PROJECT BOUNDARY |

Exotic Cultural Woodland (CUW1-B)

This unit contains a population of introduced non-native and native tree species. Included within this unit are little-leaf linden, silver poplar, scotch pine, hoopsii blue spruce, Manitoba maple, white elm, white ash, and basswood.

Duckweed Mixed Shallow Aquatic (SAM1-2)

This unit is comprised of an on-line pond utilized for irrigation purposes.

Aquatic Environs and Fish Habitat

The west tributary of Berczy Creek and two on-line ponds are identified as aquatic environs. It was noted in the *Background Natural Environment Report* that in 2007, there was no water flow or standing water located within the tributary or culverts, and no fish were observed within either pond.

1.2.5 Natural Features

Figure 1.2 - Natural Features identifies potential natural features which should be considered to be retained or compensated for in the Open Space Master Plan in Section 3.0. These natural features are outlined below.

Berczy Creek

The west tributary of Berczy Creek natural feature's edge is indicated. These features will be protected with appropriate buffers in accordance with watercourse protection policies of the *Rouge North Management Plan* (RNMP). This feature's edge is subject to change pending additional analysis and staking in situ with Toronto and Region Conservation Authority (TRCA), after which the appropriate boundary delineation criteria as per the RNMP will be applied.

Class 1-2-3 Small Stream Features

While many of these features will be lost with development of the Business Park, the current form of the Class 2 features may be altered, provided that their functions are enhanced.

Existing Woodlot

A ten (10) metre buffer from the woodlot's northern tree drip line in conjunction with appropriate grading is recommended in the Environmental Management Study; alternatively, these may be determined through an Environmental Impact Study (EIS).

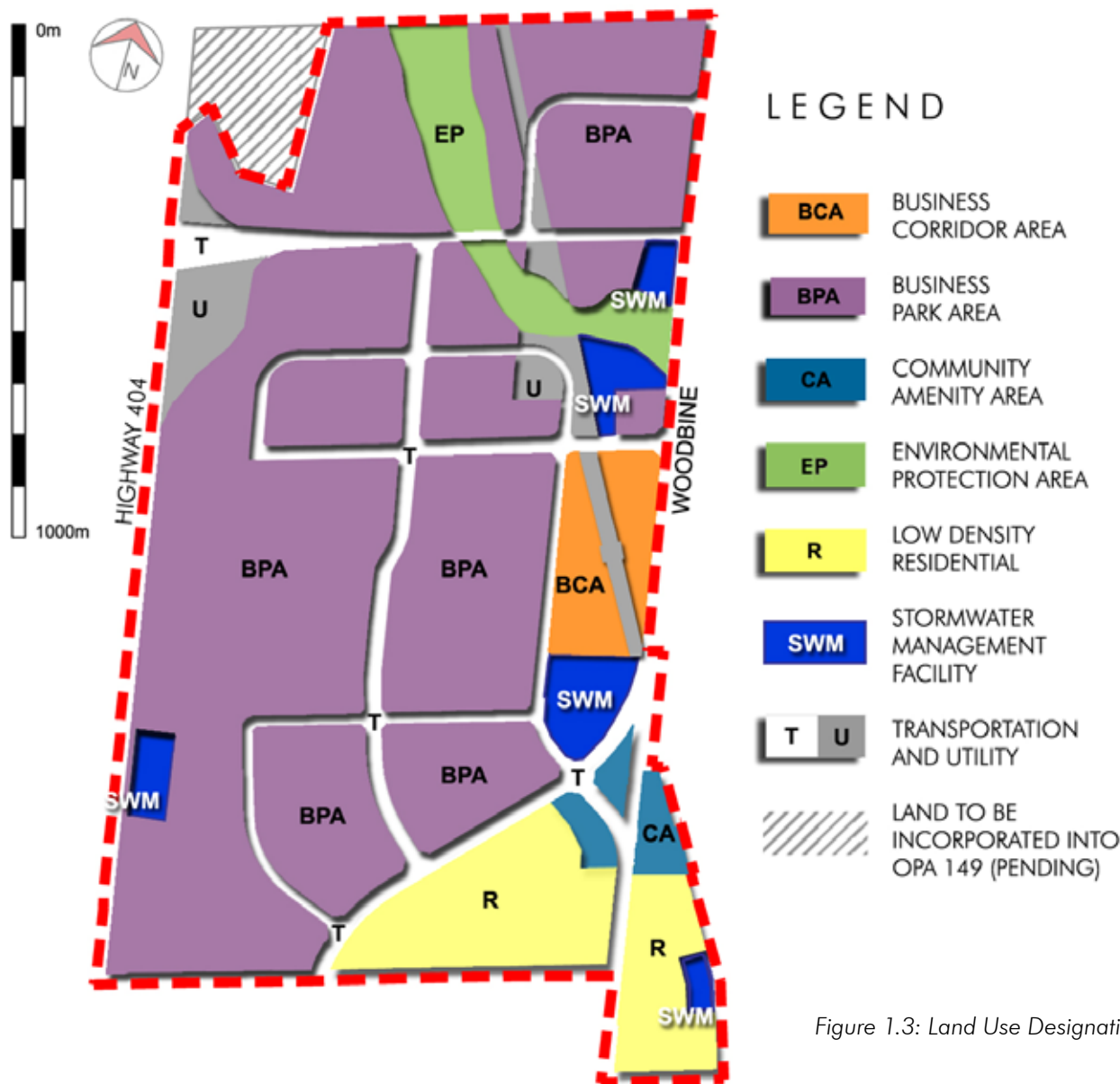


Figure 1.3: Land Use Designations

Urban Residential (Low Density)	Community Amenity Area	Business Park Area	Business Corridor Area	EP Lands	SWM Ponds	Transportation & Utilities	Regional Roads	Local Roads
16,338	2,727	110,439	5,991	8,895	7,859	7,409	4,395	13,636

Table 1.3: 404 North Secondary Plan Area (ha) Breakdown by Land Use Designations

Hedgerows

There are a number of hedgerows which have the potential of being retained primarily for aesthetic and cultural interest. In particular, the hedgerow identified as FOD5-4 and CUH1-A will need to be reviewed at a future time in greater detail once detailed engineering, environmental and planning studies advance further in the planning process. Depending upon municipal servicing constraints and grading of the lands, these hedgerows may need to be removed in order to service the developable lands more effectively. These hedgerows are identified in *Figure 1.2*.

1.3 Land Use Designations

1.3.1 Introduction

In developing the Open Space and Streetscape Master Plan, two specific Land Use Designations within the Industrial designation are examined in this document:

- 1) Business Park Area; and
- 2) Business Corridor Area.

Figure 1.3 depicts the land use designations within the Project Areas. See also *Table 1.3* for the total area and percentage of each land use segment.

For each land use designation, the development context is set by the following relevant sections of the Town of Markham Official Plan.

1.3.2 Business Park

This designation is subject to provisions of Section 3.5.6.2 of the Official Plan, and Section 5.2.5 of the Secondary Plan.

a) Planned Function

The Business Park Area category applies to office/industrial business parks characterized by development displaying high design standards, including corporate head offices and research facilities. The visual attractiveness and consistent image of such areas is of prime importance. Retail and service commercial activities will be strictly controlled.

b) Location

Business Park Areas comprised of:

- i) Areas which exhibit a clear business park image with extensive landscaping, high quality building design and comprehensive area planning;
- ii) Generally, lands having exposure to Provincial highways or major arterial roads.

c) Permitted Land Uses

i) Land uses designated Industrial (Business Park Area) may be zoned to permit the following land uses, subject to the provisions of this Plan and any implementing Secondary Plan:

- offices;
- light industrial uses consistent with the planned function and policies of the category of designation;
- accessory and incidental retail uses to permitted light industrial uses;
- hotels;
- ancillary retail and service uses and restaurants, where internally integrated as a component of an office building and clearly intended for the convenience use of local businesses and employees; ancillary retail and service uses and restaurants where internally integrated as a component of a hotel, as customarily provided to cater to the needs of hotel patrons;
- research and training facilities;
- data processing and related facilities;
- institutional uses including government services compatible with and complementary to the planned function and policies of the category of designation, but not including places of worship;
- day care centres;
- banks and financial institutions;
- trade and convention centres;
- other similar uses consistent with the planned function and policies of the Business Park Area category.

ii) Lands designated Industrial (Business Park Area) may be approved to also permit the following uses, subject to the review of a specific development proposal and reasoning, pursuant to the provisions of this Plan and any implementing Secondary Plan:

- private and commercial schools;

- community facilities;
- motels;
- sports, health and fitness recreational uses;
- banquet halls;
- entertainment uses and night clubs, where internally integrated as a component of an office building or hotel.

iii) Notwithstanding the provisions Section 3.5.4.3 of the Official Plan, transportation terminals shall not be permitted on lands designated “Business Park Area” within the Planning District.

d) Development Requirements

i) Siting, massing, scale and extensive, complementary landscaping shall contribute to a visually attractive streetscape.

ii) Pedestrian accessibility, convenience, safety and provision of amenity areas shall be a primary consideration in development and redevelopment.

iii) Large surface parking areas should not be highly visible from public streets.

Refer to Figure 1.3 for lands designated as Business Park Area.

1.3.3 Business Corridor Area

This designation is subject to provisions of Section 3.5.6.3 of the Official Plan, and Section 5.2.3 of the Secondary Plan.

a) Planned Function

The Business Corridor category identifies locations for a mix of high-quality business activities primarily in corridors along major road frontages, adjacent to industrial areas. Business Corridor Areas are intended for industrial and office uses that require the exposure offered by such locations, in order to accommodate the business and service needs of the nearby companies and employees they serve. Retail uses are not intended to accommodate the needs of the general public as their primary function. A high level of urban design is required.

b) Location

Business Corridor Areas generally will be applied to locations along major roads within, or at the periphery of, industrial areas.

c) Land Uses

i) Land designated Industrial (Business Corridor Area) may be zoned to permit

the following uses, subject to the provisions of this Plan and any implementing Secondary Plan:

- offices;
- light industrial uses;
- banks and financial institutions;
- hotels and motels;
- trade and convention centres;
- ancillary retail uses where internally integrated as a component of an office building or hotel;
- service uses consistent with the planned function and policies of the category of designation;
- accessory and incidental retail uses associated with permitted light industrial uses;
- sports, health and fitness recreational uses;
- day care centres;
- restaurants, where integrated with other uses as a component of a larger building;
- research and training centres;
- data processing and related facilities;
- commercial schools;
- other similar uses consistent with the planned function and policies of the category of designation.

ii) Lands designated Industrial (Business Corridor Area) may be approved to also permit the following uses, if demonstrated to be consistent with the planned function, subject to the review of a specific development proposal and rezoning, pursuant to the provisions of this Plan and any implementing Secondary Plan:

- a mixed-use centre combining multiple unit retail redevelopment containing individual retail premises of less than 300 square metres gross floor area with other permitted uses, subject to all of the following:
 - the centre shall generally be a multi-storey building;
 - the centre shall generally be located on a site adjoining an intersection with an arterial or collector road;
 - the total gross floor area devoted to retail uses shall generally not exceed the total gross floor area devoted to other permitted uses.
 - retail uses, subject to section 3.5.6.3c) iii);
 - entertainment uses;
 - institutional uses including government services;
 - private schools;
 - nightclubs;

- banquet halls;
- automobile services stations;
- car washes;
- free standing restaurants;
- funeral homes;
- places of worship, subject to the provisions of Section 2.17.

iii) Retail uses permitted within Industrial (Business Corridor Area) shall be limited to individual premises having generally not less than 300 square metres of gross floor area and having not more than 1000 square metres of gross floor area with the exception of computer and office supply stores which may be up to a maximum of 3000 square metres gross floor area.

iv) The following uses shall be prohibited on lands designated Industrial (Business Corridor Area):

- autobody paint and repair;
- automobile repair uses;
- commercial “self-storage” warehouses;
- retail and industrial uses involving accessory outdoor storage and/or display of merchandise.

Notwithstanding the provisions of Sections 3.5.4.3 and 3.5.6.3 c) of the Official Plan, and Sections 5.2.3 a) and b) of the Secondary Plan, the following uses shall not be permitted on lands designated Industrial (Business Corridor Area):

- transportation terminals, excluding transit loops or transit transfer stations;
- entertainment uses;
- nightclubs; and
- funeral homes.

Refer to *Figure 1.3* for lands designated as Business Corridor.

d) Development Requirements

i) Siting, massing and scale of built form elements, and the complementary landscaping shall contribute to the development of a streetscape that projects an image of a quality business environment.

ii) Development and redevelopment on lands fronting onto or adjoining major arterial roads shall generally consist of multi-storey buildings located in close proximity to the property line adjoining the public street.

iii) Pedestrian accessibility, convenience and safety shall be a primary consideration in development and redevelopment.

- iv) Large surface parking areas should not be highly visible from public streets.

1.3.4 Environmental Protection Area

This designation is subject to provisions of Section 2.2.2 of the Official Plan, and Section 5.6 of the Secondary Plan.

