Whitby

Brooklin Expansion Area

Phase 2 Whitby Official Plan Review
Preliminary Preferred Land Use Plan Report



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DILLON CONSULTING

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1 Introduction



1.1 What is an Official Plan?

An Official Plan is a document that sets out a vision and policies to guide the growth and development of a municipality over the long term. At a high level, an Official Plan establishes the structure of a community and what type of land uses are permitted in different areas, including how much, where and what type of growth and development will occur. It provides policy direction on a wide range of topics relevant to the function and planning of a community, including parks, servicing, transportation, protection of lands for agricultural uses, protection of natural areas, urban design and sustainability, as well as policies related to the implementation of the Official Plan.

1.2 Why Undertake an Official Plan Review?

Under the requirements of the Planning Act of Ontario, every municipality is required to review and update their Official Plan every 5 years. Since the Official Plan for the Town of Whitby was last updated in 2018, the Town is required to undertake a review to update their Official Plan. Part of that process will include updates to the Official Plan to ensure consistency and conformity with Provincial legislation and policies, as well as Regional policies, specifically the adopted Region of Durham Official Plan (Envision Durham).

Envision Durham recently introduced a number of changes that are required to be reflected into the Town of Whitby's Official Plan, including the delineation of and establishment of policies for a Protected Major Transit Station Area (PMTSA) around the Whitby GO Station and the identification of areas where growth is to occur. Envision Durham also introduced new lands primarily around Brooklin for Urban Boundary expansion, which is the subject of this Report. Envision Durham was approved with modifications by the Minister of Municipal Affairs and Housing in September 2024.

While the Official Plan Review is being undertaken as one comprehensive project, the updates to the Town of Whitby's Official Plan will happen via four Focus Areas, to be implemented as four separate Official Plan Amendments (OPAs):

> **Focus Area 1:** Updates related to the Protected Major Transit Station Area (PMTSA) located in and around the Whitby GO Station, as identified in Envision Durham. Protected Major Transit Station Areas are areas planned to accommodate greater densities around a major transit station, such as a GO train station.

Focus Area 2: Updates related to Strategic Growth Areas and other Nodes and Corridors.

Focus Area 3 (This Report): Updates related to the expansion of the Brooklin Urban Area as set out in Envision Durham.

Focus Area 4: All other updates required to conform to upper-level policy and legislation.

The locations of where these four OPA Focus Areas will apply is identified on **Figure 1**.

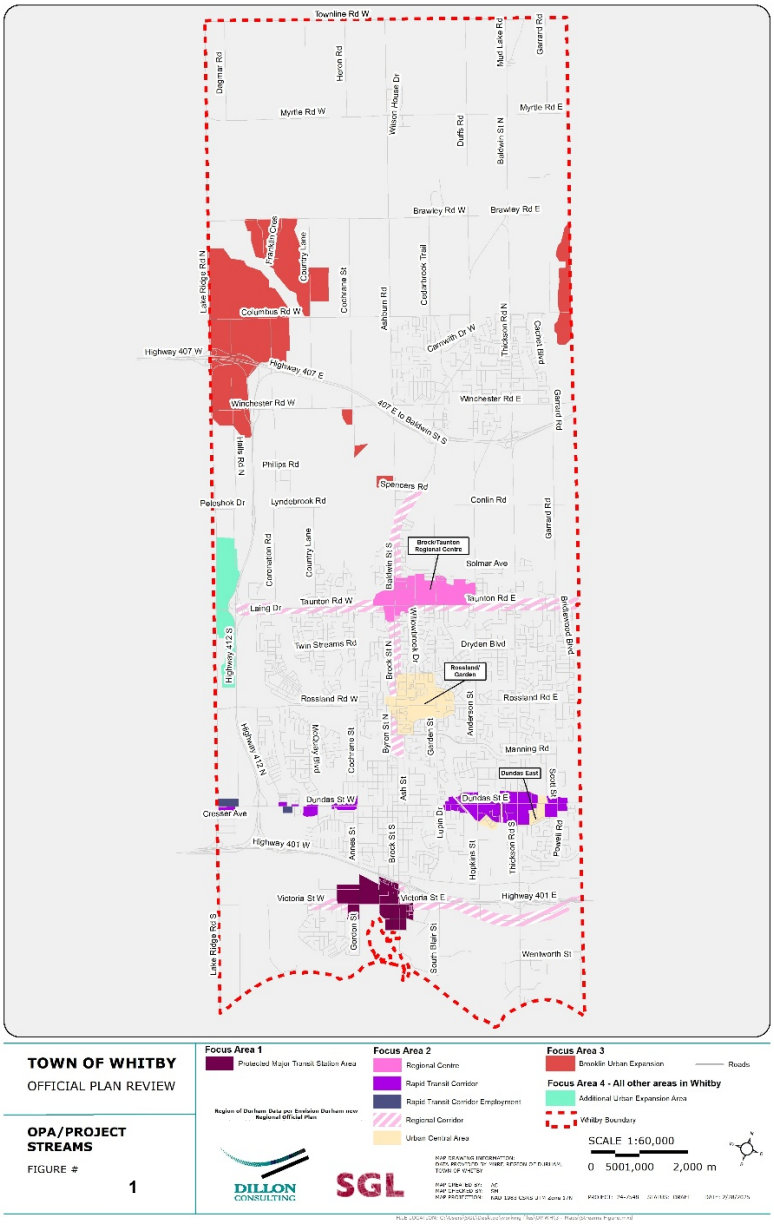


Figure 1: OPA Focus Areas

1.3 Purpose of this Report

The purpose of this Report is to explore matters to be considered in the planning for the Brooklin Expansion Area (Focus Area 3) and describes two potential land use and transportation alternatives along with evaluation criteria to be used in the next phase of the Study. Focus Areas 1, 2 and 4 are discussed in detail under separate reports.

This Report is outlined as follows:

Section 1 is the introduction.

Section 2 highlights Envision Durham policies for the 2051 Urban Expansion Areas and designations for the Brooklin Urban Expansion Area.

Section 3 summarizes technical background information to inform land use decisions for the Brooklin Urban Expansion Area.

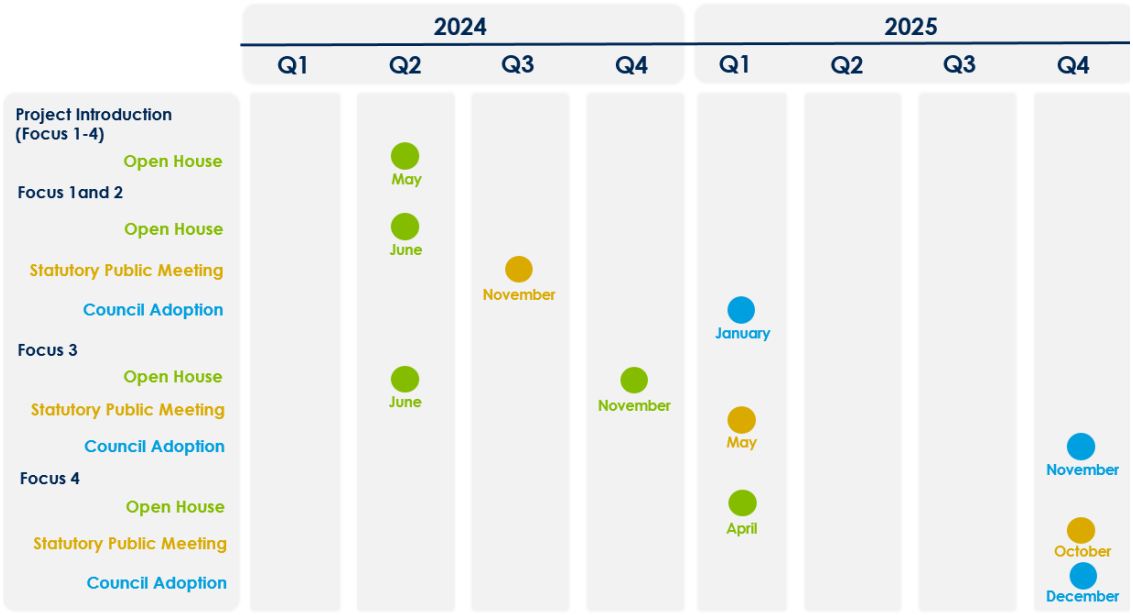
Section 4 presents and describes the land use alternatives regarding the Brooklin Urban Expansion Area.

Section 5 presents the evaluation criteria that will be used to evaluate the two Brooklin Urban Expansion Area land use alternatives in future stages of this project.

Section 6 provides next steps.

1.4 Project Schedule

The project schedule for all Focus Area OPAs is shown below.



2 Envision Durham



Envision Durham is the Region Official Plan (ROP) which was adopted by Region of Peel Council in May 2023 and approved by the Minister of Municipal Affairs and Housing in September 2024.

Envision Durham brought new lands into the Whitby Settlement Area or urban boundary around the Brooklin community as shown in **Figure 2**. These additional areas are intended to accommodate future growth to 2051 and will generally be developed after build out of the existing Brooklyn Secondary Plan. These areas will need to be designated for urban land uses through the Whitby Official Plan update.

Planning authority was removed from the Region of Durham on January 01, 2025, resulting in Whitby inheriting Envision Durham. The relevant policies of Envision Durham will be incorporated into the Whitby Official Plan through this Review.

2.1 2051 Urban Expansion Areas

Section 5.7 of Envision Durham sets out policies for Urban Expansion Areas, with the intent to ensure future decisions on land use, densities, development standards, impacts, infrastructure, servicing and financing are informed through comprehensive study, consultation and evaluation. Area municipalities are required to undertake detailed planning for lands within the 2051 Urban Expansion Areas, primarily through the preparation of secondary plans.

2.2 Designations in Envision Durham

As shown in **Figure 2**, Envision Durham designates a mix of Community Area and Employment Area, as well as a Regional Corridor within the Brooklin Urban Expansion Area. **Table 1** below summarizes each area, its size and designation.

Table 1. Brooklin Expansion Areas by Size and Designation

Area	Approx. Size (ha)	Designation
A1	140	Community Area with a Regional Corridor along Columbus Road.
A2	265	Employment Area with a Regional Corridor along Columbus Road.
B	170	Community Area with a Regional Corridor along Columbus Road
C	120	Community Area
D	20	Employment Area

Area	Approx. Size (ha)	Designation
E	20	Employment Area
F	7	Employment Area and a Regional Corridor along Highway 7
G	4	Employment Area
H	9	Employment Area
I	50	Community Area, with a Regional Corridor along Columbus Road.

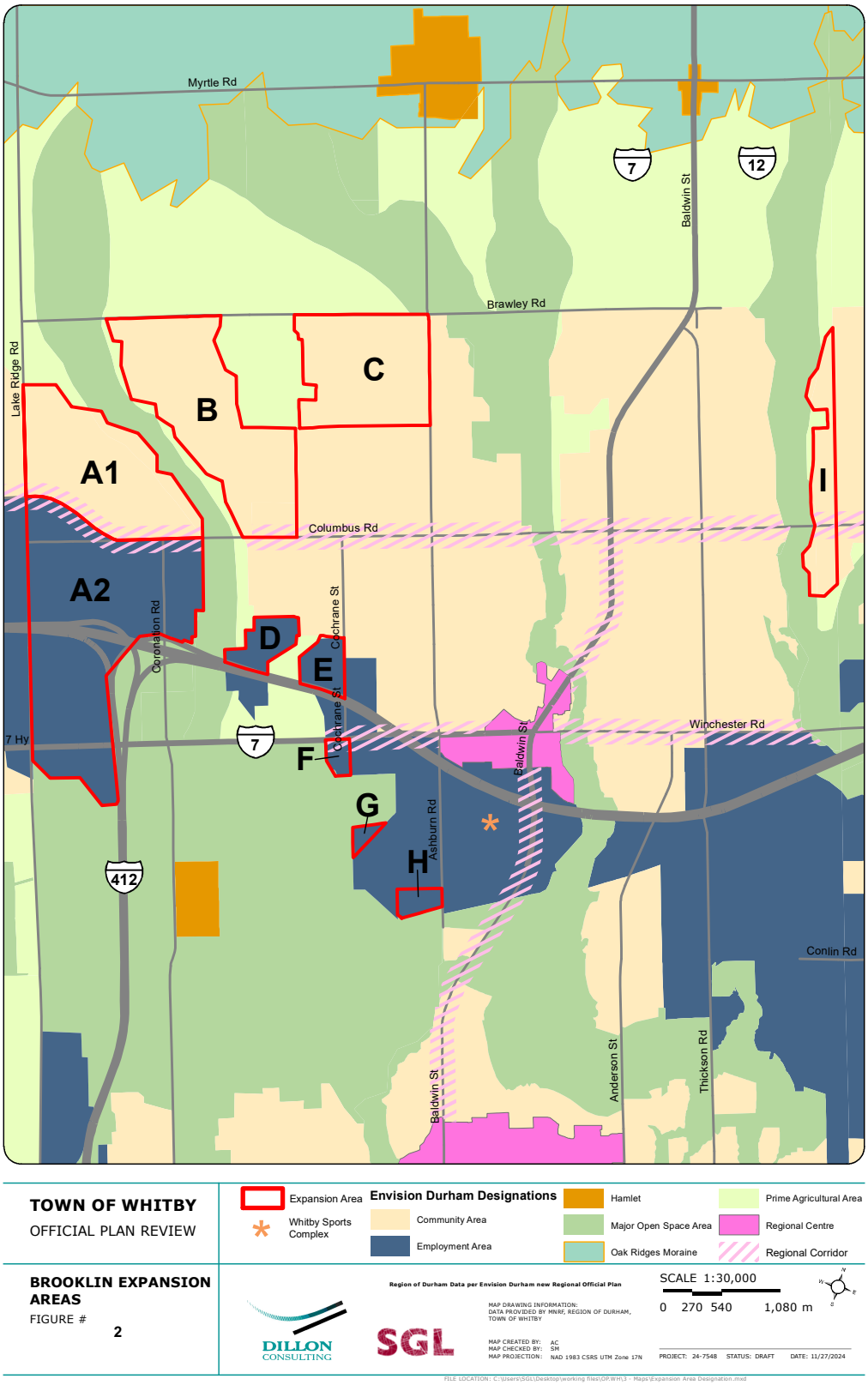


Figure 2: Brooklin Expansion Areas

3 Opportunities and Constraints



This section of this Report reviews opportunities and constraints for development of this Brooklin Urban Expansion Area that will inform the policies and land use designations applied to these new areas.

3.1 Existing Land Uses and Built Form

The following section discusses existing land uses within the Brooklin Urban Expansion Areas shown in **Figure 2** above.

Area A

Area A (Figure 3) is the largest of the expansion areas, at the eastern edge of Whitby. It is approximately 408 hectares in size. Highway 407 cuts east-west through **Area A** and Highway 412 is adjacent to its southeast portion. **Area A** is further divided into **Area A1** and **Area A2** as shown on **Figure 2** to align with the Envision Durham Community Area and Employment Area Official Plan Designations. **Area A1** is approximately 141.5 hectares and **Area A2** is approximately 267.6 hectares.

The majority of **Area A** appears to be cultivated land with limited natural areas. Other lands uses found in **Area A2 include**:

- A carpool parking lot at the northwest intersection of Highway 412 and Highway 7/Winchester Road W.;
- Rural residential properties on the west side of Coronation Road between Columbus Road West and Highway 407;
- A stormwater management pond southwest of the Highway 407 and 412 intersection;
- Scattered properties containing farms or rural residences south of Highway 7/Winchester Road and west and Highway 412; and
- A landscaping business on the east side of Halls Road North.

Apart from natural areas and cultivated lands and rural residences, uses adjacent to **Area A** include:

- A Montessori school on the west side of Lake Ridge Road, west of **Area A2**, south of Highway 7;
- The Watson's Glen Golf Club to the west of **Area A1** and Lakeridge Links Golf Club to the northeast of **Area A1**; and
- A large farm containing livestock to the east of **Area A1**, north of Columbus Road.

In 2021, Whitby Council endorsed a property at the southeast quadrant of **Area A2** at Highway 407 and Lake Ridge Road for a new hospital. Lakeridge Health subsequently announced the site as being the preferred location for a new full service hospital and ancillary uses, to be located within Durham Region. This site is located within **Area A2** and shown on **Figure 3** with a green star. The Official Plan update will need to determine the total land area needed for the hospital and the appropriate land use designation.

Currently Schedule K – Brooklin Community Secondary Plan identifies a Health Precinct Special Policy Area on the west side of Baldwin Street South, south of Highway 407. The existing policies[1] in the Whitby Official Plan related to the Health Precinct will be updated to reference, instead, the planned hospital site at Highway 407 and Lake Ridge Road.



Figure 3: Area A

[1] Currently Section 4.7.3.2.7 of the Whitby Official Plan and Section 11.5.21 of the Brooklin Secondary Plan.

Area B

Area B (Figure 4) is the second largest of the expansion area pockets, approximately 170 hectares in size. Lakeridge Links Golf Club is located in the northwest part of Area B. An estate lot subdivision is currently being developed within the golf course. There are a number of rural residences on the east and west sides of County Lane, north of Columbus Road West on large estate lots. The Spencer Community Centre is located at the northeast corner of Country Lane and Columbus Road West within the Greenbelt Plan. Area B also contains some cultivated lands.

Land uses abutting Area B include cultivated lands to the north, the existing Brooklin Secondary Plan to the south and southeast and natural areas within the Greenbelt Plan, as well as rural residential properties.

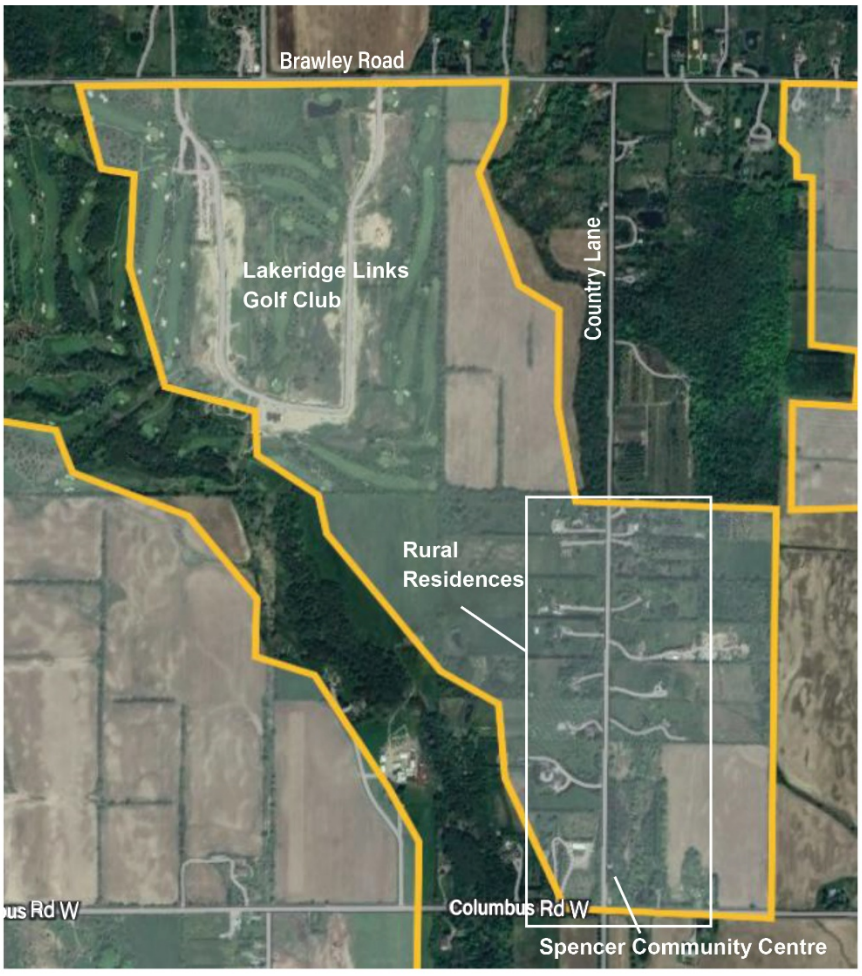


Figure 4: Area B

Area C

Area C (**Figure 5**)**,** approximately 120 hectares in size, includes rural residential and cultivated farm properties, along Brawley Road W, Cochrane Street and Ashburn Road. Lands adjacent to Area C on the north side of Brawley Road also include rural residential homes on large estate lots and farm properties including a livestock operation. The existing Brooklin Secondary Plan area is located to the south and east.

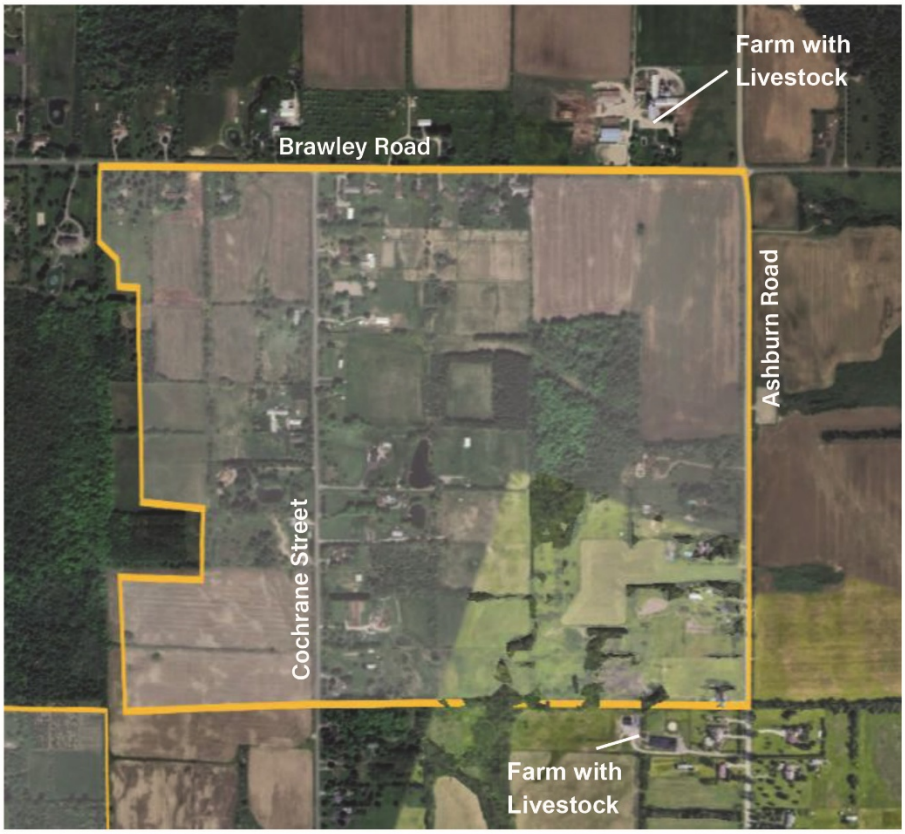


Figure 5: Area C

Area D

Area D (Figure 6), a little more than 20 hectares in size, includes four rural residences; two of which are part of farm operations. Adjacent, there are natural areas to the west of Area D within the Greenbelt Plan, the existing Brooklin Secondary Plan area to the north and East and Highway 407 to the south.

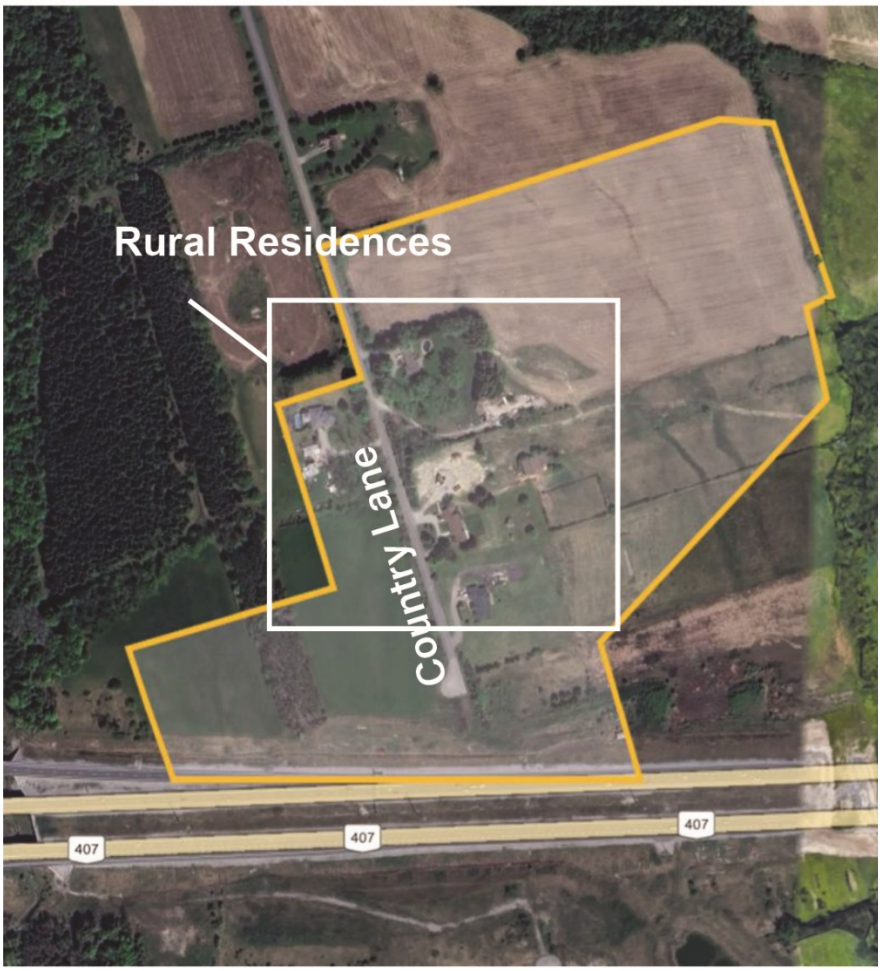


Figure 6: Area D

Area E

Area E (Figure 7), a little less than 20 hectares in size, includes a pond and cultivated farmlands. It abuts a stream corridor to the west and the Brooklin Secondary Plan to the north and east, and Highway 407 to the south.

These lands are currently owned by the Town of Whitby and Province of Ontario.



Figure 7: Area E

Area F

Area F (**Figure 8**) is approximately 7 hectares in size and contains cultivated farmlands, with Cochrane Street on the east side. It is surrounded by the Greenbelt Plan to the west and south and existing Prestige Industrial designated lands in the Brooklin Community Secondary Plan to the north and east. Area F was removed from the Greenbelt Plan Area in 2017, when the Greenbelt Plan was reviewed.



Figure 8: Area F

Area G

Area G (Figure 9) is approximately 4 hectares in size and located at the southern end of Cochrane Street. It contains cultivated farmlands. It is situated to the east of the North Whitby Off-leash Dog Park and the Heber Down Conservation Area, with additional cultivated farmlands within the Greenbelt Plan area to the north and the existing Prestige Industrial designated lands in the Brooklin Secondary Plan to the east and south. Area G was removed from the Greenbelt Plan Area in 2017, when the Greenbelt Plan was reviewed.

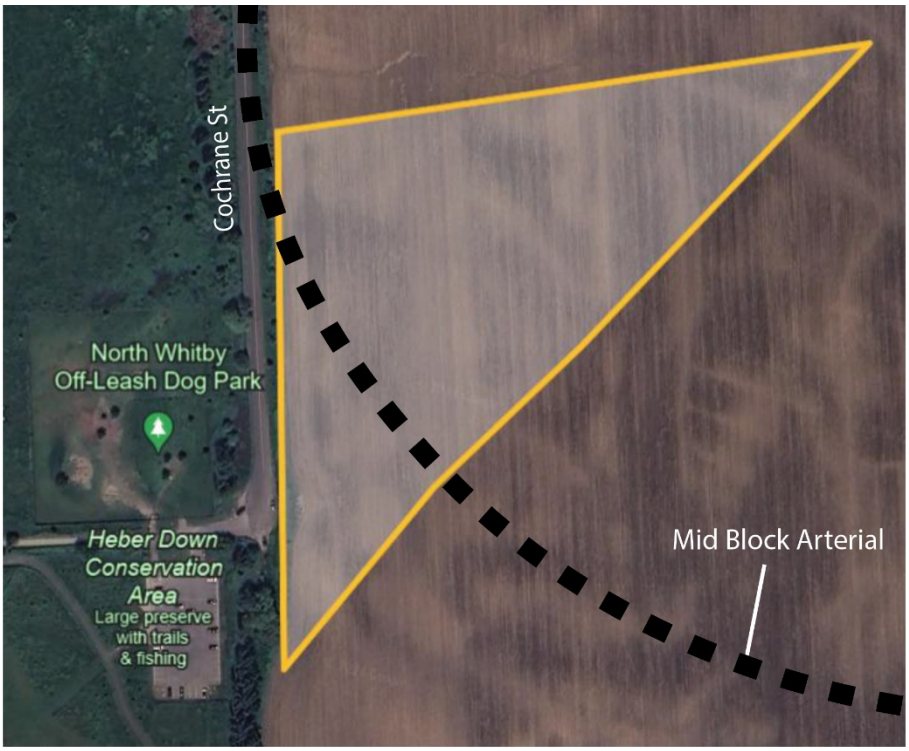


Figure 9: Area G

Area H

Area H (Figure 10), approximately 9 hectares in size, includes a rural residence and cultivated farmlands. It abuts cultivated lands to the south, and the existing General Industrial designated lands to the north and east and Prestige Industrial lands to the west of the Brooklin Secondary Plan area. Area H was removed from the Greenbelt Plan Area in 2017, when the Greenbelt Plan was reviewed.



Figure 10: Area H

Area I

Area I (Figure 11), a little less than 50 hectares in size, contains mostly cultivated lands. There are three rural residences on the south side of Columbus Road. It abuts natural areas to the west within the Greenbelt Plan, and urban designated lands within Oshawa to the east. The Town of Whitby will need to coordinate land use and transportation planning with the City of Oshawa when planning this area.



Figure 11: Area I

3.2 Transportation Analysis

The Brooklin Urban Expansion Area has been analyzed to identify constraints and opportunities for developing a multi-modal transportation network that is connected and conducive to moving people, with varying mobility needs, and goods. The following constraints and opportunities have been identified, as shown on **Figure 12**.

Constraints:

- Envision Durham and the current Whitby Official Plan show a proposed Columbus Road West realignment at Lake Ridge Road to connect to 7th Concession Road in Pickering. A future EA is required to confirm the future alignment and design characteristics.

- A proposed east/west collector in "Area C" south of Brawley Road between Cochrane Street and Ashburn Road is identified in the Whitby Official Plan Schedule D – Transportation based on previous planning and transportation work. More recent transportation work done for the Brooklin Secondary Plan and as part of the Brooklin North Major Roads EA has removed this east/west facility due to the environmental constraints (e.g. crossing 5 tributaries of Lynde Creek). Future secondary plan work will need to identify the road network to support land uses in this area.

- A proposed east/west collector north of Columbus Road just east of Cedarbrook Trail (crossing the pipeline corridor) is identified in the Whitby Official Plan Schedule D – Transportation. This corridor is identified in the Brooklin North Major Roads EA as a long-term need. The timing of the connection will be determined at a future date, following the completion of other network improvements, including the widening of Columbus Road.

- Significant Natural Heritage Systems and Natural Hazards will make new road alignments and construction challenging within the urban expansion areas.

Opportunities:

- Realignment of Thickson Road and modifications to the connections / intersection of Brawley Road/Thickson Road/Baldwin Street are being reviewed, including the potential for a roundabout.

- Columbus Road West realignment at Lake Ridge Road to connect to 7th Concession Road or future new infrastructure in Pickering.

- Highway 407 partial interchange at Cochrane Street.

- Construct Coronation Road to a Type B Arterial Road between Des Newman Boulevard, from north of Taunton Road to Columbus Road.

- New/improved transportation connections will be considered through the Region's Transportation Master Plan (to be completed in 2027) exercise and will include coordination with neighbouring municipalities.
- Arterial road extension of Coronation Road from Columbus Road to Brawley Road.
- Arterial extension of Carnwith Drive West (connection to Area A, D and E).
- Arterial extension of Carnwith Drive East (connection to Area I) into Oshawa.
- Arterial extension / connection of Brawley Road to Howden Road (in Oshawa).
- Grade separated crossing of Garrard Road over Highway 407 and connection to Cachet Boulevard at Winchester Road.
- Upgrade Garrard Road to a Type C Arterial between Kent Mills Road (previously referred to as the Mid-Block Arterial) and Winchester Road.
- Upgrade of Highway 7 and Winchester Road to a Type A Arterial.
- Mid-Block arterial extension to Oshawa.

3.3 Servicing Analysis

As part of the servicing analysis, consultation with Region of Durham staff was conducted to identify opportunities and constraints, as they related to water and wastewater servicing for the Brooklin Expansion Area. Although detailed servicing work is not available at this time, Regional staff have noted that it is expected that the Brooklin Expansion Area will be serviceable and that logical extension of servicing from the existing urban area will be provided. Now that the Province has approved Envision Durham, the Region will initiate a new master servicing plan and a new Development Charges (DC) Background Study to identify and plan for required municipal servicing.

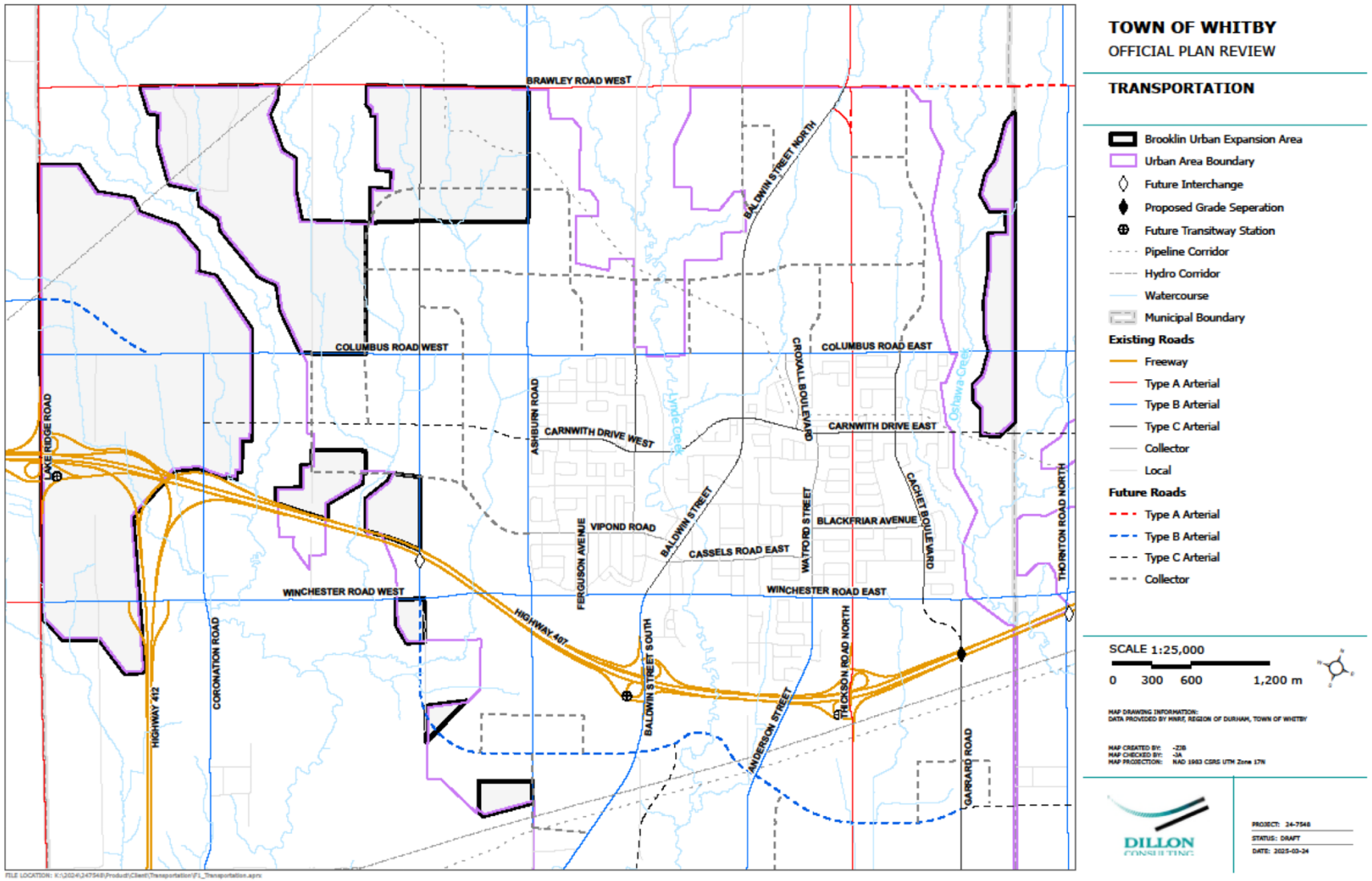


Figure 12: Transportation Constraints and Opportunities in the Brooklin Expansion Area

3.4 Natural Heritage Analysis

Dillon undertook a desktop review of policies and mapping of natural heritage features and the natural heritage system (NHS) within the Brooklin Expansion Area. This review can be found in a technical memo in **Appendix A**. This memo does not provide recommendations on new policy but rather reviews the policy in place to identify the key natural heritage considerations needed when planning for growth within the Brooklin Expansion Area. Overall, the result of this review shows that the natural heritage system within the Town's OP is generally up to date and would be applicable to the Brooklin Expansion Area.

A review of available Central Lake Ontario Conservation (CLOCA), Ministry of Natural Resources (MNRF) Land Information Ontario (LIO) data and Natural Heritage Information Centre (NHIC) mapping (as shown on **Figure 13)** identified that many watercourses transverse the Brooklin Expansion Area parcels; the related CLOCA regulation limits associated with these features can also be seen on this figure. Furthermore, pockets of woodland and open water features are found in some of the Brooklin Expansion Area parcels; no Provincially Significant Wetlands (PSW) or Areas of Natural and Scientific Interest (ANSI) were identified. Another note of interest is that the MNRF's Natural Heritage System (NHS) layer does not overlap with any of the areas.

The current Whitby Official Plan natural heritage policies are generally suitable for the Brooklin Urban Expansion Area. However, recent changes to the Ontario Wetland Evaluation System (OWES; 2022) specify that wetland identification and protection is to be done in consultation with the applicable Municipality rather than the MNRF and/or the Conservation Authority (except when within regulated areas). Furthermore, through the OWES update, "locally significant wetlands" and "wetland complexing" are no longer considered. Therefore, policies will need to be reviewed and changes considered.

Furthermore, the references to certain agencies that are to be consulted during the development process are now outdated. For example, the Ministry of Natural Resources and Forestry does not regulate drainage features and is not required to be consulted for these feature removals.