Refer to *Figure 1.3* for lands designated as Environmental Protection Area.

a) Valley lands

This designation is subject to provisions of Section 2.2.2.4.2 of the Official Plan, and Section 5.6.5 of the Secondary Plan.

b) Hazard Lands

This designation is subject to provisions of Section 2.2.2 and 3.10 of the Official Plan, and Section 5.6.4 of the Secondary Plan.

c) Rouge Park North Policies

As the West Berczy Creek is a tributary of the Rouge River, certain lands within the OPA 149 area are identified within the area outlined in the *Rouge North Management Plan* (2001). This plan requires that the boundaries of the future Rouge Park North be established through the Environmental Management Study, prior to development. This shall be in consultation with TRCA and in accordance with the criteria identified in the *Rouge North Implementation Manual* (2001).

The Town of Markham has adopted Official Plan Amendment 140 to incorporate the provisions of the Rouge North Management Plan into its Official Plan. At this time, OPA 140 is under appeal; until the appeal is resolved, the defining elements and buffer requirements in the *Rouge North Management Plan* and *Implementation Manuals* are not finalized. Therefore, at this time the provisions of the RNMP and Implementation Manual criteria are being used as a guideline to delineate the park boundary (limit of development) within the EMS.

1.3.5 Transportation and Utilities

This designation is subject to provisions of Section 3.13 of the Official Plan, and Section 5.5 of the Secondary Plan. The provisions are as follows:

- a) all lands comprising part of the Highway 404 right-of-way and associated interchanges;
- b) all lands comprising the right-of-way of the Hydro One transmission corridor;

and

c) all lands associated with the proposed Major Collector Road overpass of Highway 404. The location and configuration of this designation may be adjusted following other Environmental Assessment process.

Refer to *Figure 1.3* for lands designated as Transportation and Utilities.

1.3.6 Urban Residential – Low Density

This designation is subject to provisions of Section 3.3.2 of the Official Plan, and Section 5.4.2 and 5.4.3 of the Secondary Plan. The Community Design Plan requirements for this designation will be addressed through an addendum to the Cathedral Community Design Plan.

1.3.7 Commercial – Community Amenity Area

This designation is subject to provisions of Section 3.4 and 3.4.6.2 of the Official Plan, and Section 5.3.2 of the Secondary Plan.

1.4 Zoning Requirements

The majority of the lands within OPA 149 (west of Woodbine) are zoned Agricultural (A1), Rural Residential (RRH and RR4) and Commercial Recreation (CR) by By-law 304-87, as amended. The Honda site is subject to site specific By-law 2007-156, in parent By-law 177-96, as amended. The lands east of Woodbine Avenue are zoned Rural Residential (RRH and RR1) and Open Space (O2), by by-law 83-73, as amended. As applications for development on lands within OPA 149 are brought forward, they will also be incorporated into By-law 177-96, the Town of Markham's latest urban area by-law.

1.5 Cathedral Community Secondary Plan

1.5.1 Background

The Cathedral Community, located immediately south of the Subject Lands, is part of a Secondary Plan Area that has developed objectives for its Business Park lands.

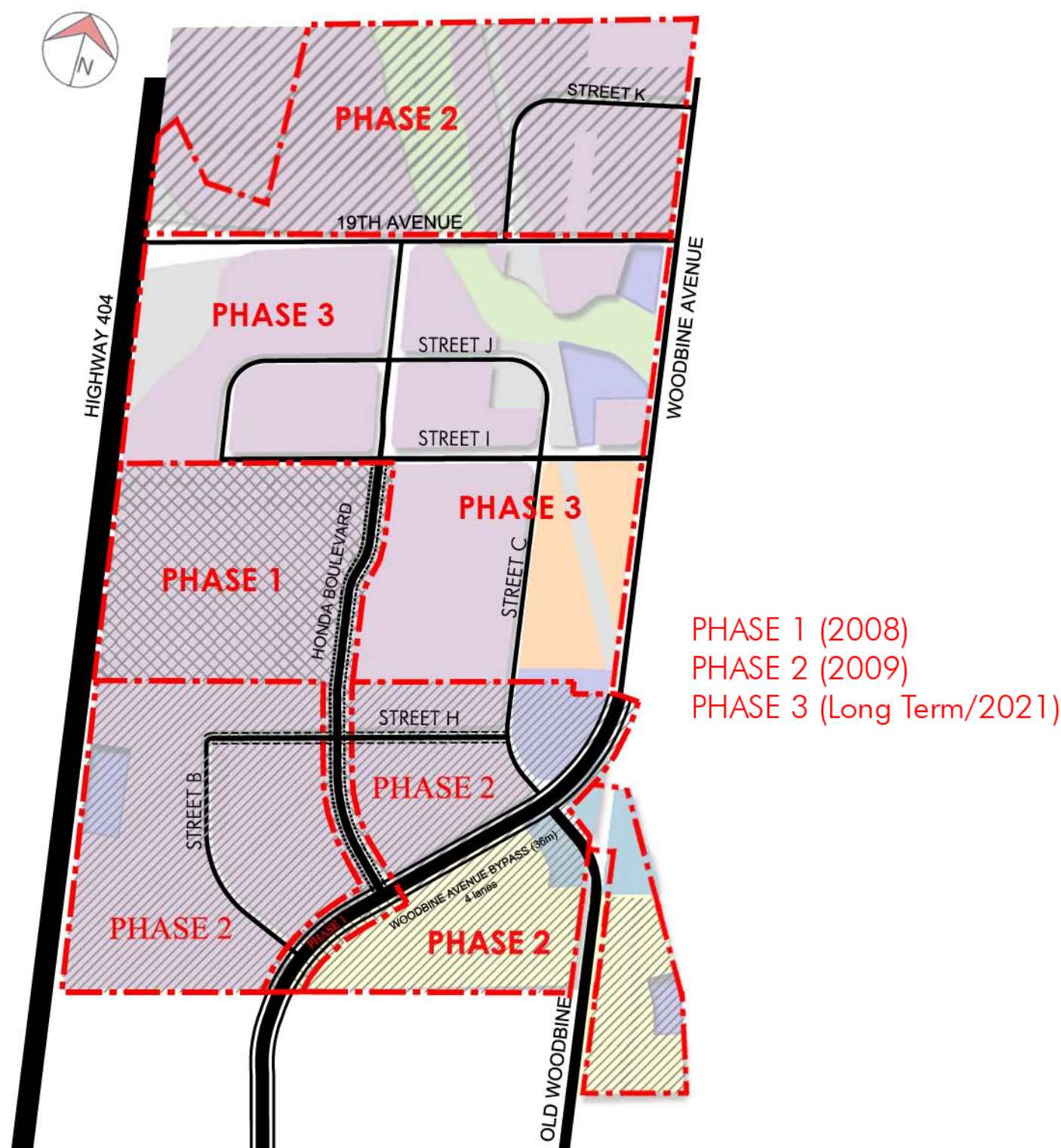


Figure 1.4: Proposed Road Network And Phasing

As the Community is directly adjacent to the Highway 404 North Planning District, consideration must be given to integrate objectives of the *Cathedral Community Secondary Plan* with this Open Space Master Plan and Streetscape Study. This approach is encouraged by Town of Markham planning staff.

To build upon the coordination of streetscape objectives and to create a consistent streetscape design plan, relevant urban design guidelines from the Secondary Plan for the Business Park component should extend north into OPA 149. As this report exclusively addresses Business Park land uses within the OPA, relevant guidelines for other land use areas such as Residential are to be addressed in subsequent studies.

Specifically, the guidelines outlined in the following sections are taken from *Section 3.7: Business Park* of the *Cathedral Community Secondary Plan*, and appropriate guidelines are incorporated into the urban design guidelines for OPA 149.

1.5.2 Woodbine Bypass

- Yards that are adjacent to the Woodbine Bypass shall include a building wall within the build-within zone, for a minimum of 50% of the linear distance of the lot line.
- The principal elevation of buildings with frontages along the Woodbine Bypass should be oriented to face the Bypass. Design elements that include enhanced architectural features, enhanced entrance areas, and pedestrian-scale architectural features are preferred.
- Buildings situated at the corners of streets that abut the Woodbine Bypass should be treated as a landmark of high visual importance, and incorporate a balance of hard and soft landscape elements to enhance the space as a focal point. These elements may include walls, planters, fountains, sculptures, seating, decorative lighting, decorative paving and soft landscaping.
- Employee parking areas for businesses located along the Woodbine Bypass are discouraged. Single-loaded visitor parking may be located; however, these parking spaces are to be limited, and are to be screened by a continuous landscape buffer.

1.5.3 Other elements

- Corners or intersections within the Business Park are considered to be 'high visibility' or 'focal locations'. Taller buildings or buildings with prominent architectural features should be located in these areas.
- Signage, lighting, landscaping, and traffic calming elements should demarcate entrances to parking areas, and service areas.
- With respect to the Cathedral Woods woodlot, the Cathedral Community Secondary Plan also encourages the retention of the significant woodlot of which major portions are owned by the municipality.

- Designated landmarks within the Business Park should incorporate focal architectural elements, along with enhanced landscaping in order to enhance the visual appeal of these areas.

1.6 Proposed Road Network and Project Phasing

1.6.1 Phasing Timeline

Figure 1.4 - *Proposed Road Network and Project Phasing* illustrates the current (2007) road network as envisioned in the project area. Three (3) interim build out phases are suggested:

Phase 1, currently under construction with a anticipated completion date of 2008;

Phase 2, estimated to be built out by 2009; and

Phase 3, is projected to be built out by 2021.

The following summarizes the roadway network and characteristics as prepared by iTRANS Consulting Inc. (*OPA 149 Traffic Impact Assessment Study, November 2007*) which will shape the streetscape plan.

1.6.2 Phase 1 - Road Network

Elgin Mills Road and the Woodbine Bypass will be the primary access roads that service the OPA 149 Lands during the initial build out phase. Woodbine Bypass is a major arterial road, and is designed as a 4 lane roadway within a 36m right-of-way (38m at intersections) right-of-way. Elgin Mills Road may also be widened from two lanes to four lanes west of the Bypass. Development to occur within Phase 1 will encompass primarily the southern portion of the overall Planning District, and include construction of Honda Boulevard to the Honda site. The proposed Woodbine Bypass will service Phase 1 development.

1.6.3 Phase 2 - Road Network

As part of Phase 2 (to 2009), the road network concept plan for OPA 149 includes:

Woodbine Avenue

- Completion of the Woodbine Bypass to connect with existing Woodbine Avenue north

19th Avenue

- Reconstruction of 19th Avenue to 2 lanes from east of Highway 404 to Woodbine Avenue

OPA 149 Road Network

- Street 'B' - north south industrial collector road with a basic two-lane cross section extending northerly from Woodbine Bypass
- Street 'C' - north-south industrial collector road with a basic two-lane cross section
- Street 'H' - two-lane east-west industrial collector road
- Street 'K' - will be a two-lane industrial collector road connecting Woodbine Avenue to 19th Avenue

Woodbine Bypass / Honda Boulevard

- Exclusive left turn and right turn lanes on Woodbine Bypass in the eastbound and in the westbound directions (assuming Woodbine Bypass runs east-west)
- Exclusive left turn and right turn lanes on Honda Boulevard in the southbound direction

Woodbine Bypass / Street C

- Exclusive left turn lanes and Street 'C' in the northbound and southbound directions

Street C / Street H

- Exclusive northbound left turn lane on Street C

Woodbine Avenue / Street K

- Exclusive northbound left turn lane and southbound right turn lane on Woodbine Avenue

19th Avenue / Street K

- Exclusive eastbound left turn lane and westbound right turn lane on 19th Avenue

1.6.4 Phase 3 - Road Network

Phase 3 road network concept plan (long term) includes:

Highway 404 / 19th Avenue Interchange

- New interchange (subject to EA review)

Woodbine Avenue (Road Widening)

- Widening from two lanes, from south of 19th Avenue to north of 19th Avenue

Elgin Mills Road (Road Widening)

Major McKenzie Drive (Road Widening)

OPA 149 Road Network (Road Network Improvement)

- Honda Boulevard - extending Honda Boulevard from the northerly terminus to 19th Avenue
- Street 'C' - extending Street 'C' from the northerly terminus to Street 'I'
- Street 'I' - a two-lane east-west industrial collector road
- Street 'J' - new two lanes ring-road

Woodbine Avenue / Street I

- Exclusive northbound left turn lane and southbound right turn lane on Woodbine Avenue

19th Avenue / Honda Boulevard

- Exclusive westbound left turn and eastbound right turn lanes on 19th Avenue

Honda Boulevard

- Exclusive northbound and southbound left turn lanes on Honda Boulevard

1.7 Master Plan Organization

The Demonstration Plan, Open Space Plan, and the Streetscape Master Plan in the following sections serve as the basis of this Business Park Community Design Plan. These plans are summarized as follows.

The Demonstration Plan provides an overview of the key planning parameters, which directs the urban design for the Business Park within the Subject Lands.

The Open Space Plan undertakes an assessment of existing natural heritage features with respect to the future road network and the public right-of-ways, incorporates confirmed business park development proposals, and identifies design opportunities with respect to the open space network. The nature and type of the open spaces associated with the west tributary of Berczy Creek corridor, as well as the Cathedral Woods woodlot, significant hedgerows, and the Activity Corridor (as identified on *Appendix Map 1 - Greenway System OPA149*) are also incorporated into the Open Space Master Plan.