The technical memo in **Appendix A** also identifies Envision Durham policies that could be considered when developing Whitby OP policies for Brooklin Expansion Area.

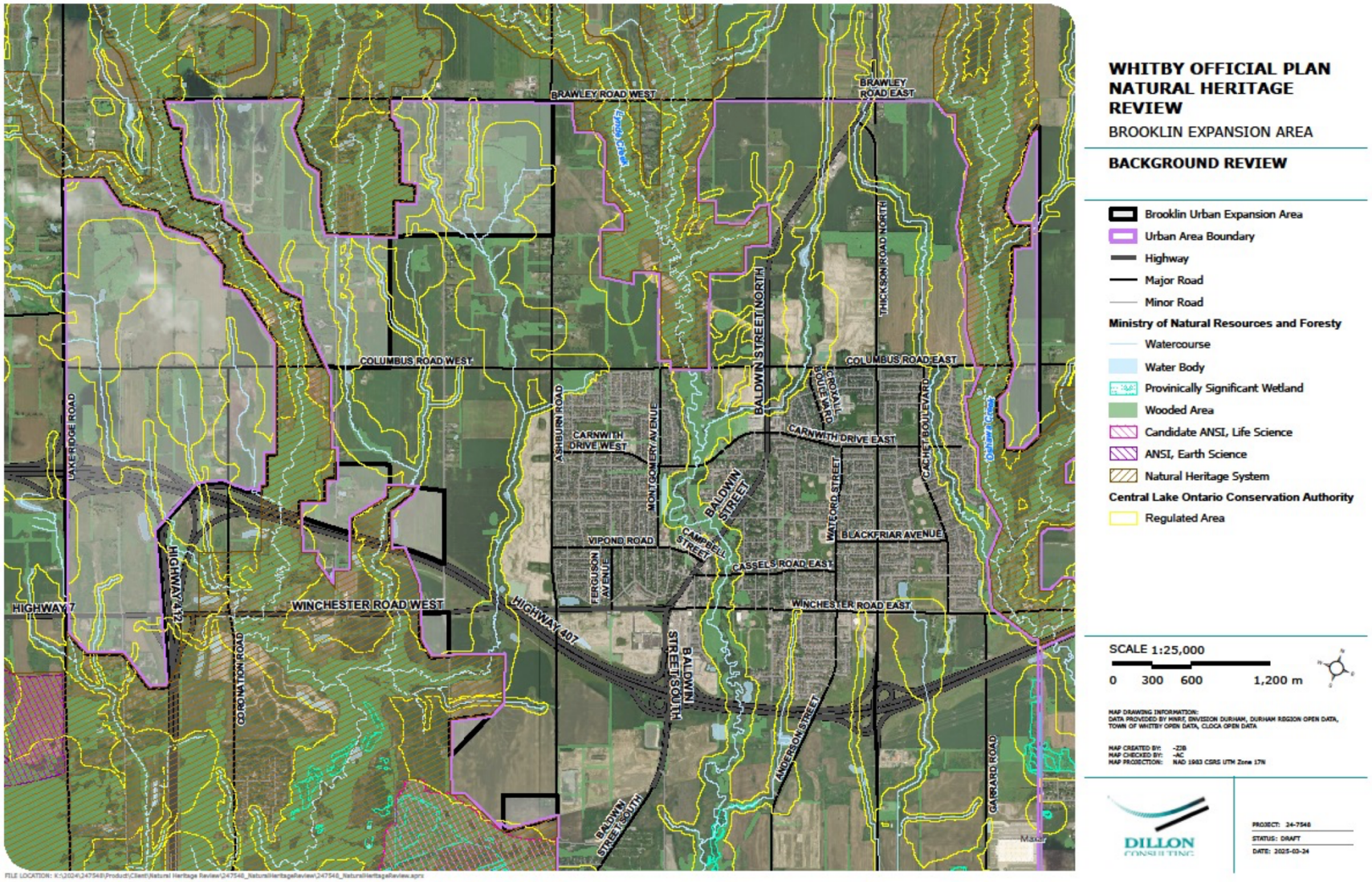


Figure 13: CLOCA, MNRF LIO data and NHIC mapping in Brooklin Expansion Area

3.5 Cultural Heritage

Figure 14 shows cultural heritage sites that have been identified in and around the Brooklin Expansion Area from previous studies. Yellow pins were identified by Unterman McPhail Associates in their Cultural Heritage Technical Report prepared in 2019. Details of the sites, are provided in **Appendix B.**

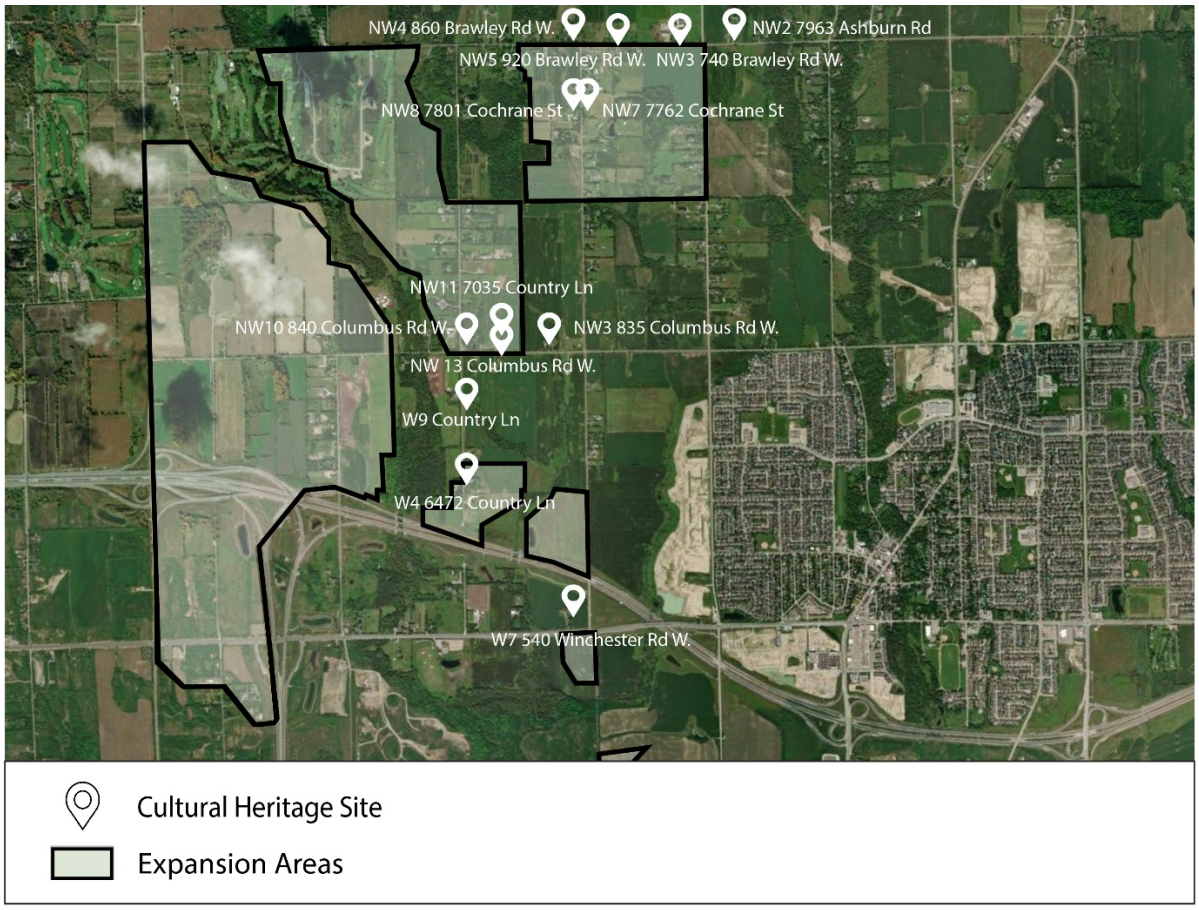


Figure 14: Cultural Heritage Sites within and Near the Brooklin Expansion Area

4 Land Use Alternatives



Two Land Use Alternatives have been prepared for the Brooklin Expansion Area as shown in **Figure 18** and **19**. The alternatives use the land use designation categories from the Brooklin Secondary Plan. This chapter explains the common elements found in both alternatives and then describes transportation network and land use arrangement proposed in each of the two alternatives.

4.1 Common Elements and Baseline Assumptions

The common elements and baseline assumptions explained in this section were considered in the development of the Land Use Alternatives and are consistent between the two alternatives.

Density

Both of the Land Use Alternatives plan for a minimum gross density of 65 residents and jobs per hectare which exceeds the minimum target in Envision Durham, with similar overall densities provided in each of the land use designations.

Corridors

Both Land Use Alternatives reflect the delineation of a Regional Corridor/Intensification Corridor along Columbus Road, per Envision Durham and the Whitby Official Plan, respectively. Regional Corridors are to provide for residential and mixed-use development with a wide array of uses, to achieve higher densities and transit-oriented development.

The proposed land uses along the Columbus Road corridor are approximately 100 metres deep in each of the Land Use Alternatives which is similar to the depths in the Brooklin Secondary Plan and provides for approximately a depth of three lots.

Land Use: Envision Durham

As per Envision Durham, the Brooklin Urban Expansion Area is generally planned to be a residential community north of Columbus Road and plans for employment uses to the south of the roadway.

Abutting Land Uses: Brooklin Community Secondary Plan Area

Both Land Use Alternatives show the planned land use framework and road network in the abutting Brooklin Community Secondary Plan.

Roads

Existing roads and currently planned roads are shown in the two Land Use Alternatives. Proposed new arterial and collector roads are illustrated with different line work in the Land Use Alternatives.

Natural Heritage System

The Natural Heritage System, primarily made up of the natural features and their associated buffers, are the same in the two Land Use Alternatives, based on the existing delineation of features in the current Official Plan. In total, 135 hectares of the Brooklin Expansion Area are within the Natural Heritage System. No development, with the exception of trails, erosion control or stormwater management features or similar features, would be permitted in these areas.

Servicing

Both Land Use Alternatives will be required to be serviced to provide sufficient water operating pressures and fire flows, as well as a sufficient sanitary network to accommodate future development. Such elements are not evaluated in the criteria.

Whitby Hospital

Both Land Use Alternatives identify the proposed hospital location southwest of the Highway 407/412 interchange.

Existing Estate Residential

Both Land Use Alternatives show the estate residential development currently being built within the Lakeridge Links Golf Club.

4.2 Land Use Categories

The land uses in the two Land Use Alternatives are based on the designations in the existing Brooklin Secondary Plan of the Whitby Official Plan.

Low Density Residential

The Low Density Residential areas would permit single detached dwellings, semi-detached dwellings, townhouses and other similar built forms with a minimum density of 25 units per hectare (uph) and maximum density of 35 uph. The maximum height in these areas would be three (3) storeys.



Figure 15 Example of Low Density

Medium Density Residential

The Medium Density Residential areas would permit a range of medium density house forms, such as fourplexes, townhouses in multiple forms (traditional, stacked, back to back etc.), as well as low rise apartment buildings up to four (4) storeys. The designation would have a minimum density for these areas of 30 uph and maximum density is 65 net uph. A minimum density of 50 uph and a maximum density of 80 uph would apply along Columbus Road due to the Regional Corridor designation.

Both Land Use Alternatives provide approximately 81 hectares of Medium Density Residential, in different locations.



Figure 16 Examples of Medium Density

High Density Residential

The High Density Residential areas would permit a range of townhouse types, apartments and other forms of multiple dwellings, with heights of up to eight storeys.

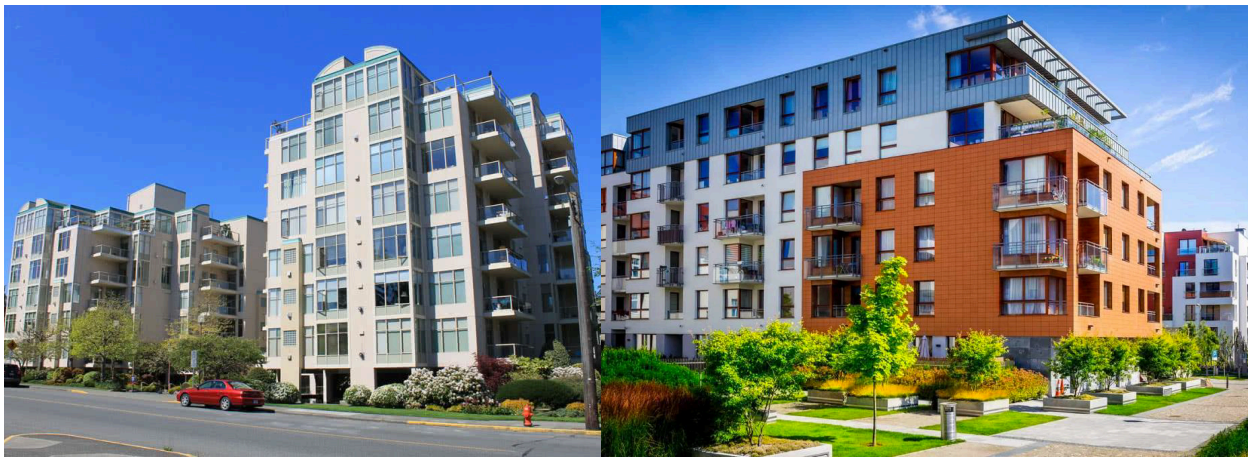


Figure 17 Examples of High Density

Both Land Use Alternatives provide approximately 12 hectares of High Density Residential, in different locations.

Mixed Use

The mixed use areas shall permit a combination of residential and non-residential uses. Both Land Use Alternatives provide approximately 11-12 hectares of mixed use development, in different locations.

Local Commercial

Local Commercial is proposed in each Land Use Alternative. It is intended to provide a central location for retail and service uses meeting local residents' daily needs. The locations provide the opportunity for residents to walk or bike to the node for daily needs and helps to create a more sustainable network. Both Alternatives include Local Commercial areas totaling seven (7) hectares in different locations.

Schools

Based on initial population assumptions, there is estimated to be a need for four (4) elementary schools; three (3) public elementary schools and one (1) separate elementary school. As well, there is an identified need for one (1) public secondary school. The school boards require school site sizes to be 3.2 hectares for public elementary schools, 2.4 hectares for the separate elementary school, and seven (7) hectares for the public secondary school.

Note, the school needs assumptions are preliminary and based on a high level analysis for the purposes of the preparation of, and evaluation of, the Alternatives. During the preparation of the Preferred Alternative, later in this Study, a more detailed analysis will be undertaken based on the final land use mix/densities. As such, the total number of and breakdown of school types may differ between the Alternatives presented in this Report and those in the final Preferred Plan prepared during future phases of this Study.

Parks

Local Parks are intended to provide both active as well as passive recreational amenities in order to serve the needs of the immediate neighbourhood. Facilities may include "sports fields, landscaped areas, walkways, ball courts, playgrounds, community gardens and similar facilities". In both Land Use Alternatives, a number of Local Parks are contemplated with each park being approximately 1.5 hectares in size.

District Parks serve the broader community or a number of neighborhoods by providing "primarily active recreation areas with illuminated major sports fields and facilities, recreation/community centres, ball courts, playgrounds, community gardens, landscaped and passive recreation areas, and parking areas." In the land use alternatives, one District Park is planned and will be approximately 4 hectares.
The Land Use Alternatives provide the same overall quantum of park land to be developed, totaling 17.5 hectares, while the location of parks differs by Land Use Alternative, as described further under each Land Use Alternative.

Note, the parkland needs assumptions are preliminary and based on a high level analysis for the purposes of the preparation of and evaluation of the Alternatives. During the preparation of the Preferred Alternative, later in this Study, a more detailed analysis will be undertaken based on the final land use mix/densities and other parks planning considerations set out by the Town Parks and Recreation Master Plan. As such, the total land area, breakdown, number and nomenclature of parks could differ between the Alternatives presented in this Report and those in the final proposed Official Plan Amendment.

4.3 Land Use Alternative 1

This section describes Land Use Alternative Number 1 ("Alternative 1"), shown in **Figure 18**.

Alternative 1 is designed with a focus on corridors where key components of activity and density are located along major roads. In this alternative, High and Medium Density Residential designations, as well as the Mixed Use designation, are located along both Columbus Road West and Lake Ridge Road North. Additional medium density and Local Commercial areas are planned along other arterial and collector roads.

Low Density Residential

In Alternative 1, the Low Density Residential land use is located throughout the Brooklin Urban Boundary Expansion Areas.

Medium Density Residential

In Alternative 1, the Medium Density Residential land use is primarily located along corridors including Lake Ridge Road, Coronation Road and Ashburn Road, as well as along a proposed new east-west collector road north of the Columbus Road West and a proposed new east-west collector road which extends from Coronation Road to Lake Ridge Road.

High Density Residential

The High Density Residential land use is concentrated along Columbus Road West, which is a Regional Corridor, as well as a pocket on Lake Ridge Road North.

Mixed Use

The Mixed Use land use is concentrated along Columbus Road West adjacent to higher density areas, including at the intersection of Lake Ridge Road North and Columbus Road West.

Local Commercial

Four Local Commercial areas are located at collector and arterial road intersections to enhance walkability to commercial services. One of the Local Commercial areas is located on Columbus Road at the eastern boundary of Whitby.

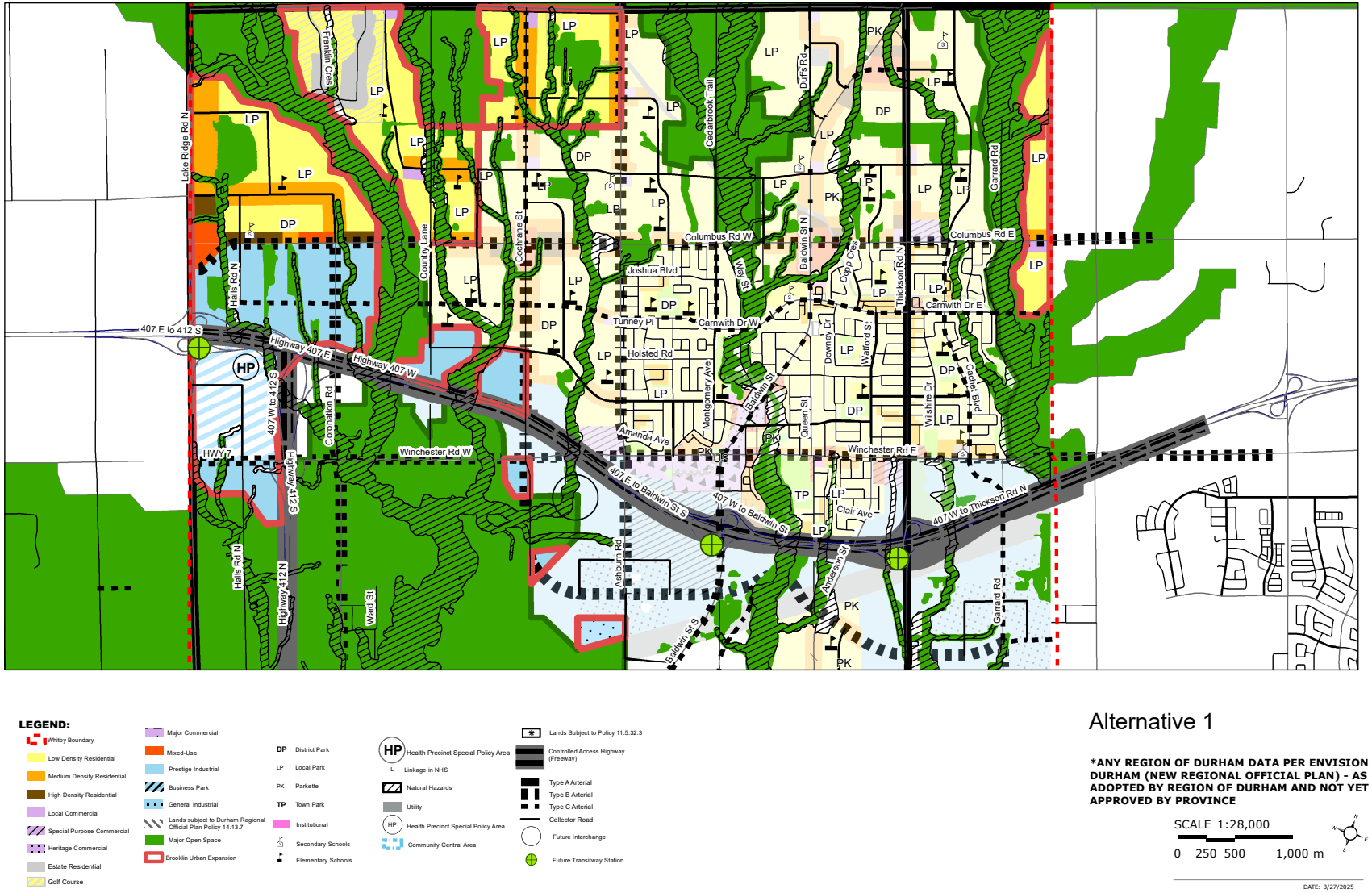


Figure 18: Alternative 1

Schools

Alternative 1 shows four elementary schools located on collector and Type C arterial roads, as follows:

- One school is centrally located at the intersection of two proposed collector roads north of Columbus Road West and east of Lake Ridge Road;
- A second school is located on the south side of the proposed east-west collector road;
- A third school is located near the existing the Lakeridge Links Golf Club on a north-south collector road; and
- A fourth school is on the west side of Cochrane Street about midway between Columbus Road West and Brawley Road West.