The Streetscape Master Plan is intended to ensure that the treatment of future employment buildings and the rights-of-way of public streets is consistent in quality and design throughout the Planning District. This section provides guidelines that address streetscape design requirements as outlined in the Secondary Plan, including the determination of appropriate and consistent treatments for primary and secondary streets, as well as requirements for the provision of a continuous pedestrian network, including linkages to existing and proposed trail networks. Streetscape design elements, including street furniture, lighting, sidewalks, trails and street tree planting, are discussed in this section.

2.0 DEMONSTRATION PLAN

2.1 Priority Areas Overview

The Business Park Area (BPA) and Business Corridor Area (BCA) of OPA 149 will constitute important impressions of the Town Markham from Highway 404 and the future Woodbine Bypass; as such, careful consideration should be given to the urban design of these areas.

Generally, areas within the BPA and BCA can be designated into seven Priority Area categories: Highway 404 Frontage, Woodbine By-Pass Frontage, Gateways, Gateway Frontage, Corner Frontage, End View Frontage and Open Space Interface Treatment.

All seven categories of Priority Areas are blocks of high visibility, which are key in maintaining the image of the Business Park, from both external vantage points and sight lines as viewed through the internal road network.

During the site plan evaluation process, special consideration will be given to Priority Areas for their urban design components, including massing, materials and landscaping. These Priority Areas are illustrated in *Figure 2.1*, and their respective urban design guidelines are outlined in the following sections.

2.2 Highway 404 Frontage

Highway 404 is a major transportation corridor; consequently, buildings that front onto this highway will be exposed to thousands of visitors on a daily basis. Therefore, maintaining an aesthetically pleasing view of the Business Park from Highway 404 is an important consideration.

The following outlines general urban design factors for the Highway 404 Frontage Priority Area. In addition, careful site planning with respect to retaining views of the Cathedraltown Woodlot Park is also identified in *Section 2.7*.

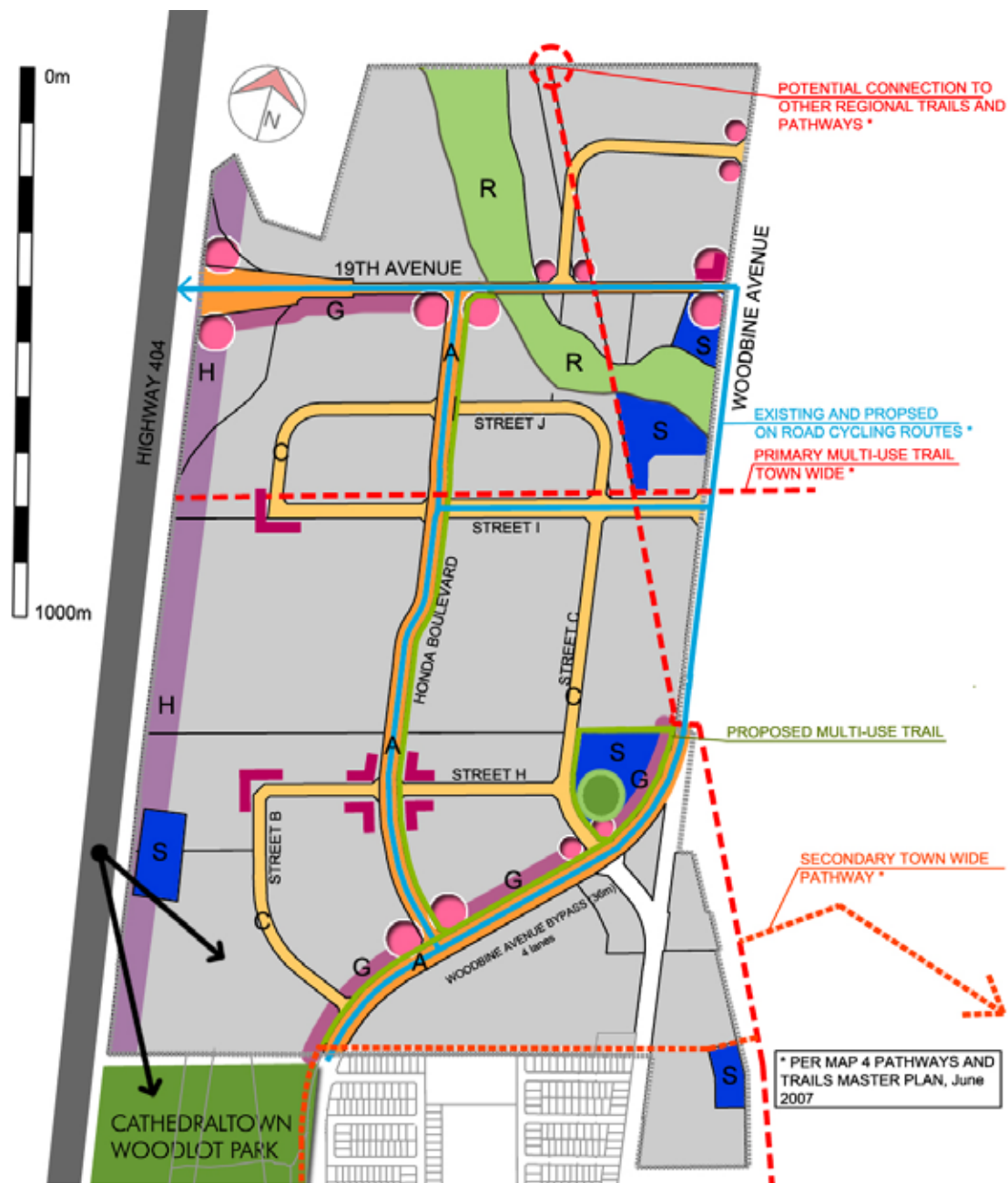


Figure 2.1: Demonstration Plan

LEGEND

A	ARTERIAL ROAD	G	GATEWAY FRONTAGE
C	COLLECTOR ROAD	L	CORNER AND END VIEW FRONTAGE
	PRIMARY GATEWAY TREATMENT	R	OPEN SPACE INTERFACE
	SECONDARY GATEWAY TREATMENT		OPEN SPACE FEATURE
H	HIGHWAY 404 FRONTAGE	S	SWM FACILITY
	MULTI-USE TRAIL		KEY VISTA

2.2.1 Site Layout

- Formal building entranceways will be oriented to face the local road network to provide site access and identity. However, the rear of a building that faces Highway 404 must also contain architectural merit to add interest, and present a “Corporate” presence to the Highway.
- In order to maintain continuity in the landscape, buildings should be sited to ensure that the frontage is oriented in a similar direction to adjacent building frontages.

2.2.2 Architectural Requirements

- Both front and rear elevations of buildings located along the Highway 404 frontage will be considered to be architecturally significant and subjected to higher standards of design.
- Building frontage should incorporate the use of landscaping to frame building frontages and demarcate entrances.
- Side or rear elevations, while not acting as building entries, are to be articulated (such as through the incorporation of signage and glazing) so to demarcate individual distinctive corporate name and image.
- Windows facing the street frontage should occupy a minimum of 30% or more of the street elevation between the ceiling and floor at grade.
- The minimum lot frontage of buildings along Highway 404 is 30 metres.

2.2.3 Landscape Requirements

- Enhanced landscaping along Highway 404 is required, with 50% of the plant material planted along the rear lot line to create a continuous buffer that will enhance the visual presentation of the buildings. This requirement is pending Ministry of Transportation guidelines with respect to their 14m buffer.
- A 1.2 metre high black vinyl fence along Highway 404 is recommended for consistency in fencing along this important frontage.
- Parking areas should be located to the side or rear of building lots. Parking lot entries should be visually enhanced through the use of landscaping.
- Loading and service areas should be located along interior lot lines.
- Between all parking areas and the street line, screening in forms of planting strips should be provided. Plant materials in these areas may consist of a combination of grass or other ground-cover, low shrubs, or deciduous trees.

2.3 Woodbine Bypass

Given its proximity to the Cathedral Community, the treatment of the Woodbine Avenue Bypass is similar in its urban design and streetscape treatment as developed in the *Cathedral Community Secondary Plan*. Accordingly, key urban design principles from this document (pending engineering/development conditions of OPA 149 lands) will be extended into the business park, as follows.

- For all yards adjacent the Woodbine Bypass, a minimum of 50% of the linear distance of the lot line shall include the building wall within the build-within zone.
- Buildings which front onto the Woodbine Bypass should be oriented so that principal building elevations face onto the Bypass. Principal building elevations include enhanced architectural elements and entrance features, as well as canopy structures and arcades.
- Along the Bypass, employee parking areas are discouraged. Limited single-loaded visitor parking may be located, but must be screened by a landscape buffer. This landscape buffer may also be supplemented by planters, low walls or decorative fencing.

2.4 Gateways

Refer to Section 2.5 for frontage design guidelines at Gateway locations.

Traditional Business Park signs are not recommended for all gateway treatments within the OPA lands. Rather, enhanced landscaping, along with the design guidelines for Major and Minor Gateway Features outlined in Section 4.4.3 and 4.4.4, are to be utilized.

2.4.1 Primary Gateways

The function of a Primary Gateway is to serve as a prominent landmark that highlights a major entranceway into the Business Park. There are eight (8) Primary Gateways in the Business Park, as illustrated in *Figure 2.1*.

The intersections at the Woodbine Bypass, 19th Avenue and Honda Boulevard will provide the primary access route into the OPA 149 Business Park lands; hence, Primary Gateways are proposed at these locations. Over the long term period, Primary Gateways are also proposed for 19th Avenue at Highway 404 as well as at Woodbine Avenue.

2.4.2 Secondary Gateways ●

There are four (4) Secondary Gateways located at intersections which lead into the collector road network in the Business Park, as illustrated in Figure 2.1.

The Secondary Gateway will provide an aesthetically interesting entranceway into the Business Park lands.

2.5 Frontages

2.5.1 Frontage articulation guidelines

The design of buildings at Gateway, Corner and End View Frontages should be articulated, and adhere to the following design guidelines.

- Entry areas facing the primary streets should be clearly defined. Entries should incorporate architectural features that reflect a higher standard of uses, with elements such as wide glazed doors, change in material, signage, canopies, and/or porticos.
- Buildings should have a minimum height of 6 metres, so as to maintain the appearance of a two-storey high building.
- On single building façades, the use of two interchanging material and colour schemes is preferred over the utilization of a monolithic colour and material. The primary colour and material on the building should be accented with complementary colours for the clarity and variety of architectural design.
- Glazing is encouraged at all street façades.
- Expansive building façades should be subdivided through a combination of windows, projections and recessions in the building wall, as well as softened through the use of landscaping in the form of clustered trees or shrubs.
- The design treatment of side façades should be equal to that of the exterior side and exterior front façades.

2.5.2 Gateway Frontages ■ G

Gateway Frontages are areas framing critical sides of primary streets within the Business Park, and major collector roads. The structures on these frontages should have significant architectural treatments, and be of the best quality in the Business Park.

Buildings located within Gateway Frontages should be anchored at the corner, and address views from both street angles through the incorporation of distinctive

architectural features. The orientation of these features to building corners at entry points is strongly encouraged.

2.5.3 Corner and End View Frontages

Corner Frontages are areas which are located on all corners of the internal roads. These areas should have the same architectural orientation as Gateway Frontages, but may be less sensitive in architectural quality. Consideration will be given to the exposed exterior side walls visible from the street to ensure that they provide architectural interest. In addition, corner sites have two “front” yards; as such, more emphasis on the front and side façade improvements and landscape enhancements is encouraged.

End View Frontages occur where a T-junction or a curve in the street direct sight lines from the street onto a specific lot face. As such, end view frontages should contain architectural interest to emphasize the termination of the vista as viewed from the intersecting street.

2.6 Open Space Treatments

This section provides guidelines related to the urban design of site plans fronting onto open space blocks and stormwater management facilities. Refer to *Section 3.0* for an in-depth discussion of these features within the Open Space Plan.

2.6.1 Open Space Interface

Open Space Interface areas include sites that are adjacent stormwater management facilities, as well as areas identified within the RNMP.

At this time, OPA 140, which would implement the provisions of the RNMP, is under appeal at the OMB. See *Section 1.3.4* for further discussions regarding this pending approval. Should the approval be granted, the development of lands adjacent to the lands identified as Environmental Protection Area on *Figure 1.3* shall have regard for the *Urban Interface and Infrastructure Guidelines* contained within the RNMP.

For all Open Space Interface areas, provision of natural buffers, enhanced landscaping and the integration of streetscape features such as sidewalks are expected, and should adhere to the following guidelines.

- Plant material chosen for landscape buffers should be maintained to block views at a

minimum height of 2 metres above grade.

- The use of landscaping as buffers is preferred over the use of fencing. If used, fencing should be combined with landscaping to soften the appearance.
- When planting near wetland conservation and open space locations, species should be carefully selected to protect the environmental integrity of these areas.
- Selected species should be native, and not invasive through seed dispersal.
- Site lighting should be located to minimize light pollution into the open space environment.