One secondary school is located at the corner of Halls Road North and Columbus Road West.

Parks and Open Space

There are nine local parks, and one district park planned within the Brooklin Expansion Area. The district park is located west of Coronation Road and north of Columbus Road West adjacent to the secondary school, with the local parks distributed throughout the Brooklin Expansion Area and adjacent to schools where developable areas are large enough to accommodate adjacent schools and parks.

Alternative 1 assumes the existing golf course will be redeveloped for residential uses.

Transportation

Arterial Roads

In addition to the existing road network, Alternative 1 proposes to realign Columbus Road West where it meets the City of Pickering to align with one of the road options being considered by the City of Pickering in its Northeast Pickering Secondary Plan study.

An extension of Carnwith Drive is also proposed to Halls Road North.

Collector Roads

Two of the east-west planned collector roads in the existing Brooklin Community Secondary Plan area are proposed to be extended west into the Brooklin Urban Expansion Area, one of them to connect to Cochrane Street and the other to curve north to connect to Brawley Road West near the existing golf course.

Two new collector roads are proposed to connect Coronation Road and Halls Road to Lake Ridge Road.

A collector road connection between Halls Road North and Lake Ridge Road North is planned south of the 407.

Estimated Density, Units, Population and Jobs

Table 2 describes the land areas and projected units, population and jobs that could arise from Alternative 1. This Alternative results in an approximate density of 22 units per hectare and 65 persons and jobs per hectare.

Table 2: Approximate Land Area, Units, People, and Jobs for Land Use Alternative 1

Land Use Alternative 1 - Community Areas				
	Area (ha)	**Units**	**People**	**Jobs**
Low Density Residential	234.7	4,370	15,340	
Medium Density Residential	80.4	3,210	7,860	
High Density Residential	11.7	775	1,030	
Mixed Use	11.6	575	770	375
Local Commercial	6.9			375
School	18.1			450
Parks	17.5			
Estate Residential	21.8	0	100	
Total	402.7	8.958	25,100	1,200
		Units per hectare	**People and jobs/hectare**	
Approximate Density		22	65	

4.4 Land Use Alternative 2

This section describes Land Use Alternative Number 2 ("Alternative 2"), shown in **Figure 19**.

Alternative 2 is designed with a focus on nodes, where there are clusters of higher density uses and amenities located at collector and arterial road intersections.

Low Density Residential

In Alternative 2, the Low Density Residential is distributed throughout the Brooklin Urban Expansion Area, outside of the nodes.

Medium Density Residential

The Medium Density Residential land use is located primarily in clusters at intersections, except where it follows the length of Columbus Road West and Lake Ridge Road North.

High Density Residential

The High Density Residential land use is concentrated in the western portion of the Brooklin Expansion Area at intersections with Lake Ridge Road North, Columbus Road West, and the extension of Halls Road North.

Mixed Use

The Mixed Use designation is concentrated along road intersections adjacent to Medium and High Density Residential areas, including at the intersections of Lake Ridge Road and a proposed collector road, Lake Ridge Road and Columbus Road, Coronation Road and Columbus Road, Cochrane Street and a proposed collector road, and Ashburn Road and a proposed collector road.

Local Commercial

Five Local Commercial areas are located near High Density or Medium Density Residential uses at road intersections including Halls Road North and a proposed collector road, Halls Road North and Columbus Road, Country Lane and a proposed collector road, Cochrane Street and a proposed collector road, and Cochrane Street and Brawley Road West.

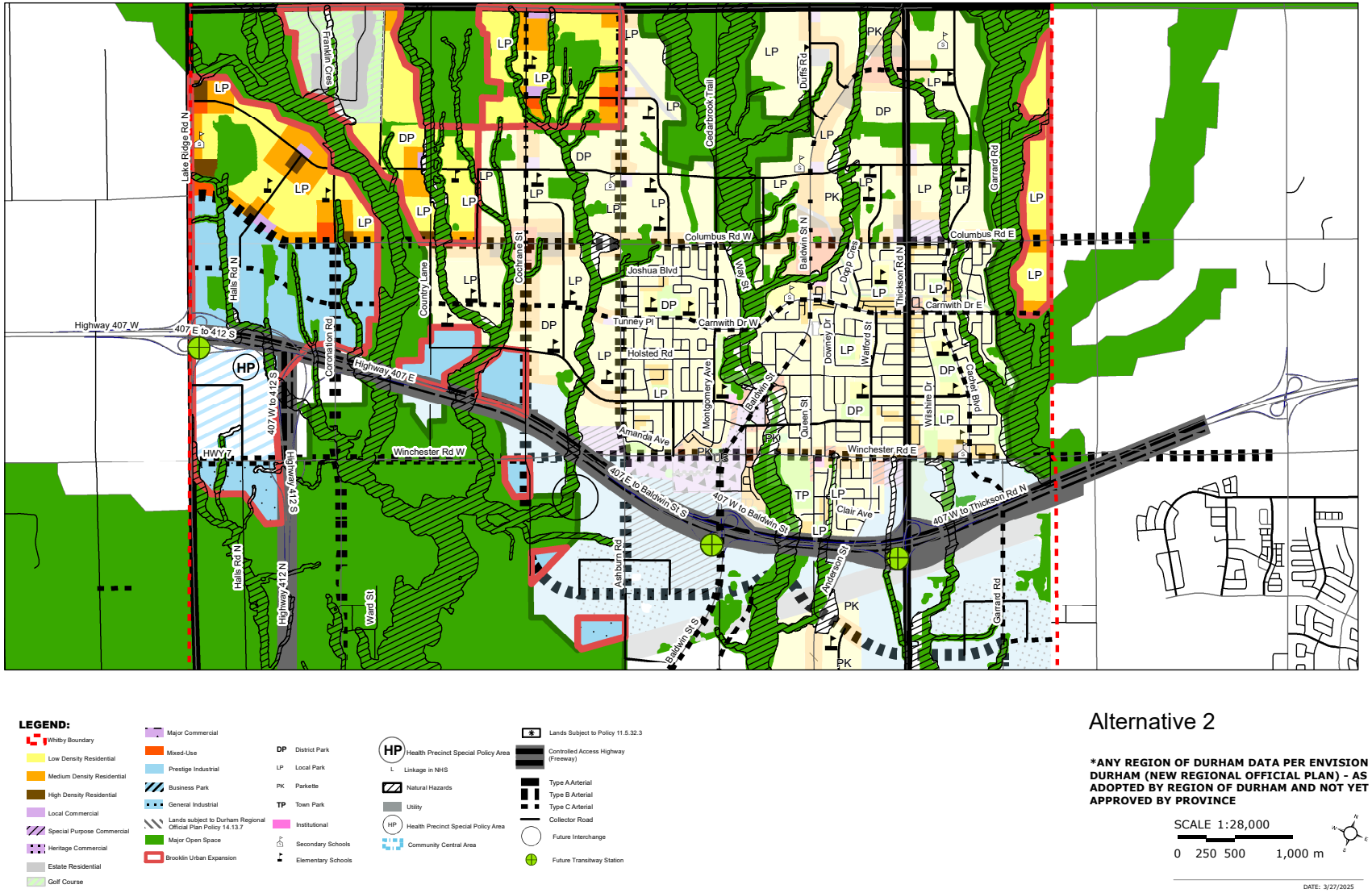


Figure 19: Land Use Alternative 2

Schools

Alternative 2 shows four elementary schools located in the Brooklin Urban Expansion Area, as follows:

- One school is located on the west side of Halls Road North, north of Columbus Road West;
- A second school is located on the west side of Coronation Road, north of Columbus Road West;
- A third school is located east of Country Lane, on the south side of a proposed east-west collector road; and
- A fourth is located on the east side of Cochrane Street, south of Brawley Road West.

One secondary school is located along the east side of Lake Ridge Road North, north of Columbus Road West.

Parks and Open Space

There are nine local parks, and one district park planned within the Brooklin Expansion Area. The District Park is located west of Country Lane, with the local parks distributed throughout the Brooklin Expansion Area generally adjacent to elementary schools where possible.

Alternative 2 maintains the majority of the existing golf course as a golf course with some redevelopment to residential on the west side of the Greenbelt Plan.

Transportation

Arterial Roads

In addition to the existing road network, Alternative 2 proposes to connect Columbus Road to 7th Concession Road in Pickering (to the west). It also proposes to connect Carnwith Drive West all the way to Lake Ridge Road.

Collector Roads

In Alternative 2, two of the east-west collector roads planned in the Brooklin Community Secondary Plan are proposed to be extended west into the expansion area, one of them to connect to Cochrane Street and the other to connect to Lake Ridge Road. Halls Road is also extended and bended to link up to one of the aforementioned east-west collector roads.

A collector road connection between Halls Road and Lake Ridge Road is planned south of the 407.

Estimated Density, Units, Population and Jobs

Table 3 describes the land areas and approximate projected units, population and jobs that could arise from Alternative 2. This Alternative results in an approximate density of 23 units per hectare and 65 persons and jobs per hectare.

Note, for the purpose of the comparison with Alternative 1, the table below does not include the existing golf course in the calculations.

The overall land areas differ between Alternative 1 and 2, due to the difference related to the treatment of golf course between the options, as well as the difference related to the Columbus Road alignment, which changes the divide between employment and community areas, and thus the size of the community area.

Table 3: Land Area, Units, People, Retail Floor Area and Jobs for Land Use Alternative 2

Land Use Alternative 2 - Community Areas				
	Area (HA)	**Units**	**People**	**Jobs**
Low Density Residential	176.2	3,280	11,520	
Medium Density Residential	80.2	3,200	7,840	
High Density Residential	11.2	750	990	
Mixed Use	11.1	560	740	360
Local Commercial	6.7			360
School	18.1			450
Parks	17.5			
Estate Residential	21.8	28	100	
Total	**342.8**	**7,818**	**21,190**	**1,170**
		Units per hectare	**People and jobs/hectare**	
Approximate Density		203	65	

5 Evaluation Criteria and Measures



Evaluation criteria and measures were prepared to guide the evaluation of the two Land Use Alternatives for the Brooklin Urban Area. The criteria and measures reflect the findings of the background reports, requirements of Official Plan policies and consideration of guidelines and best practices. The criteria and measures are used to determine what elements of each Land Use Alternatives are preferred and should be included in the Preferred Land Use Plan.

5.1 Evaluation Criteria and Measures

The following evaluation criteria are organized under key study principles:

Principle: Traffic Management

Criteria:

- Impact on the operation of existing and future transportation network.
- Ability to accommodate other modes to reduce vehicle congestion.
- Intersection spacing on arterial roadways, to allow for full movement access and/or potential signalization.

Principle: Mobility with Choices

Criteria:

- Ability to support alternate modes.

Principle: Connectivity

Criteria:

- Elementary Schools are centrally located.
- Access to Secondary Schools by multiple modes.
- Connectivity across Greenbelt.

Principle: Healthy Living

Criteria:

- Safe and walkable distances to parks.

Principle: Green Space and Natural Areas

Criteria:

- Least potential to negatively impact natural systems.
- Least potential to negatively impact the linkage function of natural features.

Principle: Jobs

Criteria:

- Provides a diverse range of employment opportunities.
- Desirable employment area location.

Principle: Community and Culture

Criteria:

- Provides centrally located public meeting places and uses that can create place identity/sense of place.
- Provision of appropriate number and location of schools.

Principle: Housing Choice

Criteria:

- Offers diverse housing mix.

Principle: Neighbourhood Character and Design

Criteria:

- Ability to deliver a full range of housing typologies within a neighbourhood.

Principle: Urban Structure

Criteria:

- Ability to create viable focal points.

5.2 Evaluation Matrix

The evaluation matrix in **Table 5** summarizes the evaluation of the two Land Use Alternatives against the criteria and measures. The evaluation matrix describes the detailed analysis and the rationale for which elements to include in the Preferred Land Use Plan. The Preferred Land Use Plan is not expected to be one of the two Land Use Alternatives, but rather a combination of the most preferred elements of each of the two

alternatives and could include additional elements considered through the engagement process.

The evaluation matrix in **Table 5** illustrates which element of each Land Use Alternative best achieves the measures through the following symbology:

- Least Preferred
- Moderately Preferred
- Most Preferred

Table 5: Brooklin Expansion Area Alternatives Evaluation

Study Principle: Traffic Management

Criteria a) Impact on the operation of existing and future transportation network

Measure	Alternative 1	Alternative 2	Preferred Option
The location of higher-density residential areas and commercial areas is such that trips generated by these developments are balanced across the road network to reduce the likelihood for high-congestion (i.e., bottleneck) areas.	All three of the High-Density Residential areas and the two mixed use nodes identified within the Secondary Plan Area are located along two intersecting arterial roadways (Lake Ridge Road and Columbus Road). This option consolidates the largest trip generators and as such will have the most impact on the road network. This impact will be made worse by the lack of an east/west crossing of the environment corridor north of Columbus Road. ○	The five High-Density Residential areas and the nine commercial / mixed use nodes identified within the Secondary Plan Area are distributed along a number of arterial and collector roads (Lake Ridge Road, Columbus Road, Ashburn Road, Cochrane Street and Proposed East/West Collector). This option more evenly distributes the largest trip generators which will also distribute the traffic volumes across the available roadways. However, small nodes at intersections will have restricted vehicular access. The distribution of traffic volumes will be further improved by the additional east/west crossing of the environment corridor (Proposed East/West Collector) north of Columbus Road. ●	Option 2 is preferred. It has a greater number and better distribution of High Density Residential, and Commercial and mixed use Nodes.
Mixed-use development and more dense land use can better support transit and active transportation use.	Linear higher density residential development along collector and arterial roads supports transit usage, circulation, and bus route coverage along these corridors. This Option concentrates more development along the major roads within the Secondary Plan Area, which can be expected to better support transit ridership along these corridors. ●	Targeted development at each of the nine commercial/ mixed use nodes with a mix of Medium and High Density Residential, support transit usage and the development of key hubs of transit activity. More dense nodes may serve as the anchors of a higher quality and more frequent transit service in West Brooklin. ●	There is no significant difference between the options on this measure. Smaller clusters of higher density residential and mixed use and higher density residential and mixed use along the Regional corridors are both preferred.

Measure	Alternative 1	Alternative 2	Preferred Option
Orientation of Columbus Road.	Columbus Road alignment to the south to align with the proposed new arterial road in Pickering. ○	Columbus Road alignment to the north to meet with the 7th Concession Road. ●	Option 2 is preferred. Option 2 provides greater separation between the Type B Arterial intersection of Columbus Road and Lake Ridge Road and the Highway 407 interchange. Option 2 also provides Carnwith Drive (an east-west Type C Arterial) and its surrounding Prestige Industrial land use with a direct connection to Lake Ridge Road. Option 2 provides better overall east-west multi-modal connectivity and redundancy. Option 2 also maximizes the amount of employment lands.

Criteria b) Ability to accommodate other modes to reduce vehicle congestion

Measure	Option 1	Option 2	Preferred Option
Ability to provide a greater population located within 800 m of commercial uses to allow for walking and cycling and reduce the need for auto trips.	There is 3.25 ha of Mixed Use and High Density Residential area within 800 m of commercial uses. Moderate density development concentrated around commercial uses has the potential to support active transportation and the reduce need for auto-based commuting by locating more residents, jobs, and destinations within walking distance of each other along each major road corridor. ◐	There is 18 ha of Mixed Use and High Density Residential area within 800 m of commercial uses. More dense development concentrated around commercial uses has the greatest potential to best support active transportation and the reduce need for auto-based commuting by locating more residents, jobs, and destinations within walking distance of each other along each major road corridor. ●	Option 2 is preferred. It provides the greatest ability to serve residents within walking distance of a commercial use.
Location of Secondary school is centrally located.	The secondary school is located along an arterial road (Columbus Road) at the intersection of a collector road. It is located on the western side of the expansion area. ◐	The secondary school is located along an arterial road (Lake Ridge Road) at the western edge of the expansion area and not central to any development. ○	The public secondary school is not centrally located in either option. However, Option 1 is most preferred as the secondary school is located within closer proximity to the new community area and provides a good separation from the proposed high school on Ashburn Road. The final location will be determined through discussions with the Durham District School Board.