2.6.2 Multi-Use Trail

A multi-use trail, located within the public right-of-way, is proposed as illustrated in Figure 2.1. Within site plan application blocks, connections to the hydro corridor should be enhanced wherever possible through the use of planting and links to the multi-use trail. See also Section 3.4 for further discussions of the multi-use trail.

2.6.3 Stormwater Management Facilities

Stormwater Management (SWM) Facilities are interspersed throughout the Business Park, and should be treated as aesthetically desirable vistas. Wherever possible, framed views looking into SWM facilities should be encouraged through the use of building mass/orientation and landscaping.

Entries to stormwater maintenance roads are to be designed to signify informal hiking opportunities for Business Park users.

2.6.4 Open Space Feature

An Open Space Feature is proposed in the Demonstration Plan. This area is next to a significant SWM facility, which interface the adjacent road network.

Although located within the Business Park designation, this area is to be developed as to give a park-like appearance, and landscaped to incorporate sitting opportunities to view the SWM facility. The entrances to this feature will be demarcated and visible from the adjacent street network.

This feature should include 4x10 metre of level terrain, with paving or granular pathway surface. Two benches are to be placed within the area to allow for viewing opportunities into the SWM facility.

2.7 Key Vista

Within the Business Park area, a key vista is present along Highway 404, overlooking a section of the Highway 404 Frontage and the Cathedraltown Woodlot Park. In order to preserve views into the woodlot, the following guidelines should be adhered to:

- Visibility to the Cathedraltown Woodlot Park should not be obstructed by grade, plant materials and other built form elements.
- Coniferous trees are discouraged. Deciduous canopy trees with visually permeable foliage are preferred.

3.0 OPEN SPACE PLAN

3.1 Open Space Objectives

The majority of the Subject Lands is comprised of agricultural cropland. A small amount of significant natural features exist within the area, including the west tributary of Berczy Creek, several small streams, and a number of hedgerows. Refer to *Section 1.2.5* for a discussion of these features.

The overall open space goal is to preserve and enhance natural features and cultural heritage resources, including significant vegetation, aquatic resources, and archaeological sites. Specific objectives include:

- Identify, protect and preserve valley lands and associated natural features of the tributary of Berczy Creek.
- Be consistent with the Town's policies and programs to establish the Rouge Park North.
- Ensure that development results in a net benefit to the environment, where feasible.
- Avoid or mitigate negative impacts on natural features and functions, including small streams within and adjacent to the Planning District.

The Open Space Plan has been shaped by a number OPA requirements, including those from the Region of York and the RNMP, as previously discussed in *Section 1.1*. Based on these components, the natural feature components recommended to be retained in the Subject Lands are illustrated in *Figure 3.1*, and discussed in the following sections.

3.2 Berczy Creek











The west tributary of Berczy Creek is protected by a Potential Environmental Protection Area Corridor, based on the feature's edge. The overriding parameter, however, is the Regional Floodplain (+10 metres buffer), which lies outside of the

3.0 OPEN SPACE PLAN



Figure 3.1 Open Space Master Plan

LEGEND

	BERZCY CREEK		PATHWAYS
	Potential Environmental Protection Area Corridor [PENDING REVISION]		MULTI-USE TRAILS
	OPEN SPACE FEATURE		BIKE LANES
	PROPOSED SWM FACILITY		CATHEDRALTOWN WOODLOT PARK
	ENHANCED HIGHWAY LANDSCAPING		CLASS 2 SMALL STREAM FEATURES

feature's edge (+20m buffer). Currently, these lands are identified as "Valleylands" under the designation of Environmental Protection Area on *Figure 1.3*.

As noted, Town of Markham OPA 140, which would implement the provisions of the RNMP, is under appeal at the OMB. Accordingly, the determination of the final park boundary will be based on RNMP criteria. This will be performed in conjunction with an EIS, which will determine the potential for cut and fill to create a more uniform edge, as well as a peer review by the Toronto and Region Conservation Authority (TRCA).

As a result of these pending actions, the limit of development will be wider and narrower in some areas, and differ from what is shown on *Figure 3.1*. Thus, the current area illustrated should be taken only as a guideline for the purpose of this Community Design Plan.

As the landform of this block is very flat, the watercourse is not visually well-defined. Therefore, watercourse buffers should be treated with native riparian species in the valley feature areas, and upland native tree species in the adjacent buffers.

3.3 Open Space Feature

An open space feature area is proposed within the Business Park area, as previously discussed in *Section 2.0*. The area will be developed into a park-like sitting, providing viewing opportunities for Business Park users into the adjacent stormwater management facility.

This feature will be incorporated into the trail network, and provide a connection to the hydro corridor through enhanced landscaping. See *Section 2.6.4* for further urban design requirements of this Open Space Feature.

3.4 Stormwater Management Facilities

Stormwater Management (SWM) facilities should be designed as accessible open spaces, and act as passive amenities to the Business Park. Generally, SWM facilities should adhere to the following design guidelines:

- The edge of the facilities should be urban in nature where they abut adjacent streets.
- The design of these facilities should be undertaken in a fashion which does not require

fencing, while meeting public safety standards.

- Planting should be undertaken in accordance with the TRCA Stormwater Management Guidelines.
- Concrete headwalls should be screened from adjacent sidewalks and streets.
- All stormwater maintenance roads are to be designed and accessible to business park users for informal hiking opportunities.
- Where possible, stormwater features should be incorporated into the recreational trail network.

3.5 Enhanced Highway Landscaping

Along Highway 404, an enhanced landscape buffer will be required, with 50% of the plant material planted along the rear lot line.

Refer to Section 2.2 for further urban design requirements along Highway 404.

3.6 Pathways and Trails

A network of pathways, multi-use trails and bike lanes are proposed for the Subject Lands, and illustrated in *Figure 3.1*. In addition, *Figure 2.1* notes potential connections of these pathways and trails to other regional trail networks.

For the current Trails and Pathways Master Plan, see also the Town of Markham website at http://www.markham.ca/Markham/Departments/Planning/Studies/Studies_Pathways.htm.

3.6.1 Multi-Use Trails

Two asphalt multi-use trails are proposed for OPA149. The first trail is to be from Cathedraltown Woodlot Park to Woodbine Avenue along the north side of Woodbine By-pass, while the second trail will be along the east side of Honda Boulevard, and will connect to the west tributary of Berczy Creek to the north.

These multi-use trails shall be 3-metres in width, and will support a wide range of users including pedestrians, cyclists and in-line skaters.

See Figures 4.4.1, 4.4.2 and 4.3 for typical cross-sections incorporating the multi-use trail on Woodbine Avenue and Honda Boulevard.

3.6.2 Pathways

2 metres compacted granular pathways are proposed within the Subject Lands as illustrated in *Figure 3.1*. In SMW facilities, pathways are to follow maintenance road beds. All pathways are to be located within public lands, which include stormwater ponds and Right-of-Ways.

3.6.3 Bike Lanes

Bike lanes are proposed within the Subject Lands in accordance with the Town of Markham Trails and Pathways Master Plan (2007). These lanes should be denoted by pavement markings and signage so as to identify the facility as part of Town of Markham cycling network.

3.7 Cathedraltown Woodlot Park

The Cathedraltown Woodlot Park, adjacent to a portion of the southern boundary of the Planning District, is identified for protection in the Cathedral Community Secondary Plan (PD 39-1); refer to *Figure 3.1* for the extent of this feature. In accordance with the Section 2.2.2.4.3 and Section 2.2.2.9 of the Official Plan, protection of the woodlot and an environmental buffer of 10 metres from tree dripline shall be provided. This 10 metre buffer should be planted with an appropriate vegetative buffer as determined through discussions with the Town of Markham, and the TRCA.

This mature Sugar Maple-Beech-White Ash woodlot is a feature on which the Business Park can visually capitalize on, and be linked into the future woodlot trail network. The proposed multi-use trail located along the north boulevard of the Woodbine Bypass will provide a link from the woodlot into the Business Park, and create passive recreation opportunities for Business Park employees.

3.8 Small Stream Features

A management program has been put forth by the Town of Markham in order to ensure the long-term sustainability of the watersheds associated with small streams and intermittent drainage features that do not meet the definition of “watercourse”. See *Figure 1.2* for the location of all small stream features within the Subject Lands.

Figure 3.1 identifies Class 2 small stream features, which will be modified and enhanced with the development of the Business Park. The remaining small stream features (Class 3) will not be preserved, and are thus not identified on the Open Space Master Plan. However, their current functions will be accommodated in future SWM facilities and the west tributary of Berczy Creek (Schollen and Co, "Small Stream Features Assessment - Summary Report", October 2007).

3.9 Parkland Dedication and Cash in Lieu

As per the Planning Act, landowners are required to dedicate 2% of lands as parkland in Business Park Areas. However, in discussions with the Town of Markham planning staff, it was agreed that in lieu of this parkland dedication, an equivalent of 2% of land value will be accepted. This monetary compensation will be utilized to purchase privately held lands in the Cathedraltown Woodlot Park located along the OPA 149 southern boundary.

Table 3.9 indicates the amount of lands that would be acquired by the Town should the Town wish to receive parkland in lieu of cash.

LAND USE	AREA (ha)	Parkland Dedication (2%)
Business Park Area	110,439.00	2,208.78
Business Corridor Area	5,991.00	119.82
TOTAL AREA (ha)	116,430.00	2,328.60

Table 3.9: Parkland Dedication

4.0 STREETScape MASTER PLAN

4.1 Streetscape Design Objectives

The overriding goal of the public-realm landscape within the OPA 149 Business Park lands is to create pedestrian-oriented streetscapes. This will be done primarily through unifying the Business Park aesthetically through street tree planting, while protecting and enhancing natural features.

The following streetscape objectives for the OPA 149 Planning District will lead the subsequent development of the Business Park:

- To establish a streetscape design framework that will ensure the development of an attractive and distinctive Business Park.
- To promote an environment that prioritizes pedestrian accessibility and accommodation through the integration of sidewalks, feature paving, pedestrian-friendly lighting, street signs, and appropriate landscaping and screening.
- To ensure appropriate integration with adjacent land uses through the coordination of streetscape design.
- To ensure the development of attractive architecture along streets, and the establishment of focal architecture at landmark locations.

4.2 General Streetscape Design Guidelines

The following subsections provide general guidelines for all streetscape design. For discussions on the naturalization, landscaping and enhancement of SWM facilities and other conveyance systems and buffers, refer to *Section 3.0*.

4.2.1 Sidewalks

For Honda Boulevard and Woodbine Avenue, a sidewalk is proposed for one side

of the ROW; a multi-use trail shall be located on the opposite side in accordance to *Figure 3.1*. For all remaining streets, sidewalks are to be located on either sides of the street. All sidewalks should consist of a minimum width of 1.5 metres.

Sidewalks should be expanded to accommodate transit stops, gateway areas and connections to trails.

4.2.2 Street Furniture

Street furniture, including benches, transit stops, waste receptacles, and street signs, shall be visually consistent and coordinated throughout entire development blocks with the consistent use of colour, style and materials.

4.2.3 Roadway Lighting

Roadway lighting is the responsibility of Markham Hydro; lighting levels, pole type, and locations are typically determined by the utility corporation. However, the luminaries and pole brackets are recommended to match the lighting approved for Honda Boulevard (200 w flat glass cobrahead, mounted on 2.4 m. tapered elliptical avm, attached to 12.2m concrete pole-mold finish).

Throughout the Business Park, lighting pole spacing and placement is to match the Honda Boulevard Lighting Plan, a section of which is shown on *Figure 4.2.3*.

Lighting throughout the Business Park is to be of high-pressure sodium.

4.3 Street Trees

4.3.1 Row spacing

All streets within the Business Park are proposed to be lined with trees. A double row of trees is proposed for the Woodbine Bypass, as well as for the major north-south collector road Honda Boulevard. The remainder of the streets will have a single row of trees.

For double rows, trees are to be spaced at 10-12 metres, in a staggered pattern. For single rows, trees are to be spaced at 15 metres.

Along the Woodbine Bypass to the south, these guidelines may be varied to match the Cathedral Community planting scheme.

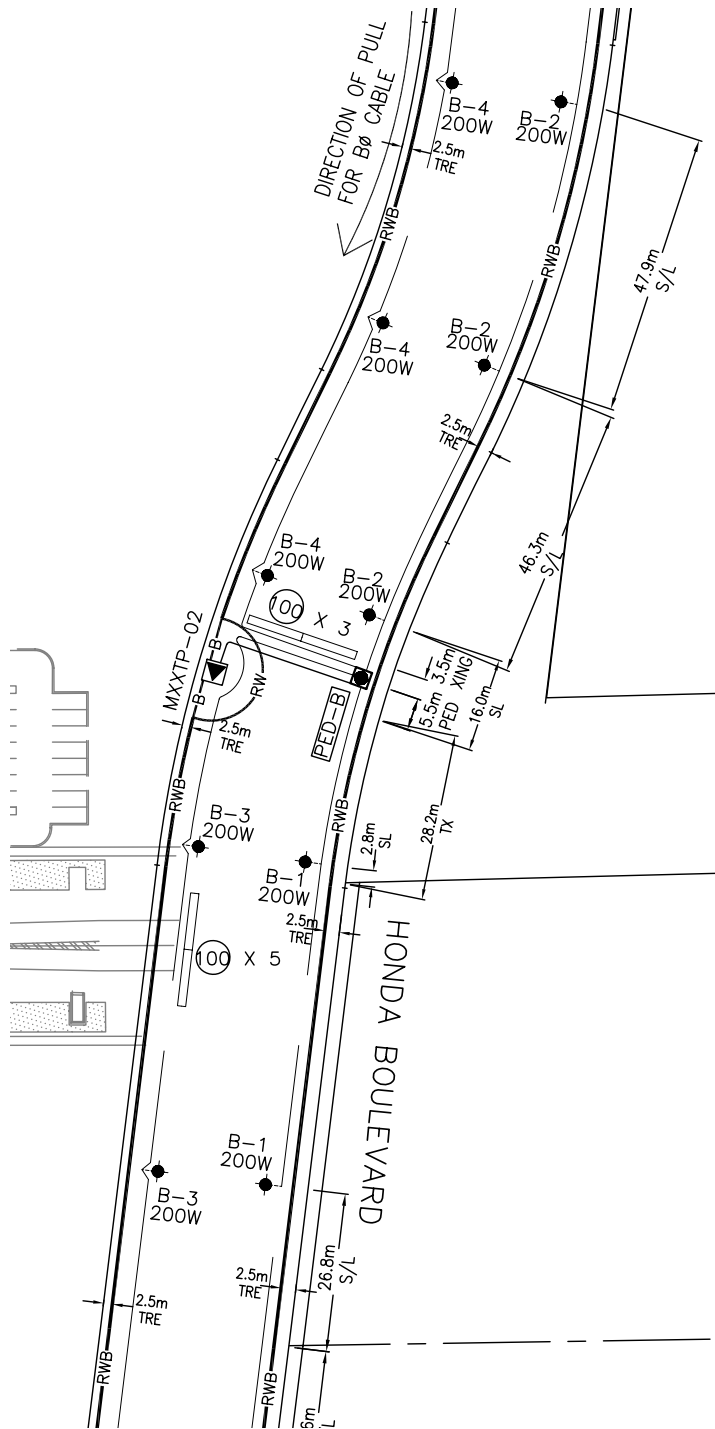


Figure 4.2.3: Honda Boulevard Lighting Plan, for reference only

4.3.2 Species Selection

Street tree species are to be selected from the *York Region Acceptable Street Tree Species List*. This list is available online at the York Region website, www.york.ca.

Preference for street trees should be given to hardy native species or other salt-tolerant, high-branching deciduous varieties. Species recommended for use in the Cathedral Community Public Right-of-Way (ROW), which should be extended north into the Business Park, are shown in *Table 4.3.2*.

4.3.3 Species diversity

The planting of monocultures (dependence on one plant species) within the streetscape is detrimental to the maintenance of tree health, and increases the Business Park's overall susceptibility to pests and diseases. The Business Park Streetscape Plan encourages biodiversity in the streetscape by the following measures:

- The planting of any one individual species is limited to eight (8) consecutive trees in any given planting scheme.
- Alternating tree groupings within blocks is preferred to ensure consistency in variation. A random mixture of trees is not encouraged.
- At intersections, a greater variety of tree species is encouraged in order to enhance the landscape.
- To ensure diversity, the amount of one tree genus shall not exceed more than 20% of all plantings, and the amount of one tree species shall not exceed more than 10% of all plantings.

The number of species required in a planting scheme shall be determined by the overall number of trees, as conforming to *Table 4.3.3*.

4.3.4 Streetscape Master Plan

The planting scheme for the Streetscape Master Plan was based on the treatments and features outlined in the Streetscape Demonstration Plan in *Section 4.4*. See *Appendix C* for the Streetscape Master Plan.

For Honda Boulevard and Woodbine Avenue (arterial roads), tree species were selected based on fall colour, and are designed to project alternating swatches of colour along the road in autumn.

For the remaining collector roads, tree species were also selected according to fall colour, but with an emphasis on colour-blocking from one side of the road to

Trees Recommended (for Cathedral Community Public Rights of Way)	
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Aesculus Hippocastanum	Horse Chestnut
Tilia cordata 'Greenspire'	(Greenspire Linden)
Tilia americana	(Basswood)
Ornamental tree Recommended (to accentuate prominent locations such as landmarks, corners, open space and view corners)	
Aesculus hippocastnum sp.	Chestnut
Amelanchier canadensis	Service
Cornus mas	Cornelian Cherry
Ginko bilboa	Maidenhair Tree
Pyrus calleryana Chanticlear	Chanticlear Pear
Syringa reticulata Ivory Silk	Ivory Silk Tree
<i>Other recommended planting in open space and park land</i>	
Juglans nigra	Black Walnut
Viburnum spp.	Viburnum
Cercis canadensis	Canadian Redbud
Malus	Apple
Pyrus	Pear
Hydrangea spp	Hydrangea

(Cathedral Community Secondary Plan Area)

Table 4.3.2: Trees Recommended for Cathedral Community Public ROW

Number of Trees in Planting	Minimum Number of Species
1-8	1
9-15	2
16-30	3
31-40	4
41-50	5
51-100	6
101-200	10
200 +	12

(as recommended by TRCA)

Table 4.3.3: Number of Species and Trees in Plantings



Figure 4.4: Streetscape Demonstration Plan

LEGEND

	SITE ENTRY		END VIEW BUILDING TREATMENT
	MAJOR GATEWAY FEATURE		BUSINESS PARK AREA
	MINOR GATEWAY FEATURE		BUSINESS CORRIDOR AREA
	OPEN SPACE FEATURE		SWM FACILITY
	PATHWAY AND TRAILS		ENTRY SIGNAGE
	CORNER BUILDING TREATMENT		HIGHWAY 404 FENCING

Note that suggested building configurations are subject to change pending grading and engineering requirements.

the other.

Corner and end-view frontages feature smaller ornamental planting that provide interest over the seasons.

4.3.3 Timing

The installation of street trees should take place in concert with the Site Plan Application and Approval process.

4.3.4 Utility Corridor Planting

Plantings of trees with lower growing heights are recommended to be planted where the Hydro One Corridor intersects with 19th Avenue, Street F, Street E and Woodbine Avenue. In doing so, this landscape will ensure the continuity of the streetscape, while restricting views of the hydro towers.

4.4 Streetscape Demonstration Plan

The following section focuses on specific roadway and streetscape initiatives based on the hierarchy of road network summarized in *Section 1.6*.

Figure 4.4 illustrates the urban design, open space components and streetscape initiatives proposed for the Woodbine By-Pass and the south end of Honda Boulevard.

4.4.1 Woodbine Bypass

The Woodbine Bypass in OPA 149 will be within a 36.0m ROW. This will include a 3 metre wide multi-use trail along its northern boulevard, and a 1.5m sidewalk along its southern boulevard. See *Figure 4.4.1.1* and *Figure 4.4.1.2* for illustrative street cross-sections of the Woodbine Bypass ROW.

As the Woodbine Bypass extends north from the Cathedral Community, the streetscape treatment proposed for the Bypass shall be consistent with the following *Cathedral Community Secondary Plan* guidelines:

- A double row of street trees shall be planted on each side of the street.
- Sidewalks shall be located on both sides of the street.
- Street trees shall be consistent in species and/or form along the entire street.

4.0 STREETSCAPE MASTER PLAN

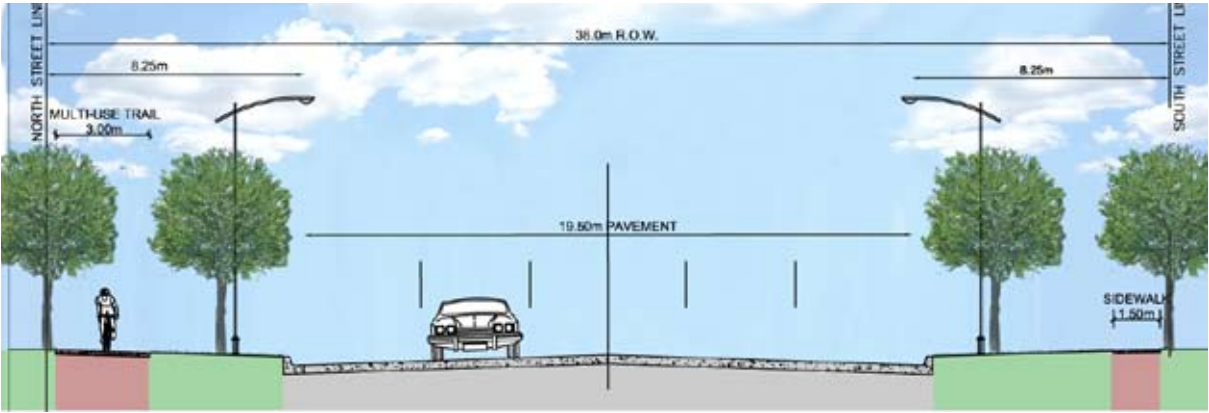


Figure 4.4.1: Woodbine Bypass Mid-Block

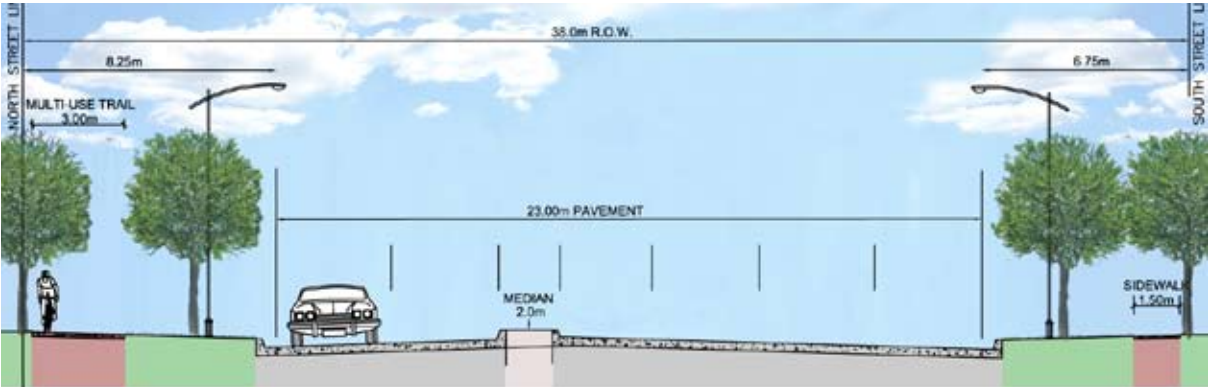


Figure 4.4.2: Woodbine Bypass at Intersection with Single Left Turn

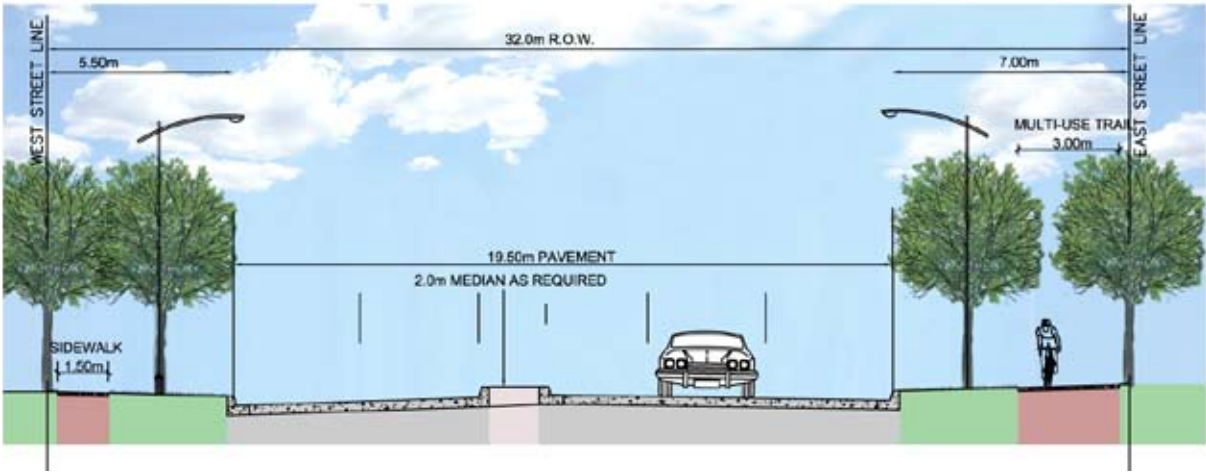


Figure 4.3: Typical Honda Boulevard Section

- Variation in street trees may be introduced at the intersections, particularly where gateways occur. Coordination with gateways designs should be foremost.
- Street lights should be placed in line with street trees in the boulevard, and spaced to eliminate conflict with tree canopies.

4.4.2 Honda Boulevard

Along with the Woodbine Bypass, the Honda Boulevard is a major collector road in OPA 149. As such, this four-lane wide roadway acts as the primary gateway and “image route” within the Business Park lands, in addition to being the primary access to the Honda development.