Criteria c) Intersection spacing on arterial roadways to allow for full movement access and/or potential signalization

Measure	Option 1	Option 2	Preferred Option
Spacing of intersections along arterial roads should meet the requirements of Durham Region and MTO, as applicable[2]. [2] Minimum Intersection Spacing per Durham Region Official Plan (2023), Table 5 - Arterial Road Guidelines: Type A Arterial: 700 m intersection spacing in north-south direction; 500m* intersection spacing in east-west direction; Type B Arterial: 525 m intersection spacing in north-south direction; 500m* intersection spacing in east-west direction; Type C Arterial: 300 m intersection spacing; *In some cases, spacing for east-west arterials can be reduced to 300 m if signals are "coupled" provided adjacent intersections are a minimum of 500m away.	<u>Lake Ridge Road (Type B Arterial):</u> Intersection spacing of the east/west collector and arterial roads that intersect with Lake Ridge Road do not meet intersection spacing requirements identified by Durham Region (Type B Arterial in the north-south direction – 525 m) or MTO (400 m). Spacing between the proposed east-west collector road / 7th Concession Road & Lake Ridge Road intersection north of Columbus Road and the Columbus Road & Lake Ridge Road intersection is approximately 650m, and then approximately 350m to the next intersection to the south (Highway 407 westbound off-ramp). The Columbus Road & Lake Ridge Road intersection shifting to the north by 50m will satisfy MTO minimum 400m spacing. Spacing between the proposed east-west collector road & Lake Ridge Road intersection south of the Highway 407 and the Highway 407 eastbound off ramp & Lake Ridge Road intersection is approximately 300m, and then approximately 600m to the next intersection to the south (Winchester Road). There is opportunity to move the intersection of the proposed east-west collector road & Lake Ridge Road south by 100m to locate it 400m from the Highway 407 eastbound off ramp intersection and 500m from Winchester Road. This will satisfy MTO's minimum 400m spacing. Even with the aforementioned location modifications to the proposed intersection spacing along lake Ridge Road, Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction is not satisfied.	<u>Lake Ridge Road (Type B Arterial):</u> Intersection spacing of the east/west collector and arterial roads that intersect with Lake Ridge Road do not meet intersection spacing requirements identified by Durham Region (Type B Arterial in the north-south direction – 525 m) or MTO (400 m). Spacing between the proposed Columbus Road realignment / 7th Concession Road & Lake Ridge Road intersection and the proposed Carnwith Drive & Lake Ridge Road intersection is approximately 650m, and then approximately 350m to the next intersection to the south (Highway 407 westbound off-ramp). There is limited opportunity to move the proposed intersection of the Carnwith Drive & Lake Ridge Road as it has been aligned with a proposed east-west arterial road within Pickering, however shifting it to the north by 50m will satisfy MTO minimum 400m spacing. Spacing between the proposed east-west collector road & Lake Ridge Road intersection south of the Highway 407 and the Highway 407 eastbound off ramp & Lake Ridge Road intersection is approximately 300m, and then approximately 600m to the next intersection to the south (Winchester Road). There is opportunity to move the intersection of the proposed east-west collector road & Lake Ridge Road south by 100m to locate it 400m from the Highway 407 eastbound off ramp intersection and 500m from Winchester Road. This will satisfy MTO's minimum 400m spacing. Even with the aforementioned location modifications to the proposed intersection spacing along lake Ridge Road, Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction is not satisfied.	There is no significant difference between the options on this measure and both options could be tweaked to improve intersection spacing.

Measure	Option 1	Option 2	Preferred Option
	Coronation Road (Type B Arterial): Intersection spacings of the east/west arterial roads that intersect with Coronation Road (south of Columbus Road) meet Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction.	Coronation Road (Type B Arterial): Intersection spacings of the east/west arterial roads that intersect with Coronation Road (south of Columbus Road) meet Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction.	There is no difference between the options on this measure.
	Cochrane Street (Type C Arterial): Intersection spacings of the east/west collector roads that intersect with Cochrane Street (between Brawley Road and the proposed east-west collector road north of Columbus Road) meet Durham Region's 300 m intersection spacing requirements for Type C Arterials.	Cochrane Street (Type C Arterial): Intersection spacings of the east/west collector roads that intersect with Cochrane Street (between Brawley Road and the proposed east-west collector road north of Columbus Road) meet Durham Region's 300 m intersection spacing requirements for Type C Arterials.	There is no difference between the options on this measure.
	Ashburn Road (Type B Arterial): Intersection spacing of the east/west collector roads that intersect with Ashburn Road (between Brawley Road and the proposed east-west collector road north of Columbus Road) meet Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction.	Ashburn Road (Type B Arterial): Intersection spacing of the east/west collector roads that intersect with Ashburn Road (between Brawley Road and the proposed east-west collector road north of Columbus Road) meet Durham Region's 525 m intersection spacing requirements for Type B Arterials in the north-south direction.	There is no difference between the options on this measure.

Measure	Option 1	Option 2	Preferred Option
	<u>Brawley Road (Type A Arterial):</u> Spacing between the easternmost Franklin Crescent & Brawley Road intersection and the proposed north-south collector road & Brawley Road intersection is approximately 160m, and then approximately 400m to the next intersection to the east (Country Lane). There is an opportunity to move the intersection of the proposed north-south collector road & Brawley Road to the east by 40m, thus locating it 200m from the easternmost Franklin Crescent intersection and 360m from Country Lane. Achieving the 200m distance between intersections should allow the easternmost Franklin Crescent & Brawley Road intersection to remain as a full moves intersection in the future. Intersection spacing of the north/south collector roads that intersect with Brawley Road meet Durham Region's reduced 300 m intersection spacing requirements for Type A Arterials in the east-west direction. If signals are required at both the proposed north-south collector road & Brawley Road and Country Lane & Brawley Road, their signals will need to be "coupled".	<u>Brawley Road (Type A Arterial):</u> Spacing between the easternmost Franklin Crescent & Brawley Road intersection and the proposed north-south collector road & Brawley Road intersection is approximately 160m, and then approximately 400m to the next intersection to the east (Country Lane). There is opportunity to move the intersection of the proposed north-south collector road & Brawley Road to the east by 40m, thus locating it 200m from the easternmost Franklin Crescent intersection and 360m from Country Lane. Achieving the 200m distance between intersections should allow the easternmost Franklin Crescent & Brawley Road intersection to remain as a full moves intersection in the future. Intersection spacing of the north/south collector roads that intersect with Brawley Road meet Durham Region's reduced 300 m intersection spacing requirements for Type A Arterials in the east-west direction. If signals are required at both the proposed north-south collector road & Brawley Road and Country Lane & Brawley Road, their signals will need to be "coupled".	There is no difference between the options on this measure and both options could be tweaked to improve intersection spacing.
	<u>Columbus Road (Type B Arterial):</u> Intersection spacings of the north/south collector roads that intersect with Columbus Road (west of Cochrane Street) meet Durham Region's 300 m intersection spacing requirements for Type B Arterials in the east-west direction. If signals are required at both the proposed north-south collector road & Columbus Road (between County Lane and Cochrane Street) and Columbus Road & Cochrane Street, their signals will need to be "coupled".	<u>Columbus Road (Type B Arterial):</u> Intersection spacings of the north/south collector roads that intersect with Columbus Road (west of Cochrane Street) meet Durham Region's 300 m intersection spacing requirements for Type B Arterials in the east-west direction. If signals are required at both the proposed north-south collector road & Columbus Road (between County Lane and Cochrane Street) and Columbus Road & Cochrane Street, their signals will need to be "coupled".	There is no significant difference between the options on this measure.

Measure	Option 1	Option 2	Preferred Option
	Carnwith Drive (Type C Arterial): Intersection spacings of the north/south collector and arterial roads that intersect Carnwith Drive meet Durham Region's 300 m intersection spacing requirements for Type C Arterials. ●	Carnwith Drive (Type C Arterial): Intersection spacings of the north/south collector and arterial roads that intersect Carnwith Drive meet Durham Region's 300 m intersection spacing requirements for Type C Arterials. ●	There is no significant difference between the options on this measure.
	Highway 7 (Type B Arterial): Halls Road North, north of Highway 7oad is proposed to be upgraded to a collector road. It is located approximately 400m east of the Lake Ridge Road & Highway 7 intersection and 210m west of the Highway 412 southbound on-ramp/carpool lot & Highway 7 intersection. Although the spacing does not meet the Regional or Provincial requirement, Halls Road already exists, and a full moves access is required into this block to support the development of a future Hospital. ◖	Highway 7 (Type B Arterial): Halls Road North, north of Highway 7 is proposed to be upgraded to a collector road. It is located approximately 400m east of the Lake Ridge Road & Highway 7 intersection and 210m west of the Highway 412 southbound on-ramp/carpool lot & Highway 7 intersection. Although the spacing does not meet the Regional or Provincial requirement, Halls Road already exists, and a full moves access is required into this block to support the development of a future Hospital. ◖	There is no difference between the options on this measure.

Study Principle: Mobility with Choices

Criteria a) Ability to support alternate modes

Measure	Option 1	Option 2	Preferred Option
Are residential areas arranged so that higher density residential areas are within walking distance (400 metres) of potential future transit routes on arterial and/or collector roadways?	The High-Density Residential areas and the two mixed use nodes are located along two intersecting arterial roadways (Lake Ridge Road and Columbus Road) which provides a strong opportunity to locate higher density residential areas within a walking distance of transit routes. 	The High-Density Residential areas and the nine commercial / mixed use nodes identified within the Secondary Plan Area are located along arterial and collector roadways. Each of the community/ mixed use nodes are expected to be natural transit hubs that would serve as the terminal(s) for one or more transit routes servicing Brooklin. This option provides the greatest opportunity to support transit as it is extended along collector and arterial roads 	Option 2 is slightly preferred but could be improved by providing additional density along the Regional corridor along Columbus Road.
Are commercial areas located along future transit routes on arterial and/or collector roadways?	All commercial and mixed use areas are located along an arterial and/or collector roadway. 	All commercial and mixed use areas are located along an arterial and/or collector roadway. 	There is no significant difference between the options on this measure.

Study Principle: Connectivity

Criteria a) Elementary Schools are centrally located

Measure	Option 1	Option 2	Preferred Option
Elementary Schools are located centrally within residential areas.	Option 1 provides one elementary school in Area A, two elementary schools in Area B and one elementary school in Area C. No elementary schools are provided in Area I. It is assumed that children in Area I will be served through a school in Columbus Part 2 Lands. 	Option 2 provides two elementary schools in Area A, one elementary school in Area B and one elementary school in Area C. No elementary schools are provided in Area I. The location of the school in Area C is more centrally located. Two schools in Area A are preferred due to the larger area and intent of higher densities. 	Option 2 is preferred in the distribution of schools. Preparation of the Preferred Alternative will include a more detailed analysis for the required number of schools based on the final land use mix/densities. The school sites will be located central to the school boards' catchment areas in consultation with the school boards. Through discussions with the school boards, 5 public elementary schools may be required.
Elementary Schools are located with at least one access on a collector road (double frontage preferred) and satisfies Residential guidelines.	Three of the four elementary schools are located with access onto a collector road. One of the elementary schools has a double frontage. The fourth elementary school is located along an arterial road (Cochrane Street). 	Three of the four elementary schools are located with access onto a collector road. The fourth elementary school is located along an arterial road (Cochrane Street). 	There is no significant different between the options in this measure. Preparation of the Preferred Alternative with include a more detailed analysis for the required number of schools based on the final land use mix/densities and consultation with the school boards.

Criteria b) Access to Secondary Schools by multiple modes

Measure	Option 1	Option 2	Preferred Option
Preference for location at the intersection of an arterial and a collector roadway (double frontage). Location must allow for multiple accesses, with at least being signalized.	The secondary school is located at the intersection of an arterial road (Columbus Road West) and a collector road (Halls Road North extension). Columbus Road is a Regional Corridor with potential for transit and greater active transportation access 	The secondary school is located along an arterial road (Lake Ridge Road) at the western edge of the neighbourhood and may require multiple accesses onto Lake Ridge Road which may not be possible. 	Option 1 is preferred as it locates the secondary school at the intersection of an arterial and collector road and along a Regional Corridor.

Criteria c) Connectivity across Greenbelt

Measure	Option 1	Option 2	Preferred Option
Need and ability to construct east west collector through the Greenbelt.	Option 1 includes the Carnwith Drive connection across the Greenbelt but does not provide a northern collector road connection across the Greenbelt. The absence of this connection would result in more traffic on Columbus Road and Brawley Road. The existing Columbus Road and Brawley Road Greenbelt crossings are 2km apart. The lack of the new crossing also negatively impacts the connectivity between the neighbourhoods located to the east and west of the Greenbelt (especially for walking and cycling trips). 	Option 2 provides two collector road crossings of the Greenbelt. The east-west collector road through the Greenbelt north of Columbus Road is important from a multi-modal connectivity, redundancy, and accessibility point of view. The location of the new crossing would be selected to minimize environmental impacts as best as possible. 	Options 2 is preferred. It provides an east-west collector road through the Greenbelt north of Columbus Road.

Study Principle: Healthy Living

Criteria a) Safe and walkable distances to parks

Measure	Option 1	Option 2	Preferred Option
Proportion of residential areas within 800 metres of a District Park.	There is 90.66 ha of residential areas (Low, Medium And High Density Residential) within 800 metres of a District Park. ●	There is 86.06 ha of residential areas (Low, Medium And High Density Residential) within 800 metres of a District Park. ◐	Option 1 is preferred as the general location of the District Park serves more of the residential area.
Proportion of residential area within 400 metres of a local park without crossing an arterial road.	There is 216.49 ha of residential areas (Low, Medium And High Density Residential) within 400 metres of a local park without crossing an arterial road. ●	There is 189.08 ha of residential areas (Low, Medium And High Density Residential) within 400 metres of a local park without crossing an arterial road. ◐	Option 1 is preferred as a larger proportion of residential areas are within 400 metres of a local park without crossing an arterial road.
Extent that District Parks are located adjacent to natural areas to maximize potential trail linkages.	The District Park is surrounded by residential and mixed uses and is not located adjacent to any natural areas. ○	The District Park is located adjacent to lands designated Major Open Space and Natural Hazards. ●	Option 2 is most preferred as the District Park is located adjacent to natural areas.
Extent that District Parks are located adjacent to a secondary school.	The District Park is located adjacent to the secondary school. ●	The District Park is not located adjacent or near the secondary school. ○	Option 1 is preferred as the District Park is located adjacent to the secondary school, providing the opportunity for the co-location of uses. However, the location of both a secondary school and district park on the north side of Columbus Rd. will reduce the population and density. An alternative location for the district park should be considered.

Study Principle: Green Space and Natural Areas

Criteria a) Least potential to negatively impact natural systems

Measure	Option 1	Option 2	Preferred Option
Length (metres) of linear interface between land use and natural feature (i.e. options with a greater interface with desirable land uses rank higher than those with more interface with least desirable options, and options with more interface with least vulnerable features rank higher than those that interface with more vulnerable features). Where proposed land use is identified only with a symbol (e.g. parks and schools): presence/absence of land use can be used instead of length of interface. *Land Uses (most desirable to least desirable)* 1. parks; 2. prestige industrial, business parks; 3. commercial, industrial, residential, schools. *Natural Areas (most vulnerable to least vulnerable)* 1. upland woodland 2. watercourse, riparian 3. wetland (marsh, wet swamp, fen), cultural meadow	**Category 1 Land Uses adjacent to:** • Upland Communities: 0 m • Watercourses and Riparian Habitat: 0 m • Wetlands and Cultural Meadows: 0 m **Category 2 Land Uses adjacent to:** • Upland Communities: 9,363 m • Watercourses and Riparian Habitat: 14,325 m • Wetlands and Cultural Meadows: 16,293 m **Category 3 Land Uses adjacent to:** • Upland Communities: 7,410 m • Watercourses and Riparian Habitat: 9,230 m • Wetlands and Cultural Meadows: 6,837 m **Interface with land use category:** **• Category 1 Land Use: (0 m)** **• Category 2 Land Use: (39,981 m)** **• Category 3 Land Use: (23,477 m)**	**Category 1 Land Uses adjacent to:** • Upland Communities: 0 m • Watercourses and Riparian Habitat: 0 m • Wetlands and Cultural Meadows: 0 m **Category 2 Land Uses adjacent to:** • Upland Communities: 8,320 m • Watercourses and Riparian Habitat: 12,978 m • Wetlands and Cultural Meadows: 14,959 m **Category 3 Land Uses adjacent to:** • Upland Communities: 8,453 m • Watercourses and Riparian Habitat: 10,577 m • Wetlands and Cultural Meadows: 8,170 m **Interface with land use category:** **• Category 1 Land Use: (0 m)** **• Category 2 Land Use: (36,257 m)** **• Category 3 Land Use: (27,200 m)**	There is no significant difference between the two options. In the preferred option, effort should be undertaken to locate some of the neighbourhood and district parks to abut the natural features when possible.

Measure	Option 1	Option 2	Preferred Option
	Overall, no Category 1 Land Use was located adjacent to natural areas in this exercise. Option 1 has a larger interface with the more desirable land use, and a smaller interface with the least desired land use. **Interface of vulnerable features with all land use categories:** **• Upland Communities: (16,773 m)** **• Watercourses and Riparian Habitat: (23,555 m)** **• Wetlands and Cultural Meadows:(23,130 m)** The overall interface of natural areas is very similar between the two Options. Option 1 has a has an additional metre of interface on the least vulnerable natural area in comparison to Option 2. 	Overall, no Category 1 Land Use was located adjacent to natural areas in this exercise. Option 2 has a smaller interface with the more desirable land use, and a larger interface with the least desired land use. **Interface of vulnerable features with all land use categories:** **• Upland Communities: (16,773 m)** **• Watercourses and Riparian Habitat: (23,555 m)** **• Wetlands and Cultural Meadows:(23,129 m)** The overall interface of natural areas is very similar between the two Options. Option 2's interface is one metre shorter on the least vulnerable natural area in comparison to Option 1. 	

Criteria b) Least potential to negatively impact the linkage function of natural features

Measure	Option 1	Option 2	Preferred Option
Number of road crossings through Regional – level NHS linkage components (ie. Tributaries to Lynde Creek and Oshawa Creek) and the sensitivity at the proposed crossing location.	Total Crossings: 0 Lynde Creek crossings: 0 Oshawa Creek crossings: 0 	Total Crossings: 0 Lynde Creek crossings: 0 Oshawa Creek crossings: 0 	All options rank the same for this measure.

Measure	Option 1	Option 2	Preferred Option
Number of road crossings through local – level NHS components: other watercourses and terrestrial linkages and the sensitivity at the proposed crossing location.	Other watercourse crossings: 15 • Cold water construction timing windows apply to all stream crossing locations (July 1 – September 15) • Watercourses will require a 15-30 m vegetation protection zone (to be confirmed with CLOCA)	Other watercourse crossings: 14 • Cold water construction timing windows apply to all stream crossing locations (July 1 – September 15) • Watercourses will require a 15-30 m vegetation protection zone (to be confirmed with CLOCA)	Option 2 is preferred as it has the fewest number of crossings.
Number of crossings of watercourses that provide Redside Dace habitat (occupied and recovery) and the sensitivity at the proposed crossing location.	Occupied Redside Dace habitat: 3 Recovery Redside Dace Habitat: 0	Occupied Redside Dace habitat: 3 Recovery Redside Dace Habitat: 0	All options rank the same for this measure.

Study Principle: Jobs

Criteria a) Provides a diverse range of employment opportunities

Measure	Option 1	Option 2	Preferred Option
Proportion of Industrial areas located in different employment designations (General vs. Prestige).	100% Prestige Industrial – 260.5 ha	91% Prestige Industrial – 257.5 ha 9% General Industrial – 24 ha	Option 1 provides 260 hectares of employment designation while Option 2 provides 280 hectares. Option 1 removes land designated employment north of existing Columbus Road and only provides for Prestige Industrial uses while Option 2 provides for a large majority of Prestige Industrial and a small percentage of General Industrial to the south. Option 2 is preferred as it provides for more overall employment area and would also provide a slightly more diverse range of employment opportunities in this sense.

Criteria b) Desirable employment area location

Measure	Option 1	Option 2	Preferred Option
Ability to maximize exposure along the highway and arterial road (length frontage along Highway 407 and arterial road).	Provides exposure for employment area along Highway 407, Highway 412 and arterial roads.	Provides exposure for employment area along Highway 407, Highway 412 and arterial roads.	Both options maximize employment land exposure to Highway 407 and 412.

Study Principle: Community and Culture

Criteria a) Provides centrally located public meeting places and uses that can create place identity/sense of place

Measure	Option 1	Option 2	Preferred Option
Proportion of residential area within 800 metres of a commercial area and/or park.	There is 713.77 ha of residential areas (Low, Medium And High Density Residential) within 800 metres of a commercial area and/or park. ○	There is 986.31 ha of residential areas (Low, Medium And High Density Residential) within 800 metres of a commercial area and/or park. ●	Option 2 provides more residential areas within 800 metres of a commercial area and/or park, offering a greater amount of public meeting places and opportunities for creating a sense of place.

Criteria b) Provision of appropriate number and location of schools

Measure	Option 1	Option 2	Preferred Option
The number and location of schools meet school board needs.	Four elementary schools and one secondary school are provided. ●	Four elementary schools and one secondary school are provided. ●	Both options provide the same number of schools based on initial population assumptions. The school needs assumptions are preliminary and based on a high-level analysis for the purposes of the preparation of and evaluation of the Alternatives. During the preparation of the Preferred Alternative, a more detailed analysis will be undertaken based on the final land use mix/densities. As such, the total number of and breakdown of school types may differ between the Alternatives presented in this report and those in the final Preferred Plan.

Study Principle: Housing Choice

Criteria a) Offers diverse housing mix

Measure	Option 1	Option 2	Preferred Option
As set out in Policy 11.5.6.9 of the Whitby Official Plan pertaining to the Brooklin Community Secondary Plan, the proportion of housing in low, medium and high density units meets the intended mix of: 58% singles and semis (Low density), 30% townhouses and other ground related multi-unit housing (Medium density), 12% apartments (High density).	**Low Density –** 276.2 ha (73%) **Medium Density –** 81.3 ha (21%) **High Density and Mixed Use –** 23.2 ha (6%) 	**Low Density –** 214.1 ha (67%) **Medium Density –** 80.8 ha (25%) **High Density and Mixed Use –** 22.7 ha (7%) 	While very similar between the two options, the housing mix in Option 2 is preferred as it provides the closest unit mix set out in Policy 11.5.6.9 of the Whitby Official Plan for new greenfield expansion areas within the Brooklin Community Secondary Plan.

Study Principle: Neighborhood Character and Design

Criteria a) Ability to deliver a full range of housing typologies within a neighbourhood

Measure	Option 1	Option 2	Preferred Option
Proportion of low, medium and high density areas within a neighbourhood.	2 of the 4 neighbourhoods are predominantly (over 80%) Low Density Residential and 3 neighbourhoods do not have any high density and/or mixed use typologies. **Area A:** Low Density Residential: 71.2 ha (51%) Medium Density Residential: 45.9 ha (33%) High density & Mixed Use: 23.2 ha (17%) **Area B:** Low Density Residential: 106.9 ha (91%) Medium Density Residential: 10.5 ha (9%) High density & Mixed Use: 0 ha (0%) **Area C:** Low Density Residential: 54.5 ha (70%) Medium Density Residential: 22.9 (30%) High Density & Mixed Use: 0 ha (0%) **Area D:** Low Density Residential: 43.6 ha (95%) Medium Density Residential: 2.1 ha (5%) High Density Residential: 0 ha (0%)	2 of the 4 neighbourhoods are predominantly (over 80%) Low Density Residential. **Area A:** Low Density Residential: 54.9 ha (47%) Medium Density Residential: 44.5 ha (38%) High Density & Mixed Use: 16.8 ha (14%) **Area B:** Low Density Residential: 63.6 ha (82%) Medium Density Residential: 12.5 ha (16%) High Density Residential: 1.5 ha (2%) **Area C:** Low Density Residential: 54.5 ha (72%) Medium Density Residential: 17.1 (22%) High Density & Mixed Use: 4.4 ha (6%) **Area D:** Low Density Residential: 41.0 ha (86%) Medium Density Residential: 6.8 ha (14%) High Density Residential & Mixed Use: 0 ha (0%)	Option 2 has a greater diversity of housing mix across the expansion area and is preferred.

Study Principle: Urban Structure

Criteria a) Ability to create viable focal points

Measure	Option 1	Option 2	Preferred Option
Amount of higher intensity uses (medium density residential, high density residential, and mixed uses) at key focal areas.	Option 1 is designed with a focus on corridors where medium and high density and mixed uses are located along major roads and not concentrated in single locations. 	Option 2 is designed with a focus on nodes, where there are clusters of higher density uses and amenities located at collector and arterial road intersections. 	Option 1 and 2 provide two different approaches to the distribution of land uses. The distribution of nodes in Option 2 is preferred in creating central places with a mix of uses for the local neighbourhoods and enhanced walkability, while maintaining higher density along the transit corridors.
Proportion of higher intensity uses - medium and high density, mixed use and commercial areas within the Regional Corridors.	There are 23.3 ha of higher intensity uses within the Regional Corridor. **High Density Residential:** 7.7 ha (33%) **Medium Density Residential:** 7.3 ha (31%) **Mixed Use:** 6.3 ha (27%) **Commercial Use:** 2.1 ha (9%) 	There are 23.5 ha of higher intensity uses within the Regional Corridor. **High Density Residential:** 3.2 ha (14%) **Medium Density Residential:** 14.6 ha (62%) **Mixed Use:** 3.7 ha (16%) **Commercial Use:** 2.0 ha (8%) 	Both options provide a similar amount of higher intensity uses within the Regional Corridor, however Option 1 is preferred as it provides the greatest mix of higher intensity uses within the Regional Corridor.

6 Preferred Land Use Plan



The Preferred Land Use Plan for the Brooklin Expansion Area was developed based on an evaluation of two Land Use Alternatives. Land Use Alternative 2 was the preferred alternative for many of the criteria and measures, but some refinements were made to Alternative 2 based on the evaluation and feedback received.

The Preferred Land Use Plan introduces a new residential community north of Columbus Road and a mix of new employment areas south of Columbus Road. The new residential community north of Columbus Road is designed with a focus on walkable nodes, where higher density residential uses are concentrated with a mix of amenities at arterial and collector road intersections. The proposed location for the new hospital is identified southwest of the Highway 407/412 interchange. The Preferred Land Use Plan applies the land use designation categories from the Brooklin Secondary Plan including Low Density Residential, Medium Density Residential, High Density Residential, Local Commercial, Mixed Use, Prestige Industrial, General Industrial and Major Open Space along with a new Business designation to permit those employment uses including the new hospital that are no longer considered part of Employment Area in the Provincial Planning Statement.

6.1 Land Uses

This section describes the Preferred Land Use Plan, shown in **Figure 20.**

Low Density Residential

Areas designated Low Density Residential are distributed throughout the new residential community north of Columbus Road, outside of the higher density nodes. The Lakeridge Links Golf Club is designated Low Density Residential, except for the portion within the Natural Heritage System.

Areas designated Low Density Residential permit single detached dwellings, semi-detached dwellings and similar ground-related built form types to a maximum height of three (3) storeys. The minimum density is 25 units per hectare and the maximum density is 35 units per hectare.

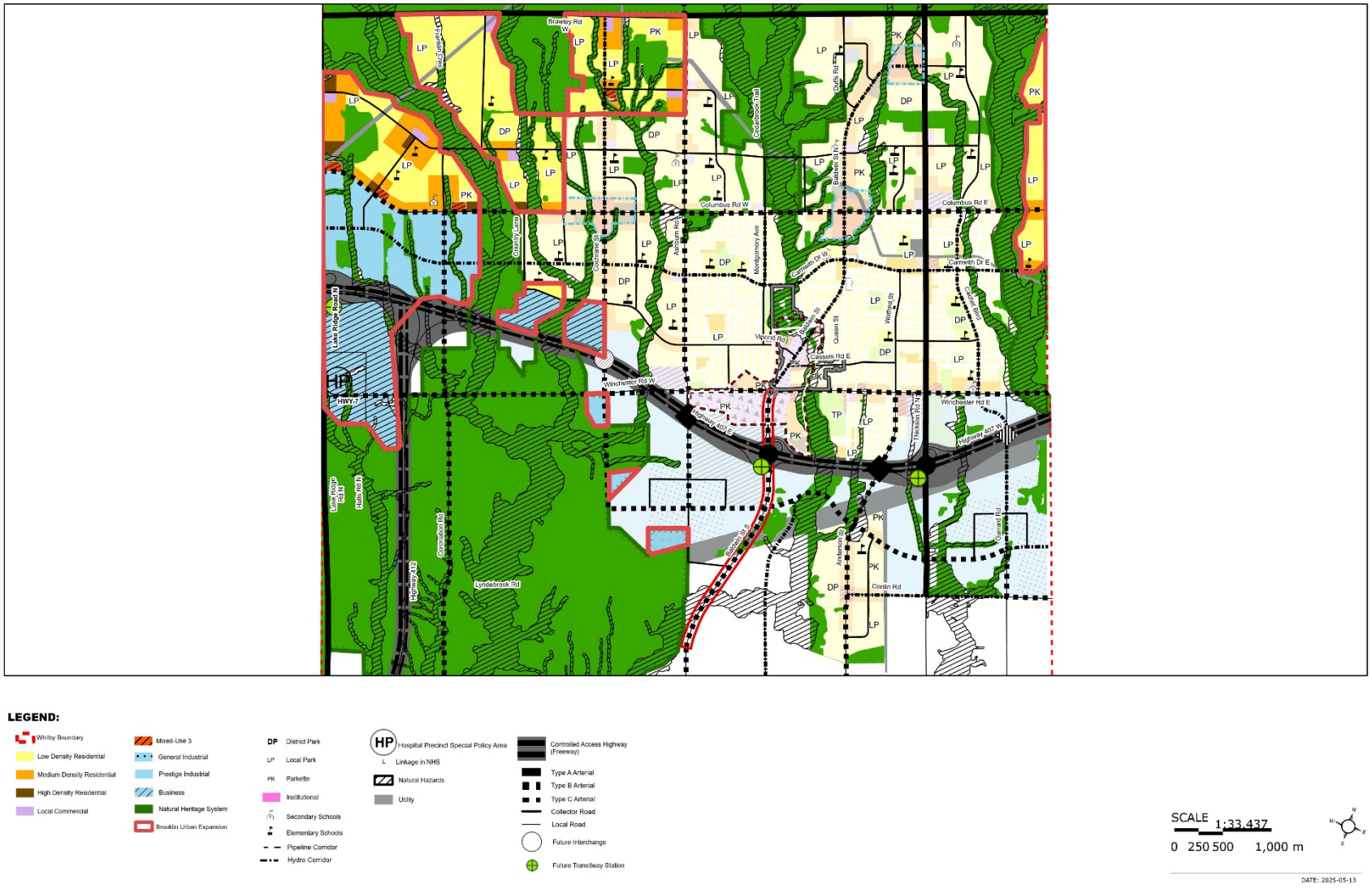


Figure 20: Preferred Land Use Plan

Medium Density Residential

The Medium Density Residential designation is concentrated in nodes at most intersections of collector and arterial roads, as well as along the north side of the Columbus Road Regional Corridor.

Areas designated Medium Density Residential permit a range of residential built form types up to four (4) storeys including fourplexes, townhouses in multiple forms (traditional, stacked, back to back, etc.) and low-rise apartments. The minimum density is 30 units per hectare and the maximum density is 65 units per hectare, except along Columbus Road where the minimum density is 50 units per hectare and the maximum density is 80 units per hectare.

High Density Residential

Areas designated High Density Residential are concentrated in the western portion of the residential community of the Brooklin Expansion Area, along Columbus Road, Lake Ridge Road, and the extension of Halls Road North.

Areas designated High Density Residential permit a range of townhouse types, apartments and other forms of multiple dwellings up to eight (8) storeys.

Mixed Use

The Mixed Use designation is located at key intersections of arterial and collector roads adjacent to Medium Density Residential and High Density Residential land uses. These locations include three along Columbus Road, at the intersection of Lake Ridge Road, Halls Road extension and Coronation Road. A third area is designated at the north end of Cochrane Street where it intersects a proposed collector road.

Areas designated Mixed Use permit a combination of residential and non-residential uses.

Local Commercial

Six Local Commercial areas are distributed through the community to form nodes in combination with Medium Density Residential and/or High Density Residential designations at main intersections including along Lake Ridge Road, Halls Road extension, Brawley Road, Country Lane, Cochrane Street and Ashburn Road.

Areas designated Local Commercial will provide a central location for convenience retail and service uses in walking distance from residents.

Prestige and General Employment

A small area of General Employment is added at the southern extent of Ashburn Road adjacent to an existing General Employment Area. Prestige Employment is loated on

the south side of Highway 7 east of Lake Ridge Road over to Highway 412 and on the west side of Cochrane Street adjacent to the existing Prestige Employment Area. A large area of Prestige Employment is also located north of Highway 407, east of Lake Ridge Road up to Columbus Street which follows the employment area boundary in Envision Durham.

Business

A new designation is proposed through the Focus 4 Report called Business. It is not part of the "Employment Area" as defined in the Planning Act and Provincial Planning Statement and includes those uses formerly permitted in Prestige Employment but no longer permitted by the Provincial Planning Statement that serve employment areas and residential areas as well as other large land extensive uses including uses such as offices, hospitals, post-secondary educational facilities, hotels, places of worship, restaurants, personal services, auto dealerships, auto service, funeral homes, home improvement centres, garden centres, and furniture and appliance sales.

Lands designated Business include the proposed hospital lands north of Highway 7 and east of Lake Ridge Road, the lands south of Highway 7 south of the proposed hospital lands, as well as the two areas north of Highway 7 at the Country Lane and west of Cochrane Street.

Schools

Based on the proposed land uses, densities and new population, six elementary schools are required (five public and one separate) and one public secondary school. The six elementary schools have been distributed as follows:

- A campus of two schools and a local park on the Halls Road extension;
- Along a proposed north-south collector road west of Country Lane;
- Along the northern east-west collector east of Country Lane;
- On the east side of Cochrane Street, at the intersection of a proposed collector road;
- On the Carnwith Drive extension at the southern edge of the community area.

A public secondary school site has been located on the north side of Columbus Road at the intersection with Coronation Road.

Parks and Open Space

One district park, nine local parks and three parkettes are distributed throughout the Brooklin Expansion Area to ensure a 5-minute walk to a park for residents. The amount and distribution of parkland proposed is based on the land uses, densities and needs of the new population, taking into consideration the Town's Parks and Recreation Master Plan.

A district park is located west of Country Lane and north of the northern east-west collector road. The district park is adjacent to the Greenbelt Plan area and the Major Open Space designation, offering the opportunity for integration of the natural heritage system and the Greenbelt Plan with the park's amenities. The district park will serve the broader community and may provide active recreation areas including sports fields and facilities, as well as ball courts, playgrounds, community gardens, landscaped and passive recreation areas.

Four local parks have been located adjacent to elementary schools to coordinate shared uses, where possible. Local Parks are intended to provide both active and passive recreational amenities to serve the needs of their immediate neighbourhoods. Facilities may include landscaped areas, walkways, ball courts, playgrounds and/or community gardens.

Three parkettes are distributed throughout the community to ensure open space is provided within walking distance of all residents.

Roads

The Preferred Land Use Plan illustrates existing, planned and proposed roads.

Arterial Roads

In addition to the existing road network, the Preferred Land Use Plan proposes to connect Columbus Road to 7th Concession Road in Pickering (to the west). The Plan also proposes to connect Carnwith Drive West all the way to Lake Ridge Road.

Collector Roads

Two of the east-west collector roads planned in the Brooklin Community Secondary Plan are proposed to be extended west into the Brooklin Expansion Area, one of them to connect to Cochrane Street and the other to connect to Lake Ridge Road. Halls Road is also extended and bended to link up to one of the aforementioned east-west collector roads. Coronation Road is also proposed to be extended as a collector road north of Columbus Road.

South of Highway 407, Halls Road is proposed to link to Lake Ridge.

Major Open Space and the Natural Heritage System

The Major Open Space designation contains the Natural Heritage System which is primarily made up of the natural features and their associated buffers, based on the existing delineation of features in the current Whitby Official Plan. No development, with the exception of trails, erosion control or stormwater management facilities or similar features, would be permitted in these areas.

6.2 Estimated Density, Units, Population and Jobs

Table 6 describes the land areas and projected units, population and jobs that could arise from the Preferred Land Use Plan. The Plan results in an approximate density of 21 units per hectare and 64 persons and jobs per hectare.

Table 6: Approximate Land Area, Units, People, and Jobs for the Preferred Land Use Plan

Preferred Land Use Plan - Community Areas				
	Area (ha)	**Units**	**People**	**Jobs**
Low Density Residential	219.5	4,080*	14,325*	
Medium Density Residential	76.0	3,030	7,430	
High Density Residential	10.8	720	950	
Mixed Use	6.7	340	450	220
Local Commercial	10.0			550
School	24.4			610
Parks	17.0			
Total	**386.4**	**8,168**	**23,155**	**1,380**
		Units per hectare	**People and jobs/hectare**	
Approximate Density		21	64	
Preferred Land Use Plan - Employment Areas and Business				
	Area (ha)		**Jobs**	
Prestige Employment	135.1		3,780	
General Employment	9.1		250	
Business	126.7		3,550	

* Includes an estimated 28 existing approved and under construction homes on the Lakeridge Links Golf Course and an estimate population of 100.

7 Conclusion and Next Steps



Based on the Preferred Land Use Plan, a draft proposed Land Use Plan and Official Plan Amendment for the Brooklin Expansion Area will be presented and brought forward at a Statutory Public Meeting.

Appendix A

Technical Memo

To: Lori Tesolin, Principal Planner and Supervisor, Policy and Heritage Planning, Town of Whitby

From: Whitney Moore, Dillon Consulting Limited
Susanne MacDonald, SGL Consulting
Justine Giancola, Dillon Consulting Limited
Michael Hanifi, Dillon Consulting Limited

Date: August 13, 2024

Subject: Whitby Official Plan Natural Heritage Review- Brooklin Expansion Area

Our File: 24-7548

Introduction

Dillon Consulting Limited (Dillon) was retained by the Town of Whitby (the Town) to undertake a review of policies and mapping related to natural heritage features and the NHS within the Town with regards to the Brooklin Urban Expansion Area (BUEA). The Study Area for the BUEA is made up of nine areas of land varying in size, which are generally bounded by Lakeridge Road to the west, Thornton Road North to the east, Brawley Road West to the north and Conlin Road and Lyndebrook Road to the south, as shown on (**Figure 1**).

The Durham Regional Official Plan (ROP), Envision Durham (May 2023), recently introduced an expansion to Whitby's Urban Area to the west of Brooklin to Lake Ridge Road and to the eastern border within Oshawa, which contains both new Employment Areas and Community Areas. Furthermore, three small areas were removed from the Greenbelt Plan Area in 2017 but were not included in the Urban Area at that time, but Durham Region (the Region) has now included them within their urban area and designated them as Employment Areas. As a result, the lands within the BUEA will need to be incorporated into the Town's Urban Area and given land use designations on Schedule A and incorporated into the Brooklin Secondary Plan on Schedule K within the Town's Official Plan (OP).

This memo does not provide recommendations on new policy, but rather reviews the policy in place for the BUEA lands to ensure they have been brought up to date. Furthermore, it is Dillon's understanding that Secondary Plans are required to be in conformance with the ROP.

Through this exercise, the Region's NHS was compared to the Town's NHS to determine if there are any discrepancies. Although the OP delineates the NHS and Natural Hazards on Schedule C and individual features on Appendix 1, these features should be confirmed through a more detailed review at a Secondary Plan level. The deferred lands in Brooklin were reviewed during the Brooklin Secondary Plan study but may require revisions. The natural heritage analysis will be a desktop activity relying on secondary source data, air photo interpretation and supplemented by up to date studies by individual

landowners, if available. Further, the desktop work can be confirmed, if necessary, through roadside surveys.