Accordingly, the same streetscape guidelines for the Woodbine Bypass, as outlined in Section 4.4.1, shall apply to Honda Boulevard. See *Figure 4.4.2* for illustrative street cross-sections of the Honda Boulevard ROW.

4.4.3 Major Gateway Feature

A Major Gateway Feature is proposed for the southern terminus of Honda Boulevard at the Woodbine Avenue Bypass. See *Figure 4.4* for the location of the Major Gateway Feature within the Business Park.

The location of this Major Gateway Feature corresponds with the demarkation of Primary Gateways, as discussed in *Section 2.4*. This features will consist of enhanced landscape treatments in concert with the articulation of the corner building frontages, as previously discussed in *Section 2.5*.

4.4.4 Minor Gateway Feature

A Minor Gateway Feature is proposed at the secondary entrance into the Business Park, at the intersection of Street C and the Woodbine Avenue Bypass. See *Figure 4.4* for the location of the Minor Gateway Feature within the Business Park.

The location of this Minor Gateway Feature correspond with the demarkation of Secondary Gateways, as discussed in *Section 2.4*. This feature will consist of enhanced landscape treatments in concert with the articulation of the corner building frontages, as previously discussed in *Section 2.5*. The design of this feature should be consistent with the design of the Major Gateway Feature discussed in *Section 4.4.3*.

5.0 SUMMARY AND CONCLUSIONS

The Open Space and Streetscape Master Plan creates a well-designed public area that incorporates street trees, sidewalks, street furniture and appropriate street lighting to create an inviting and aesthetically appealing public realm, while preserving natural features, capitalizing on SWM facilities and trail and enhancing the connections to the green corridors of the surrounding communities.

The Demonstration Plans of the Business Park have been created to illustrate the components of the urban design and streetscape design principles. View corridors along the proposed Woodbine Bypass and Honda Boulevard will comprise of small open spaces and rich streetscapes throughout. Building orientation and streetscape treatment will contribute positively to the views along the primary streets.

Distinctive architectural features located at Gateways and Corner Frontages will anchor buildings located in these areas. These locations will be focal points that create visual entranceway into the Business Park.

Finally, the enhanced street tree planting treatment along the street network will visually unite the Business Park while providing visual interest throughout the year.

APPENDIX

Appendix A: Streetscape Master Plan

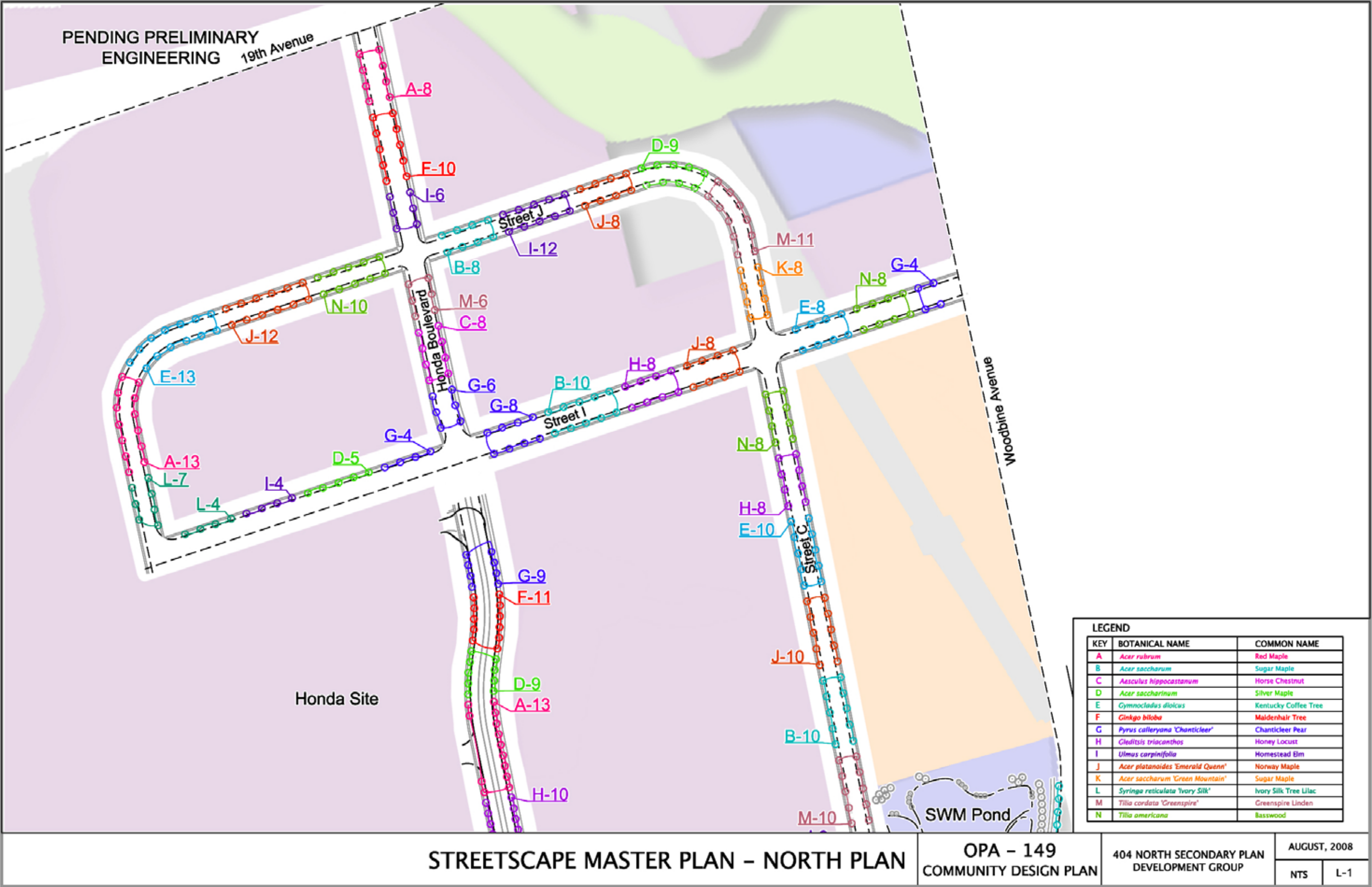
Appendix B: Existing Natural Environment Conditions

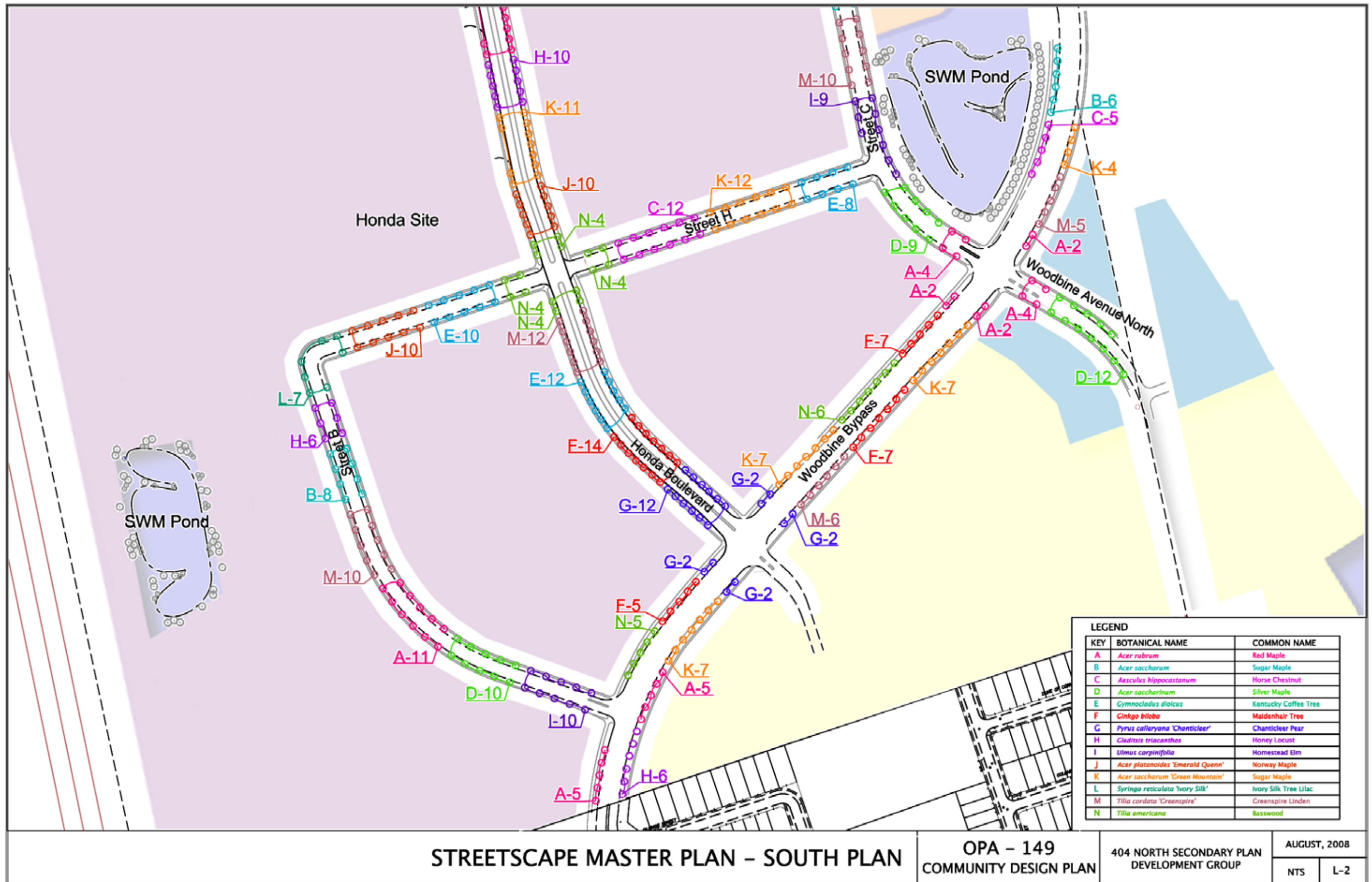
Appendix C: Schedule F, Open Space Master Plan, OPA 149

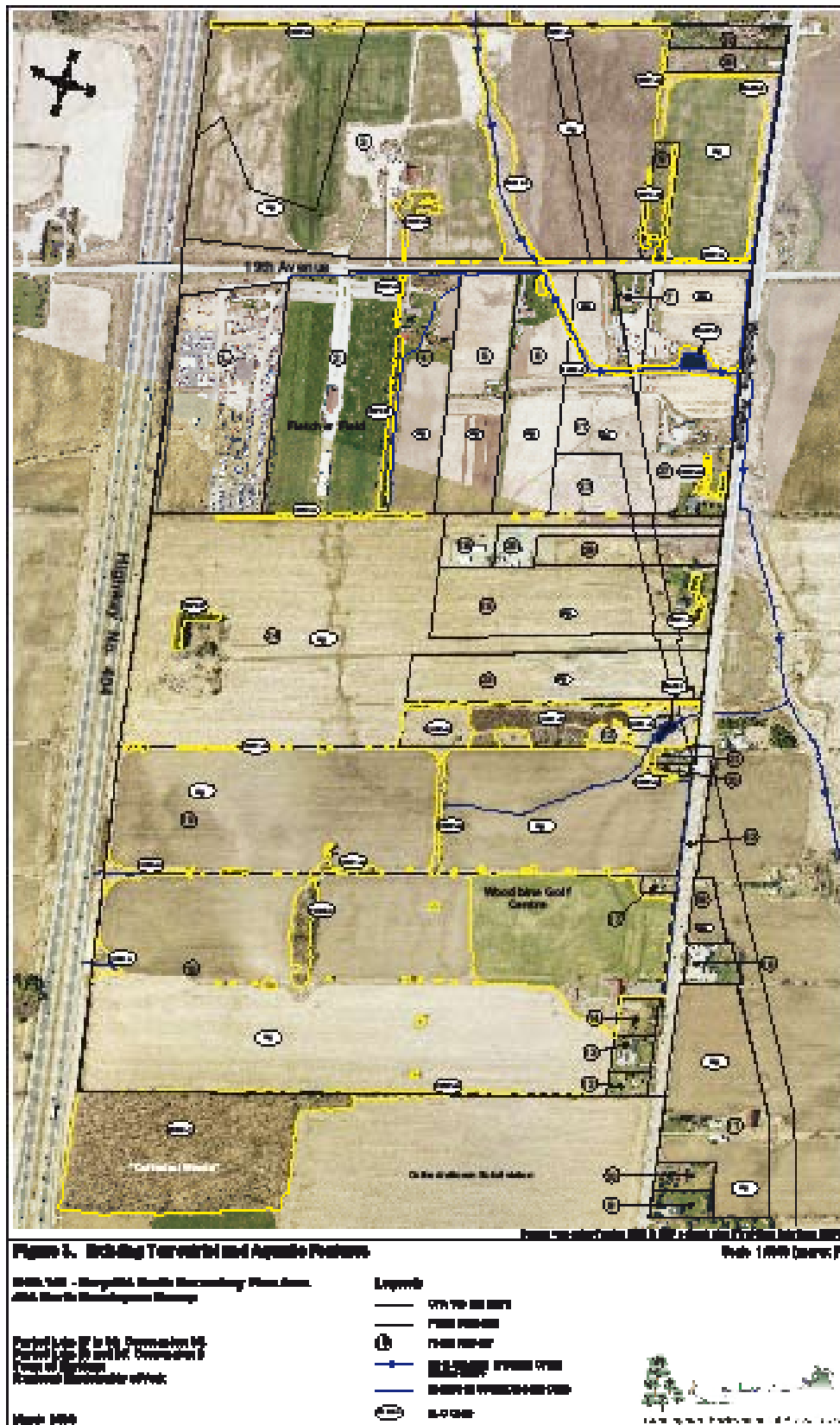
Appendix D: Application of Oak Ridge Moraine