This work is not intended to be at a natural heritage evaluation or subwatershed study level study but rather to confirm and/or revise the boundaries of the NHS identified in the OP to the extent possible using the methods listed above.

Approach

Background Review

In conducting this review of natural heritage policies/ features within the BUEA, Dillon completed a desktop review of existing background documents and mapping of the Study Area; which included the following as they relate to the Study Area:

- Provincial Policy Statement (PPS; 2020);
- A Place To Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan; May 2019);
- Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) database;
- Ontario Endangered Species Act (ESA; 2007);
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Mapping;
- Central Lake Ontario Conservation Authority (CLOCA) interactive mapping (2017);
- Town of Whitby Official Plan and GIS layers- Sections 5.3.7 and 11.5.25;
- Durham Region Official Plan; and
- Envision Durham (2023).

Site Visits / Roadside Checks

At this time, no site visits have been conducted; however, as the next phases of the OP review proceed, there may be a need to conduct confirmatory site assessments where access is granted or via windshield survey to confirm recommendations provided herein.

Discussion

The results of our desktop review are presented below. **Figure 2** illustrates the natural heritage features, identified through background review, within and surrounding the BUEA on a landscape level. Information presented in **Figure 2** is sourced from the MNRF and the CLOCA GIS database. **Figure 3** shows the current NHS layer provided by the Town (sourced from the OP) and the Region (sourced from the ROP).

Existing Conditions / Natural Heritage Features

Work had previously completed within the BUEA that supports the establishment of an NHS. These works include:

- Pringle Creek Master Drainage Plan Update (2018);
- Lynde Creek Master Drainage Plan – Municipal Class Environmental Assessment (2023);
- Brooklin Secondary Plan Watershed Planning, Hazard Lands and Stormwater Management- Stage 3 Final Report (2018);
- Brooklin Secondary Plan Area Natural Heritage Assessment Background Report (2017);
- Brooklin North Major Roads Environmental Assessment Study, Environmental Study Report (2021);
- Natural Heritage Assessment Report prepared for the Brooklin Traffic Management Plan (2017);
- Oshawa Creek Watershed Plan 2020);
- Lynde Creek Watershed Plan (CLOCA, 2024); and,
- Wildlife Corridor Protection and Enhancement Plan, (CLOCA, 2022).

Although these works had been done in the Study Area to characterize the NHS within the BUEA, further characterization of the NHS should be undertaken through a natural heritage evaluation, subwatershed study level study or other development application studies.

Some key takeaways from a review of these background resources are listed below:

- Information gathered in these background resources were collected with limited access;
- Much of the natural heritage data collected was done prior to 2021;
- The Branches of Lynde Creek within the Study Area contain regulated habitat for the provincially and federally endangered Redside Dace (*Clinostomus elongatus*);
- A majority of the identified vegetation communities within the BUEA have been identified as widespread and common in Ontario and are Globally secure (to be confirm through future field studies);
- The dominant land use with BUEA is agriculture; and,
- Rare species that have the potential to be in the Study Area include (please note that this list is not exhaustive, and further study is required):
    - Red Mulberry (*Morus rubra*);
    - Butternut (*Juglans cinerea*);
    - Barn Swallow (*Hirundo rustica*);
    - Bobolink (*Dolichonyx oryzivorus*);
    - Eastern Meadowlark (*Sturnella magna*);
    - Eastern Wood Pewee (*Contopus virens*); and,
    - Wood Thrush (*Hylocichla mustelina*).

Background Mapping

A review of available CLOCA, MNRF LIO data and NHIC mapping (as shown on **Figure 2**) identified that many watercourses transverse the BUEA parcels; the related CLOCA regulation limits associated with these features can also be seen on this figure. Furthermore, pockets of woodland and open water features are also found in some of the BUEA parcels; no Provincially Significant Wetlands or Areas of Natural and Scientific Interest (ANSI) were identified, though CLOCA's regulation limits have considered non-provincially significant wetlands. Another note of interest is that the MNRF's NHS layer does not overlap with any of the parcels.

Scoped Policy Review

Provincial Policy Statement, 2020

The PPS provides policy direction on matters of provincial interest related to land use planning and development. The PPS sets forth a vision for Ontario's land use planning system by managing and directing land use to achieve efficient development and land use patterns, wise use, and management of resources, and protecting public health and safety. This report has specifically considered Policy 2.1, Natural Heritage, Policy 2.2, Water, and Policy 3.1 Natural Hazards, which provides for the protection and management of natural heritage and water resources, which include the following:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Significant areas of natural and scientific interest (ANSIs);
- Fish habitat;
- Sensitive surface water features;
- Sensitive ground water features; and
- Hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

Potential significance of natural heritage features may be evaluated based on size, age, presence of rare or sensitive species, species diversity, and linkage functions, taking into consideration factors such as adjacent land use and degree of disturbance. Criteria for determining significance follow guidance outlined in the Natural Heritage Reference Manual (MNRF, 2010) and the Significant Wildlife Habitat (SWH) Technical Guide Eco-Region 6E Criterion Schedules (MNRF, 2015), where applicable.

When establishing policy to guide the development of the BUEA, the PPS and its associated guidelines should be consulted when determining what features should be protected from development. Furthermore, the policy should clearly define which features should be classified as Significant.

Note that in some of the background material reviewed as part of this technical memo, the methodology for determining SWH within the study area was outdated. Through more detailed studies, the policy should guide others to utilize the most recent guidelines for establishing SWH, which is the SWH Technical Guide Eco-Region 6E Criterion Schedules (MNRF, 2015).

Endangered Species Act

With the enactment of the provincial *Endangered Species Act (ESA)*, 2007, Ontario has strong policies in place for the protection and recovery of Species at Risk (SAR). The *ESA* protects species and their habitats. When a species is listed as Endangered (END) or Threatened (THR) under the *ESA*, 2007, its habitat is afforded protection under the Act. There are three applicable regulations under the *ESA*, 2007; *O. Reg. 230/08* - the Species at Risk in Ontario (SARO) List, *O. Reg. 242/08* (General), and *O. Reg. 830/21* (Exemptions - Barn Swallow, Bobolink, Eastern Meadowlark and Butternut). These regulations serve to identify which species and habitats receive protection and provide direction on the current implementation of the ESA.

The Ministry of Environment, Conservation and Parks (MECP) takes on the regulatory role of the ESA. However, it is common practice for municipalities to include protections of SAR within their OP by requiring the authorization of MECP under the ESA when approving development applications.

Department of Fisheries and Oceans

The protection of fish habitat in Canada is the responsibility of DFO and its partners. The Federal *Fisheries Act*, last amended in 2019, and its fisheries protection provisions establish authorities for the prohibition of killing of fish and of harmful alteration, disruption, and destruction of fish habitat. Fish habitat refers to spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes.

Policies created for the BUEA should direct proponents to consult with DFO (or applicable provincial or federal agency) where watercourse alteration is proposed.

A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019

The Growth Plan is a Provincial Plan that directs how growth should occur in the Greater Golden Horseshoe (GGH). The Government of Ontario first released the original Growth Plan in 2006 under the terms of the provincial *Places to Grow Act*, 2005 and updated the plan in 2017, and then again on May 16, 2019. The current Growth Plan was consolidated and approved in August 2020. The *Places to Grow Act*, 2005 states that all decisions by municipalities under the *Planning Act*, 1990 shall conform to the Growth Plan. As per Schedule 4 of the Growth Plan, the Subject Lands are within the GGH Area, and within the Designated Greenfield Area.

Central Lake Ontario Conservation Authority

The CLOCA regulates development, interference with wetlands, and alterations to shorelines and watercourses in accordance with *Ontario Regulation 41/24 (O. Reg. 41/24)* made under the *Conservation Authorities Act*, 1990. *O. Reg. 41/24* applies to natural or hazardous areas (i.e., areas in and near rivers, streams, floodplains, wetlands, and slopes) in all Conservation Authority Regulated Areas. This regulation came into effect on April 1, 2024, replacing the previous *O. Reg 42/06*.

Regulated Areas within CLOCA jurisdiction have been mapped in association with the watercourses and wetlands present in the Subject Lands and as a result, the policies within *O. Reg. 41/24* apply within these areas. The Regulated Areas of the Subject Lands includes areas of mapped floodplain and are shown on **Figure 2**.

Where CLOCA regulated areas overlap with the BUEA, policy should be included directing the proponent to consult with them prior to development. Permits will be required for development within the regulated areas. To confirm if a project is located within the regulated area, consultation with CLOCA will be required.

Town of Whitby Official Plan, 2024

The Council adopted the Township's OP in 1994, and an updated review was done in 2017. The current OP is consolidated to February 2024. The OP establishes the direction for development for both public and private sectors.

This section of the memo will detail OP policies/schedules for the BUEA lands that are currently in place in the OP, as well as recommendations for updates, where needed.

Parts of the BUEA lands are identified on Schedule B of the Town's OP as subject to the ROP's policy 14.13.7, which states that:

14.13.7 The following policies apply to lands located in Whitby, identified as "Lands appealed to OMB" as shown on Schedule 'A' – Map 'A4':

> *a) the proposed designations and Urban Area boundary as adopted by Regional Council on June 3, 2009, are under appeal at the Ontario Municipal Board and are adjourned;*
> *b) the Board may be requested to resume consideration of the proposed Urban Area expansion and designations once a comprehensive review has been completed by the area municipality in accordance with the policies of this Plan, with the approval of the Region. The comprehensive review shall demonstrate conformity with the provisions of this Plan, in particular policies 7.3.9, 7.3.10, 7.3.11 and 7.3.12; and*
> *c) Until such time that the provisions of subsection b) above is met, the lands in north Whitby will remain as designated on June 2, 2009.*

It's Dillon's understanding that now that the BUEA lands have been included in the Urban Boundary of the ROP that this reference to policy 14.13.7 may now be outdated.

As shown on Schedule C of the Town's OP, portions of the BUEA overlaps with the NHS, natural hazards, and Greenbelt Natural Heritage System. The NHS as shown on this Schedule C aligns with **Figure 3** attached to this technical memo. Dillon' has reviewed the mapping and believe that no further modifications are required at this time, and that policy will allow for further refinements to the NHS through an environmental study completed for development proposed with the BUEA. Note that policy should be included that specifies that through a more detailed natural heritage review of BUEA properties, additional areas could be added or removed the NHS that were missed at this high-level review. This is reflected in the Town's OP Policy 5.3.7.3.

Furthermore, it is recommended that the Town review its OP's Schedules, Maps and Appendices to ensure the entire BUEA is captured in this mapping.

Listed below are Policies from Section 5.3.7 (Natural Heritage System) of the Town's OP, each with associated review of updates needed (if required) and their applicability to the BUEA.

> *5.3.7.1 The Natural Heritage System is comprised of an interconnected system of key natural heritage and hydrologic features and areas within the Municipality including any associated vegetation protection zones. These key natural heritage features include: wetlands; habitat of endangered species and threatened species; significant woodlands; significant valleylands, including the applicable lands within the Urban River Valleys identified in the Greenbelt Plan; significant wildlife habitat; fish habitat; watercourses with associated riparian corridors, life sciences Areas of Natural and Scientific Interest (ANSIs), sand barrens, tallgrass prairies, alvars, and savannahs. Certain key natural heritage features are shown on Appendix 1. Key hydrologic features include: permanent and intermittent streams, Lake Ontario (and its littoral zone), seepage areas and springs, kettle lakes, aquifers, recharge areas and wetlands. The Natural Heritage System also includes lands which have been identified and targeted for restoration and enhancement to create linkage areas and connections. The Natural Heritage System is generally indicated on Schedule "C" and shall be retained and enhanced wherever possible. Lands indicated as Natural Heritage System that are located within the Greenbelt Natural Heritage System are subject to additional policies identified in this section and in Section 4.9. In order to protect the associated habitat and species from disturbance, habitats of endangered species and threatened species are not identified on Schedule "C".*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.2 The Municipality recognizes the importance of identification and protection of Provincially significant wetlands, regionally and locally significant wetlands, and unevaluated wetlands. Where known, these features are included within the Natural Heritage System on Schedule "C". The location and extent of wetlands as identified by the Ministry of Natural Resources and Forestry are indicated on Appendix 1 and may be updated from time to time as new mapping becomes available without amendment to this Plan. Other wetlands may be identified and protected through the land use planning process in consultation with the Ministry of Natural Resources and Forestry and/or the Conservation Authority.*

This policy is suitable for the BUEA when protecting wetlands, though, recent changes to the Ontario Wetland Evaluation System (OWES; 2022) detail that the wetland identification and protection is to be done in consultation with the applicable Municipality rather than the MNRF. Furthermore, through the OWES update, "locally significant wetlands" and "wetland complexing" are no longer considered. Therefore, we recommend omitting policy related to locally significant wetlands as they are not defined or protected. Rather, we recommend the continued use of the term "unevaluated wetland" in the policy as this aligns with how other municipalities in Ontario have defined this type of feature. Regardless of whether the wetland is evaluated to be significant or not, any wetland can still be regulated by the CLOCA.

> *5.3.7.3 The extent and exact location of areas shown as Natural Heritage System, including their component natural heritage and hydrologic features and their significance, shall be determined at a site level through Environmental Impact Studies (EIS), other environmental studies, and may be further refined or delineated in the Zoning By-law through the development approval process, subject to the satisfaction of the Municipality and the Conservation Authority*.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.4 Development and site alteration shall not be permitted in key hydrologic features and key natural heritage features, including the associated vegetation protection zone, within the Natural Heritage System except for uses such as: a) conservation, flood or erosion control, where need is demonstrated and no reasonable alternative exists; b) fish, forest, and wildlife management; c) passive recreational uses such as trails and supporting small-scale structures; d) infrastructure, where need is demonstrated and no reasonable alternative exists; and e) existing agricultural uses.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.5 Notwithstanding Section 5.3.7.4, development or site alteration shall not be permitted within: a) fish habitat, except in accordance with Provincial and Federal requirements; b) habitat of endangered species or threatened species, except in accordance with Provincial and Federal requirements; or c) significant wetlands and significant coastal wetlands.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.6 Development or site alteration shall only be permitted on lands within or adjacent to the Natural Heritage System, in accordance with the provisions of this Plan and where it has been demonstrated that there will be no negative impact to the features and ecological functions of the features within the Natural Heritage System. An EIS shall be required to be prepared in accordance with the policies of Section 5.4.2 of this Plan, demonstrating that there will be no negative impact on the natural heritage or hydrologic features or their ecological functions, and determining the appropriate extent of a vegetation protection zone that is of sufficient width to protect the feature and its functions from negative impacts resulting from the proposed development and associated activities that may occur before, during, and after construction.*

Dillon recommends that this policy be updated to say: "…in accordance with the provisions of this Plan and where it has been demonstrated that there will be no net negative impact to the features… An EIS shall be required to be prepared in accordance with the policies of Section 5.4.2 of this Plan, demonstrating that there will be no net negative impact on the natural heritage…" This will allow for compensation and offsetting options where appropriate.

> *5.3.7.7 For the purposes of Section 5.3.7.6, outside the Urban Area boundary and rural settlement areas, adjacent lands are defined as all lands within 120 metres of the boundary of the Natural Heritage System. Within the Urban Area boundary, the extent of adjacent lands shall be determined by the Municipality in consultation with the Conservation Authority and shall consider such matters as the type and scale of proposed development, the sensitivity of the natural heritage or hydrologic features and the existence of intervening development, roads, or other physical features.*

Since the BUEA is now located within the Urban Area, language related to the rural settlement areas wouldn't be applicable; otherwise, this policy is suitable for the BUEA.

> *5.3.7.8 Outside the Urban Area boundary, the vegetation protection zone required for the protection of natural heritage or hydrologic features and their ecological functions shall not be less than 30 metres, but may be greater if supported by an EIS, or if required by the relevant provisions of the Greenbelt Plan or Oak Ridges Moraine Conservation Plan. Within the Urban Area boundary, the following minimum vegetation protection zones shall be required for protection of natural heritage or hydrologic features and their ecological functions:*
>
> *a) 10 metres from the dripline of a woodland;*
>
> *b) 10 metres from the top of bank or the projected stable long-term top of slope within the erosion hazard for valleylands;*
>
> *c) 30 metres from a Provincially significant wetland;*
>
> *d) 15 metres from all other wetlands;*
>
> *e) 30 metres from the centre line of a cold or cool water watercourse;*
>
> *f) 15 metres from the centre line of a warmwater watercourse; and*
>
> *g) any relevant requirement under the Endangered Species Act. The final delineation of the vegetation protection zone shall be determined through an EIS which may exceed the minimum distances. Notwithstanding the foregoing, within the Urban Area boundary, the minimum vegetation protection zone may be reduced where it is not feasible to provide the minimum distances due to existing development or other restrictions, and subject to the determination of an EIS and the approval of the Municipality and the Conservation Authority.*

Since the BUEA is now located within the Urban Area, language related to lands outside the Urban Boundary Area and rural settlement areas wouldn't be applicable; otherwise, this policy is suitable for the BUEA.

> *5.3.7.9 The vegetation protection zone is to be established and maintained as a natural self-sustaining vegetated area of a width sufficient to protect the key natural heritage feature or key hydrologic features and its functions from any negative impacts of the proposed development.*

This is suitable to be included in the policies set out for BUEA, though Dillon recommends that the policy directs that vegetation protection zone widths should be established through site level studies such as an EIS. However, this policy should not supersede Official Plan Policy 5.3.7.8 that sets minimum vegetation protection zones for specific features within the Urban Boundary.

> *5.3.7.10 Notwithstanding Section 5.3.7.6, within the Greenbelt Protected Countryside, expansions to existing agricultural buildings or structures or associated residential uses may be permitted within the Natural Heritage System provided that no other alternative exists, development is within close proximity to the existing structure, the expansion is limited in scope and directed away from any natural heritage or hydrologic features, and impacts on the features and function is minimized to the maximum extent possible. Expansions to existing agricultural buildings or structures may be subject to the requirement for a scoped EIS in accordance with Section 5.4.2.5.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.11 Within the Greenbelt Natural Heritage System, new buildings and structures for agricultural, agriculture-related or on-farm diversified uses are not subject to the policies of Section 5.4.2 if a minimum 30 metre vegetation protection zone is provided. In addition, the condition of natural self-sustaining vegetation for the vegetation protection zone is not required if the land is and will continue to be used for agriculture.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *5.3.7.12 The policies of this Plan shall also apply to any key natural heritage or hydrologic feature which has been identified by the Municipality, the Region, the Conservation Authority, or the Province, but which is not presently shown on Schedule "C" or Secondary Plan schedules. Where such a feature is not shown on Schedule "C" or Secondary Plan schedules, it does not necessarily mean that the feature or any part thereof may be developed or altered in any way. Should a key natural heritage or hydrologic feature be identified through the development review process, the preparation of an EIS in accordance with the policies of Section 5.4.2 of this plan, or other assessment as deemed appropriate, may be required. Where a key natural heritage or hydrologic feature has been identified, Appendix 1 will be updated as required.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.13 The identification and protection of linkages between areas identified as Natural Heritage System shall be undertaken during the preparation of Secondary Plans and considered through the development approval process in order to provide opportunities for plant and animal movement and to contribute to the connectivity of the Natural Heritage System. Linkages recommended in relevant watershed plans shall be considered as part of this exercise. Where identified, linkages shall be protected as a component of the Natural Heritage System through the Zoning By-law. Linkages are also encouraged to be protected through private land stewardship.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.14 Where any feature in the Natural Heritage System is damaged or removed without appropriate approvals, the Municipality shall require the reinstatement of the feature(s). Furthermore, the Municipality will not consider the removal of the feature as being the basis for any application seeking development approvals on the affected lands.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.15 Where lands shown as Natural Heritage System are also shown as Natural Hazards on Schedule "C", the more restrictive policies shall apply.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.16 Where lands shown as Natural Heritage System are privately owned, it is not intended that they are free and open to the general public or that they will be acquired by the Municipality or other public agency.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.17 Lands shown as Natural Heritage System and their associated vegetation protection zone shall generally not be accepted as contributing toward the parkland dedication requirements of the Planning Act.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.18 Infrastructure within or adjacent to the Natural Heritage System shall also be subject to the policies of Section 8 of this Plan.