APPENDIX

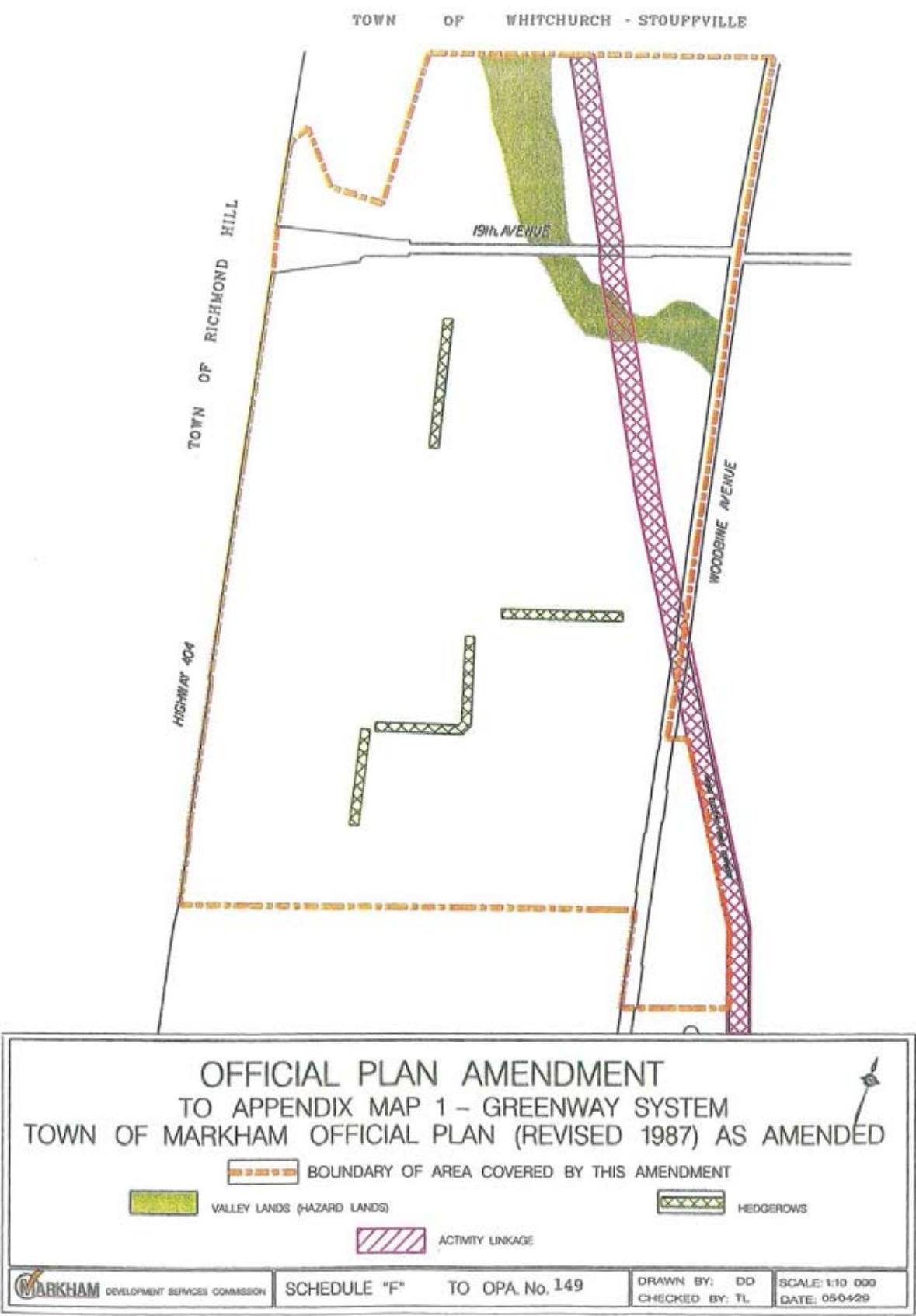
APPENDIX A: Streetscape Master Plan







APPENDIX B: Existing Natural Environment Conditions



APPENDIX C: Schedule F - OPA 149 - Open Space Master Plan

APPENDIX D: Application of Oak Ridges Moraine

Conservation Plan, 2780-19th Avenue,
Town of Markham, Ontario

Prepared by *Terraprobe Limited*



Terraprobe
*Consulting Geotechnical & Environmental Engineering
Construction Materials Engineering, Inspection & Testing*

**APPLICATION OF OAK RIDGES MORaine
CONSERVATION PLAN
2780-19TH AVENUE
TOWN OF MARKHAM, ONTARIO**

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Attention: Mr. Attilio Lio

File No. 1-07-2278
February 14, 2008
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EXECUTIVE SUMMARY

Terraprobe Limited was retained by 404/19th Avenue Developments Inc. to conduct a review of the applicability of the Oak Ridges Moraine Conservation Plan (ORMCP) to a property situated at 2780 19th Avenue in the Town of Markham. The northwestern portion of the site has been designated under the Oak Ridges Moraine Conservation Plan, and Town of Markham Bylaw 304-87 as amended by Bylaw 2003-311. The purpose of the review is to determine if the portions of the property designated as part of Oak Ridges Moraine exhibited natural and topographic features characteristic of the moraine.

A detailed study of the property was conducted to assess its topographic, geologic, and natural features. The results of the study indicate the following:

- The property falls entirely below the 245 m contour designated as the boundary of the Oak Ridges Moraine in the Oak Ridges Moraine Conservation Plan.
- The property consists of flat land and is not designated as a landform conservation area.
- The property is underlain by low permeability glacial tills and has no sensitive hydrologic or hydrogeologic function.
- The property has been extensively used for agricultural purposes and has no remaining significant natural features.
- The property is not adjacent to any environmentally sensitive areas, areas of natural or scientific interest, or areas of significant habitat.
- The results of the studies conducted confirm that the criteria in Part III of the Oak Ridges Moraine Conservation Plan (Sections 19 to 30) do not apply to the property.

The property is part of the OPA 149 Secondary Plan area (except for the portion currently designated as within the Oak Ridges Moraine), and is not isolated from adjacent lands. The site will be developed in conjunction with the remaining lands within the OPA 149 area.

It is recommended that a request be made to the Town of Markham to review the Oak Ridges Moraine designation of this portion of the property. This request is made on the basis that detailed studies conducted indicate that it is not part of the Oak Ridges Moraine, based on elevation, topography, geology, and natural features and functions.

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Figure 3 - Topographic Survey of Site

Figure 4 - Natural Heritage Features

Figure 5 - Development Plan OPA 149

Appendix A - Guido Papa Surveying Ltd.

1.0 INTRODUCTION

Terraprobe Limited was retained by 404/19th Avenue Developments Inc. to conduct further review of the applicability of the Oak Ridges Moraine Conservation Plan (ORMCP) to a property situated at 2780 19th Avenue in the Town of Markham. It is proposed to develop the property for commercial and employment land uses. Previous work conducted by Terraprobe for the property includes a Phase I Environmental Site Assessment, entitled "*Phase I Environmental Site Assessment: 2780- 19th Avenue, Town of Markham, Ontario*" (dated November 22, 2007).

A portion of the property falls within an area which has been designated as part of the Oak Ridges Moraine as defined in the ORMCP and the Town of Markham Oak Ridges Moraine Secondary Plan 43-1. The purpose of this investigation was to determine if the portion designated as part of the Oak Ridges Moraine exhibited natural and topographic features characteristic of the moraine.

2.0 SCOPE OF WORK

The scope of work for the study consisted of the following:

- A review of regulatory and planning information regarding the Oak Ridges Moraine including the ORMCP, Oak Ridges Moraine Conservation Plan Technical Paper Series 1-12, and Town of Markham Bylaw 304-87 as amended by Bylaw 2003-311 regarding the implementation of the ORMCP within specific areas of the Town of Markham.
- A review of information regarding natural heritage features, geology, hydrogeology, and land use on the property.
- A detailed topographic survey conducted by GPS Surveys Limited (Ontario Land Surveyors) to confirm ground surface elevation and topography of the site.
- A detailed site inspection to assess current site conditions and land use on the property and surrounding areas.
- Providing conclusions and recommendations regarding the applicability of the ORM designation to the property.

3.0 SITE DESCRIPTION

There have been detailed studies conducted to assess site conditions. These studies include a Phase I Environmental Site Assessment, Geologic and Hydrogeologic Investigations, and a Natural Heritage Study. In addition, applicable background information including various technical papers and policies relating to the ORMCP have also been reviewed. A complete list of the documents reviewed in the preparation of this report is provided on the accompanying List of References.

3.1 Site Location and Description

The location of the property is shown on the accompanying **Figure 1**. The property is situated on the north side of 19th Avenue between Woodbine Avenue and Highway 404 in the Town of Markham. The legal description of the property is East Half of Lot 31, Concession 3, Parts 1, 2, and 3, Plan 64R2547. The property is roughly rectangular in shape and covers an area of approximately 36 ha (89.9 acres).

3.2 Current Property Uses

The site is currently occupied by a farm house, a barn and several out-buildings. Most of the site is open and is covered with sparse weeds, grass or other vegetation. There are occasional sparse trees found along the fence lines. The buildings are generally in poor condition and have been rented by various businesses. A portion of the property is currently used as a storage area for an electrical contractor, for utility poles, culverts, and associated items.

The property has been used for agricultural purposes for at least several decades. The current agricultural use is for sod farming.

The property (with the exception of the area designated as within the Oak Ridges Moraine) is situated within the 404 North Planning District and OPA 149 Secondary Plan Area. Most of the surrounding properties are currently used for agricultural or rural residential uses. Future development for commercial, employment, and residential uses are planned within the OPA 149 area.

Highway 404 forms a significant transportation corridor and is found along the western property boundary.

3.3 Proposed Site Development

It is proposed to develop the site for commercial and employment use. The precise form and scope of the development will be determined through a future planning process. However, the site will be serviced with full municipal services including internal roadways, municipal utilities including piped water and storm and sanitary sewers, and storm water management facilities.

3.4 Site Topography and Drainage

The property is situated within the watershed of the Rouge River, and falls under the jurisdiction of Toronto Region Conservation Authority. The west tributary of the Berczy Creek drains southward through the central portion of the property as shown on **Figure 2**. In this area the creek is a broad poorly-defined swale without a well-defined channel or bank condition. Flow in the creek is intermittent. Agricultural operations including ploughing and planting have taken place up to and into the creek area.

The west tributary of the Berczy Creek continues south from the site and drains through other lands within the OPA 149 area. In these areas the creek is channelized as a result of previous agricultural drainage operations. The creek ultimately drains into the main branch of the Berczy Creek approximately 3 km south of the property.

A detailed topographic survey of the site was undertaken by an Ontario Land Surveyor (GPS Surveys Limited) and is presented on **Figure 3**. The survey was conducted by obtaining spot elevations on a 25 metre grid across the property. Particular attention was paid to allow precise delineation of those zones with elevations greater than 245 masl. The survey is referenced to 3 geodetic bench marks and is an accurate representation of site elevations. **It has a much higher level of precision and accuracy than larger scale topographic mapping used by the Province to define the 245 m contour elevation.**

As noted on the detailed topographic survey, there are no portions of the site which have an elevation above 245 m. The site topography is flat, with drainage generally directed southward. The total topographic relief across the site is on the order of 9 m.

3.5 Geology and Hydrogeology

The geologic and hydrogeologic conditions at the property have been assessed through available background information (including well records and geologic mapping) and from on-site subsurface investigation.

The site is situated in an area that is underlain by deposits of glacial till of the Halton series. The glacial till is relatively extensive in this area. The total depth of soil in the area ranges from about 50-80 m. Beneath the soil, shale bedrock of the Georgian Bay formation is encountered.

The available information indicates there are no significant aquifer systems found immediately beneath the property. There are thinner intermittent zones of granular material typically found at depths of over 15 m below grade beneath the glacial till. These zones do not constitute a major local aquifer and are provided with a high degree of geologic protection by the overlying glacial till.

The property is currently in a rural area and is serviced by individual water wells. Typically the water wells are completed as large diameter bored wells within the glacial till. The site is not located in the vicinity of any existing or proposed municipal water supply wells or aquifer zones.

Regional ground water flow in the glacial till material is generally directed southward, following regional topography.

The site does not exhibit geologic or physiographic features which are characteristic of moraine topography or geology. Specifically, the site is not characterized by any of the following:

- Closed depressions or areas of significant ground water function including kettle lakes or kettle features.
- Areas of steep or rolling topography.
- Areas underlain by highly permeable sediments such as sand or gravel.
- Areas underlain by significant regional aquifer systems or areas of high aquifer vulnerability.

3.6 Natural Environment Features

The existing natural environment conditions on the property have been studied (Cunningham and Associates, November 2007). Generally, there are few remaining significant natural features on the site as a result of extensive agricultural use of the property for many decades. The results of the study indicate that the site is characterized mostly by agricultural lands. There are local areas of mineral meadow marsh found along the west tributary of the Berczy Creek, and old field meadow with scattered trees and shrubs found along fence lines. The extent of these features is shown on the accompanying **Figure 4**.

There are no Environmentally Sensitive Areas, or Areas of Natural or Scientific Interest found within a radius of 120 m or more of the property.

4.0 APPLICATION OF OAK RIDGES MORaine CONSERVATION PLAN

The applicability of the ORMCP to the property is discussed in this section of the report. The discussion is intended as a summary to compare site features to the criteria which have been developed to protect the natural and heritage features of the Oak Ridges Moraine.

4.1 Identification of Property in Oak Ridges Moraine Conservation Plan

A portion of the property has been identified as falling within the area governed by the ORMCP. The extent of this area is shown on the accompanying **Figure 4**, from By-law 304-87, as amended by By-law 2003-311. As noted, an irregular portion located at the northwestern part of the property has been zoned as Agricultural One - Oak Ridges Moraine Countryside.

The identification of this area was based on large scale topographic mapping. The Oak Ridges Moraine Conservation Policy generally defines those areas with an elevation of 245 m or higher as being included within the Oak Ridges Moraine Conservation area. A review of background information indicates that there were no other defining features (such as moraine-like topography, geology, or natural heritage features) which led to the designation of the lands under the ORMCP.

As noted in Section 3.3 of this report, a detailed topographic survey was conducted for the entire property by an Ontario Land Surveyor. The survey confirms that all of the property is found at an elevation lower than 245 m. **Therefore, on the basis of ground surface elevation, the property is not included within the ORMCP Area.**

4.2 Application of Conservation Plan Criteria

Although the property falls below the 245 m contour, the applicability of other criteria of factors found in the ORMCP were assessed in detail. The purpose of this assessment was:

- To determine if there were significant ecological geologic or hydrogeologic features which may be related to the Oak Ridges Moraine or Oak Ridges Moraine function.
- To assess if the proposed development would maintain the ecological and hydrogeologic integrity required by the ORMCP.

In conducting this determination, specific sections of the ORMCP are referenced as noted below.

4.2.1 Land Use Designations

Part II - "Land Use Designations" of the ORMCP provides information regarding the criteria for boundaries and land use designations within the Oak Ridges Moraine Area. The document indicates that the boundaries of the Oak Ridges Moraine are based on a number of topographic, geomorphic, and geologic attributes, including the 245 m contour. The document also divides the Oak Ridges Moraine into four land use designations (Natural Core, Natural Linkage, Countryside, and Settlement Areas).

Currently, the northwestern portion of the property is designated as Countryside, which is defined as an area of rural land use (i.e. agricultural use, rural settlements, etc.). It has not been designated as a Natural Core Area or a Natural Linkage Area (i.e. areas where key heritage features, landform conservation areas, or other sensitive features are present or nearby) as outlined in Sections 19 to 30 of the ORMCP.

As noted earlier, the detailed topographic survey confirms that no portions of the property are found above the 245 m contour. Also, the boundary of the ORM which currently transects the property does not follow any other identifiable feature, such as watercourses, transportation corridors, or woodlot edges. This suggests that the ORM boundary can be modified by the Municipality and/or the Province based on further assessment of the applicability of Sections 19 to 30 of the ORMCP.

This assessment is provided below, and indicates that Sections 19 to 30 of the ORMCP do not apply to the northwest portion of the site.

4.2.2 Protection of Ecological and Hydrogeologic Integrity

The ORMCP requires the protection of ecological and hydrogeologic integrity in those areas defined as Natural Core, Natural Linkage, or Countryside. Currently, the area is designated as Countryside. The plan requires that any development or site alteration must demonstrate that the ecological and hydrogeologic integrity of the moraine is maintained or improved. This includes consideration of the following:

- Significant natural features. Significant natural features are defined as:
 - Wetlands, significant portions of habitat of endangered and threatened species.
 - Fish habitat.
 - Areas of natural and scientific interest.
 - Significant valley lands.
 - Significant woodlands.
 - Significant wildlife habitat.

The natural features at the site were characterized in a study conducted by Cunningham Environmental Associates. **The studies indicate that none of the above significant natural heritage features exist on the Oak Ridges Moraine portion of the property.**

- Hydrological features. The ORMCP indicates that there must be maintenance, improvement, or restoration of hydrologic features and functions, and sustainable use of water in accordance with watershed plans and budgets. The property is not characterized by significant hydrologic or hydrogeologic features. The site is not an area of high aquifer vulnerability or high aquifer recharge. The west tributary of the Berczy Creek, which is the only significant drainage feature on the site, has been significantly altered and disturbed as a result of agricultural activity.

Nonetheless, any future site development will be conducted in accordance with the policies and regulations of the TRCA, Region of York, and Town of Markham. This requires that the potential hydrologic and hydrogeologic impacts of the site be examined in detail and properly mitigated. This includes assessment of a water budget, protection of surface water quality through proper storm water management, maintenance of ground water recharge rates, and maintenance or enhancement of the function of any water courses on the site including the west tributary of the Berczy Creek.

- Land Form Conservation. Any significant or unusual land form features, particularly those which are characteristic of moraine topography, must be properly preserved. The site is not situated in an area which is designated as requiring land form conservation. The site is flat and exhibits no significant moraine-type topography such as steep or rolling topography, closed depressions, kettle holes, or the like. Therefore, land form conservation is not required for the property.

4.3 Summary of Application of ORMCP

The site studies conducted for the property indicate the following:

- The property falls entirely below the 245 m contour.
- The property consists of flat land. It has no significant land form or topographic features. It is not designated as a land form conservation area.
- The property is underlain by low permeability glacial till soils.
- The property has been extensively used for agricultural purposes and has no significant remaining natural features.
- The property is considered to have a low sensitivity with respect to hydrologic and hydrogeologic function. The existing function can be readily maintained or enhanced as the property is developed.

Based on the above, it is concluded that the site is not part of the Oak Ridges Moraine feature or function. There are no significant natural moraine functions which must be maintained. The existing natural functions of the site can be maintained or enhanced through the development process.

4.4 Status of Development of OPA 149 Area

The portion of the site designated as Oak Ridges Moraine is not “isolated” from adjacent lands. The remainder of the property is within the OPA 149 Secondary Plan Area. The site will be developed in conjunction with the other OPA 149 lands to the east and south. Development of the lands to the south is currently underway, with servicing to be completed in 2008. The lands to the east may be under development as early as 2009 (subject to the landowner).

Although the site is not considered to be part of the Oak Ridges Moraine, the existing natural functions of the site can be maintained or enhanced through the development process which is presently being implemented by the 404 North Landowners Group, as shown on **Figure 5**.

5.0 CONCLUSIONS

- (i) The northwest portion of the site has been designated under the ORMCP, and Bylaw 304-87, as amended by Bylaw 2003-311 (Town of Markham) as shown on **Figures 1 to 4**. This designation was based on consideration of large-scale topography which identified portions of the property as being above the 245 m contour.
- (ii) Detailed studies have been conducted on the site to assess natural heritage features, geology, hydrogeology, and site topography. These studies indicate the following:
 - All of the property is found below the 245 m contour.
 - The property has been extensively disturbed by agricultural practices over the past several decades.
 - There are no significant natural areas or features on or within 120 m of the ORM-designated portion of the property.
 - The property is characterized by low permeability glacial till and exhibits no significant physiographic or geologic features related to the Oak Ridges Moraine.
 - The property is not considered sensitive with respect to hydrogeology or hydrology.
- (iii) The property is not considered to be part of the Oak Ridges Moraine, based on its elevation and lack of any moraine-like characteristics. There is no requirement to exclude portions of the property based on the maintenance of natural heritage features or functions related to the Oak Ridges Moraine. Notwithstanding this, development of the site can be conducted in a manner to ensure that natural heritage, hydrologic and hydrogeologic functions are maintained or enhanced following development. In particular, proper design measures will be developed through the planning and design process to address the following:
 - Development of appropriate storm water management and grading plans to maintain or enhance quality in the west tributary of the Berczy Creek and downstream areas.
 - Provision of a water balance for the site to assess current ground water recharge, and to provide proper storm water management techniques to maintain ground water recharge following development.
 - Identification of the requirement to maintain appropriate buffer zones or setbacks from the west tributary of the Berczy Creek.

6.0 RECOMMENDATIONS

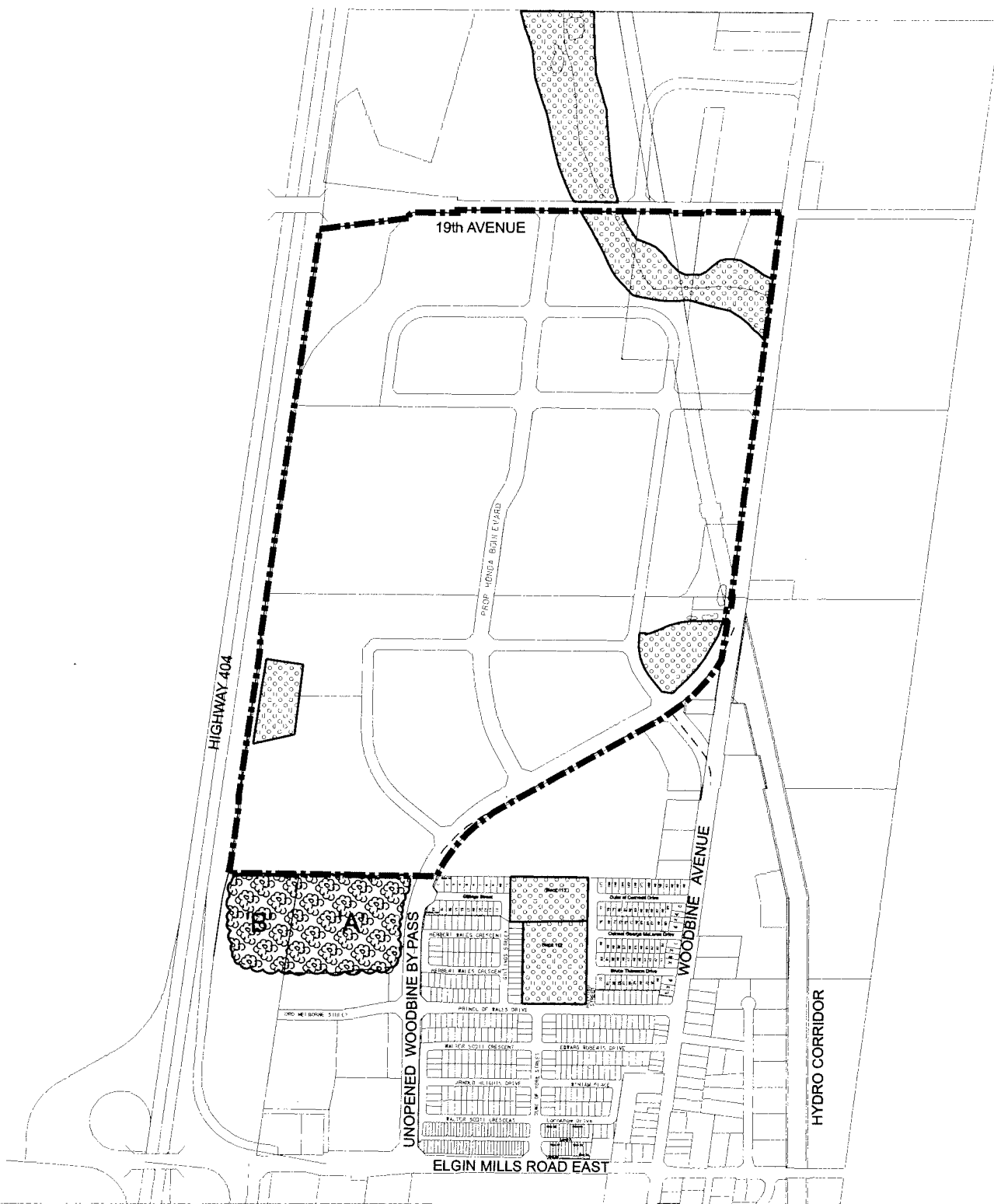
It is recommended that a request be made to the Town of Markham to remove the designation of a portion of the lands under Bylaw 304-87 as amended by Bylaw 2003-311. The detailed studies conducted on the site indicate that it is not part of the Oak Ridges Moraine, based on elevation, topographic, geology and natural features and functions.

Yours truly,

Terraprobe Limited



Paul W. Bowen, P.Geo., P.Eng.
Principal



OPEN SPACE STREETScape MASTER PLAN CONTEXT MAP