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

5.3.7.19 Mineral aggregate extraction and operation within or adjacent to the Natural Heritage System shall also be subject to the policies of Section 4.12 of this Plan.

As the lands associated with the BUEA have been designated for Employment Areas and Community Areas, this policy is not applicable and should not be included.

The policies reviewed below are related to the Town's OP policy related to the NHS of the Brooklin Secondary Plan:

> *11.5.25.1 Lands designated as Natural Heritage System on Schedules "K" and "K1" fall within the Major Open Space designation on Schedule "A" and shall be subject to the policies of Section 5.3.7, except as modified by the following additional policies.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.2 The components of the Natural Heritage System were identified through the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016). Reference shall be made to this study when determining which natural heritage features comprised the Natural Heritage System at the time of this study and when reviewing development applications and supporting studies.*

Since the entirety of the BUEA parcels were not included in the Brooklin Secondary Plan and therefore may not have been covered by the Brooklin Secondary Plan Area Natural Heritage Assessment Background Report (Beacon, 2016), Dillon suggests that this policy be revised to say "where applicable" at the end of the last sentence.

> *11.5.25.3 The extent and boundary of the Natural Heritage System is conceptual. The exact boundary shall be determined through an Environmental Impact Study (EIS) and feature staking to the satisfaction of the Municipality in consultation with the Conservation Authority. The boundary of the Natural Heritage System may be refined with additions and deletions without an amendment to the Plan.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.4 The Natural Heritage System includes all known permanent and intermittent streams which are delineated on Schedule "C". A number of the streams shown on Schedule "C" are headwater streams. The status as intermittent versus ephemeral has not been confirmed for some headwater streams. The "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016) identifies these streams as subject to further study. A Headwater Drainage Feature Assessment will be required to the satisfaction of the Municipality and the Conservation Authority, in consultation with the Ministry of Natural Resources and Forestry, prior to approval of development adjacent to those streams. The assessment shall evaluate and classify the drainage feature status based on criteria established by the Conservation Authority and shall determine if the drainage features are to be maintained. Where authorized by the Conservation Authority and the Municipality, in consultation with the Ministry of Natural Resources and Forestry, the removal of a drainage feature from the Natural Heritage System may occur without an amendment to the Plan.*

Note that the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016) does not consider all of the BUEA parcels. Dillon suggests that for BUEA policy, wording is added that streams within some BUEA parcels have not been previously studied through the Brooklin Secondary Plan process and will need to be surveyed for other permanent and intermittent streams.

Furthermore, the Ministry of Natural Resources and Forestry does not regulate headwater drainage features and is not required to be consulted on this matter. Dillon suggests the removal of the reference to the Ministry of Natural Resources and Forestry from the policy. Instead, we suggest that it should be done in consultation with DFO, or applicable provincial or federal agencies, where needed.

> *11.5.25.5 A number of small isolated natural heritage features are designated as part of the Natural Heritage System on Schedule "C". Other than any natural heritage feature that is an identified Provincially Significant Wetland, further study through an EIS is required to determine the significance of these features and the appropriateness of inclusion in the Natural Heritage System prior to approval of any development. These features that are subject to further study are identified in the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016). An EIS shall be required to determine:*
>
> > *a) if the feature is considered not to be a key natural heritage feature as set out in Section 5.3.7.1 or a linkage as identified on Schedule "K". In this case, the feature may be removed without an amendment to the Plan;*
> >
> > *b) if the feature is a key natural heritage feature but has limited function. In this case, the feature may be removed without an amendment to the Plan, at the discretion of the Municipality in consultation with the Conservation Authority, provided compensation is made which could include additional dedicated land and/or the construction and restoration of similar features elsewhere in the Secondary Plan Area adjacent to, or, where appropriate, within the currently designated Natural Heritage System in the Secondary Plan Area without an amendment to the Plan; and*
> >
> > *c) if the feature is a key natural heritage feature and must be retained insitu. In this case, the EIS shall consider the feasibility of alternatives to re-connect or create linkages from the feature to the broader Natural Heritage System.*

Note that the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (Beacon, 2016) does not consider all of the BUEA parcels. Dillon suggests that for BUEA policy, wording is added that Natural Heritage Features within some BUEA parcels have not been previously studied through the Brooklin Secondary Plan process and will need to be surveyed for at site-level studies, such as an EIS.

> *11.5.25.6 Where a feature or portion of a feature is removed or reduced in accordance with Sections 11.5.25.3, 11.5.25.4 and 11.5.25.5, the urban designation abutting the feature shall apply.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.7 In addition to the requirements of Section 5.3.7.3, feature staking, erosion analysis, confirmation of the Natural Heritage System boundaries and determination of the appropriate extent of vegetation protection zones beyond those set out in Section 5.3.7.8 shall be required through the completion of an EIS prior to approval of development.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.8 The Natural Heritage System incorporates a number of linkages as identified in the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016). These linkages are schematically shown on Schedule "K." The EIS required for development shall identify how these linkages will be restored and enhanced through the development process. Stormwater management facilities may be located within linkages provided the EIS demonstrates that the linkage functions will be maintained, and there is no impact to adjacent natural heritage features.*

Note that the "Brooklin Secondary Plan Area Natural Heritage Assessment Background Report" (December 2016) does not consider all of the BUEA parcels. Dillon suggests that for BUEA policy, wording is added that linkages within BUEA parcels have not been previously studied through the Brooklin Secondary Plan process and will need to be assessed at site-level studies, such as an EIS.

> *11.5.25.9 The northern extension of Cachet Boulevard crosses one of these linkages. The EIS required for development in that area shall identify appropriate design considerations for the collector road to ensure the function of the linkage is maintained.*

Not applicable to BUEA.

> *11.5.25.10 The hydro corridor south of Highway 407 also serves as an open space linkage. The Municipality shall encourage Hydro One to maintain it as a grassland area.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.11 The EIS required for development adjacent to the Natural Heritage System shall also identify opportunities for restoration and enhancement of riparian habitat within the Natural Heritage System including opportunities to restore meandering channels in previously straightened watercourses.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

> *11.5.25.12 Restoration and enhancement is particularly important along all stream reaches providing contributing, occupied and recovery habitat for Redside Dace. Protection of these watercourses must conform to the requirements of the Ministry of Natural Resources and Forestry and comply with the provisions of the Endangered Species Act.*

This policy is suitable to be included in the policies set out for BUEA; however, Dillon recommends that verbiage should be added referencing that requirements of DFO and other applicable federal or provincial agencies should be adhered to.

> *11.5.25.13 The final location and design of all required road and servicing crossings of Redside Dace habitat shall be evaluated and designed according to the Ministry of Natural Resources and Forestry's "Guidance for Development Activities in Redside Dace Protection Habitat" and shall be designed to: a) minimize the number of stream crossings to generally no more than one crossing per kilometre of stream; b) minimize lengths and widths of crossings; c) cross at straight sections of a stream; d) be located where possible at previously disturbed areas; e) minimize the width of the facility within the regulated habitat; f) co-locate various infrastructure within the crossing to minimize the number of crossings; g) adhere to appropriate timing windows during construction; h) incorporate effective erosion and sediment control measures.*

No updates suggested for this policy. It is suitable to be included in the policies set out for BUEA.

Durham Region Official Plan, 2020

In November 1993, the Region's new Official Plan was approved by the Ministry of Municipal Affairs and Housing. This plan replaced the former ROP, which was prepared in 1976. The ROP was then reviewed and update through Regional Official Plan Amendment (ROPA) 114 (2006) and ROPA 128 (2009).

As per Map A4, in general, the BUEA lands are located within the Employment Areas and Living Area. As previously discussed as part of the Town's OP analysis, the BUEA land on Schedule A4 are subject to Envision Durham Policy 14.13.7. Furthermore, on Map B1d, Key Natural Heritage and Hydrologic Features, Greenbelt Natural Heritage System and Urban Areas overlap with the BUEA lands.

A list of ROP Policies that would be applicable to the BUEA lands are included below, with some commentary, if needed.

Section 2 - Environment

- Section 2.2 General Polices: 2.2.1-2.2.3, 2.2.6, 2.2.7, 2.2.9, 2.2.12. Note that reference to Dynamic Beach Hazards would not apply to the BUEA lands.
- Section 2.3 Policies: 2.3.1, 2.3.2, 2.3.7, 2.3.13-2.3.16, 2.3.18, 2.3.19, 2.3.22, 2.3.24, 2.3.43, 2.3.44, 2.3.50, 2.3.51, 2.4.1d.

Section 8 – Urban System

- Section 8.1 Goals: 8.1.6.
- Section 8.2 General Policies: 8.2.1h.

Section 10 – Greenlands System

- Section 10.2 General Policies: 10.2.1, 10.2.3-10.2.5.

- Section 10.3 Policies: 10.3.1-10.3.4, 10.3.8.

Sub-Section 10A – Major Open Space Areas

- Section 10A.2: 10A.2.1, 10A.2.2, 10A.2.4, 10A.2.5, 10A.2.8.

Section 14 – Implementation

- Section 14.3 Area Municipal Plans: 14.3.1-14.3.3.

While the Town is establishing policies for the BUEA, the above listed ROP Policies should be integrated in some manner. As mentioned in Policy 14.3.1: *Area municipalities are required to prepare and adopt a new area municipal official plan or appropriate amendment to existing official plans in conformity with this Plan.*

Dillon has reviewed the above listed ROP policies against the Town OP policies applicable to the BUEA lands and determined that the Town's policies are in general conformity with the ROP. Though, Dillon would like to note that there are several policies in the ROP that could be incorporated into BUEA policy:

ROP policy 2.2.9 states that *"The use of various land securement tools is supported as a means of protecting and enhancing the Region's natural environment."* Therefore, note that the Region supports securing lands within the NHS to promote protections and enhancement. More detail on the Region's involvement on this can be found in ROP Policy 2.3.50.

ROP Policy 2.2.12 provides direction regarding light pollution the Town could lean on:

> *The use of light pollution abatement measures are encouraged, to avoid and reduce light trespass, glare, over-lighting and 'uplight'. The intent is to conserve energy, improve pedestrian and road safety, contribute to an aesthetically pleasing nighttime environment, and protect the night sky for its scientific and natural interest, and educational value. Outdoor lighting shall also be directed away from key natural heritage and/or hydrologic features and their associated vegetative protection zones.*

ROP Policy 2.3.7 (listed below) discusses recreation uses that are permitted in the NHS. More on recreational uses within Major Open Space Areas is found within ROP Policy 10A.2.8.

> *Pedestrian, bicycle and bridle paths may be permitted in any designation, provided that the functions and features of key natural heritage and hydrologic features and agricultural operations are not adversely affected. The fragmentation of valleylands, including ownership patterns, shall be discouraged.*

ROP Policy 2.3.19 speaks to management of woodlands, which could help inform BUEA policy when determining the significance of woodland features.

ROP Policy 10A.2.1 provides direction regarding how municipal plans… "may further distinguish between non-agricultural uses which are compatible with the character of the Major Open Space Areas in urban and rural areas."

Envision Durham

In 2019, the Region launched Envision Durham – the Municipal Comprehensive Review of the Durham Official Plan. This review considered how and where the municipalities will grow, how to protect land and resources, what how type and job opportunities is needed for the residents and how people and goods will move across the Region. The new ROP was adopted by Council on May 17, 2023.

Policies within Envision Durham should be considered when establishing BUEA-specific policies. A list of Envision Durham Policies that would be applicable to the BUEA lands are included below:

Chapter 7 – Protected Greenland Systems

- Section 7.1 – General Green System Policies: 7.1.1-7.1.18.
- Section 7.2 – Greenbelt Urban River Valleys: 7.2.1-7.2.5.
- Section 7.4 – Regional Natural Heritage System: 7.4.1-7.4.13, 7.4.151 7.4.17-7.4.29.
- Section 7.5 – Water Resources System:7.5.1-7.5.17.
- Section 7.6 – Natural and Human Made Hazards: 7.6.1-7.6.14.
- Section 7.7 – Environmental Stewardship: 7.7.1-7.7.16.

Dillon has reviewed the above listed Envision policies against the Town OP policies applicable to the BUEA lands and determined that similar to the ROP (2020), the Town's policies are in general conformity. The Town should review Section 7.7 for suggestions from the Region regarding the integration of traditional ecological knowledge, invasive species management, ecosystem compensation and land securement.

Mapping Review

The Town's NHS from their OP's Schedule C was compared against the Region's NHS on Schedule B and only four minor discrepancies were noted within the BUEA (refer to **Figure 3**). Through a desktop review it appears that the Town's NHS mapping generally aligns with natural heritage features on the landscape within the BUEA.

Furthermore, some parcels within the BUEA overlap with the areas that were studied though the *Brooklin Secondary Plan Area Natural Heritage Assessment Background Report* (Beacon Environmental Limited and R.J. Burnside and Associates Limited, 2016). The Town's NHS layer better aligns with the NHS that was established as part of this background report when compared to the Region's NHS. This is shown on **Figure 3**, where there were two discrepancy areas (yellow circles numbered 1 and 2) between the Town's NHS and the Region's NHS (located between Coronations Road and Ashburn Road). In these two instances, the NHS established as part of the background report match the Town's NHS rather than the Region's.

Additionally, there are two discrepancies between the Town's and Region's NHS just south of Highway 7, east of Highway 412 within the parcels of the BUEA that were not previously studied. In this case, based on aerial imagery and street view, these two discrepancy areas (highlighted with yellow circles numbered 3 and 4 on **Figure 3**) overlap with wooded areas. Theses two specific woodland fingers appear quite small on aerial imagery, and likely would be excluded from the NHS based on their width. Beacon

Environmental Limited and R.J. Burnside and Associates Limited (2016) had excluded hedgerows from the NHS during their study (i.e. features with a ratio less than 3:1 length to width ratio). On this premise, these two wooded fingers should not be included within the NHS. The Town's NHS excludes these two hedgerow features while the Region includes them, and therefore, the Town's NHS is more aligned with the existing NHS.

Note that further refinement of the NHS may be possible through confirmatory site visits.

Recommendations

The Dillon team recommends that the Town take into consideration what we have presented in this technical memo when establishing polices for the BUEA. Moreover, we recommend the use of the Town's NHS layer to show the BUEA's NHS.

Summary

Overall, previous policy established to guide the growth of the BUEA is mostly up to date and sufficiently protects the NHS. Within this memo, we have identified where policies are out of date due to the changing provincial and regulatory policy. Discrepancies between the Region's and Town's NHS system have been highlighted on **Figure 3**. Through the background review and review of aerial imagery, it was determined that the Town's shapefile containing the NHS layers would be appropriate to used for the BUEA.

Next Steps

As previously mentioned, no site visits have been conducted to inform this technical memo, however, as part of the next phase of review, there may be a need to conduct confirmatory site assessments where access is granted or via windshield survey to confirm recommendations provided herein.

If any questions come up during the review of this technical memo and through the natural environment policy created for BUEA, please don't hesitate to contact Whitney Moore at: 613.745.2213 ext. 3040 or WMoore@dillon.ca.

Appendix A

Figures

WHITBY OFFICIAL PLAN NATURAL HERITAGE REVIEW

BROOKLIN EXPANSION AREA

SITE LOCATION

FIGURE 1

- Brooklin Urban Expansion Area
- Highway
- Major Road
- Minor Road
- Watercourse
- Water Body

Region of Durham Data per Envision Durham new Regional Official Plan - as adopted by Region of Durham: not yet approved by Province

KEY MAP



SCALE 1:25,000

0 300 600 1,200 m

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, ENVISION DURHAM, DURHAM REGION OPEN DATA, TOWN OF WHITBY OPEN DATA

MAP CREATED BY: ZJB
MAP CHECKED BY: AC
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

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DATE: 2024-04-22

WHITBY OFFICIAL PLAN NATURAL HERITAGE REVIEW

BROOKLIN EXPANSION AREA

BACKGROUND REVIEW

FIGURE 2

- Brooklin Urban Expansion Area
- Highway
- Major Road
- Minor Road

Ministry of Natural Resources and Foresty

- Watercourse
- Water Body
- Provinically Significant Wetland
- Wooded Area
- Candidate ANSI, Life Science
- ANSI, Earth Science
- Natural Heritage System

Central Lake Ontario Conservation Authority

- Regulated Area

Region of Durham Data per Envision Durham new Regional Official Plan - as adopted by Region of Durham: not yet approved by Province

SCALE 1:25,000

0 300 600 1,200 m

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, ENVISION DURHAM, DURHAM REGION OPEN DATA, TOWN OF WHITBY OPEN DATA, CLOCA OPEN DATA

MAP CREATED BY: ZJB
MAP CHECKED BY: AC
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

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WHITBY OFFICIAL PLAN NATURAL HERITAGE REVIEW

BROOKLIN EXPANSION AREA

MUNICIPAL AND REGIONAL NS COMPARISON

FIGURE 3

- Brooklin Urban Expansion Area
- Natural Heritage System Discrepancies within the BUEA
- Highway
- Major Road
- Minor Road

Ministry of Natural Resources and Forestry

- Watercourse

Draft Regional Official Plan

- Natural Heritage System (Draft ROP)

Town of Whitby Official Plan

- Natural Heritage System

Region of Durham Data per Envision Durham new Regional Official Plan - as adopted by Region of Durham: not yet approved by Province

SCALE 1:25,000

0 250 500 1,000 m

MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, ENVISION DURHAM, DURHAM REGION OPEN DATA, TOWN OF WHITBY OPEN DATA

MAP CREATED BY: -ZJB/DU
MAP CHECKED BY: -AC
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

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DATE: 2024-05-24

Appendix B

Appendix B – Details of Cultural Heritage Sites

The following table shows the heritage sites identified by Unterman McPhail Associates in Cultural Heritage Technical Report in 2019 that fall within the Brooklin expansion areas.

Cultural Heritage Properties within Brooklin Expansion Areas

Site	Type	Address	Photograph
NW2	Farmstead	7963 Ashburn Rd.	
NW3	Farmstead	740 Brawley Rd. W.	
NW4	Farmstead	860 Brawley Rd. W.	

Site	Type	Address	Photograph
NW5	Farmhouse	920 Brawley Rd. W.	
NW7	Farmstead	7762 Cochrane St.	No Photograph available
NW8	Farmstead	7801 Cochrane St.	
NW9	Farmstead	740 Columbus Rd. W.	

Site	Type	Address	Photograph
NW10	House	840 Columbus Rd. W.	
NW11	School	7035 Country Lane	
NW12	Road	Brawley Rd.	No Photograph available
NW13	Road	Columbus Rd. W.	No Photograph available
W3	Farmstead	835 Columbus Rd. W.	

Site	Type	Address	Photograph
W4	Farmstead	6472 Country Lane	
W7	Farmstead	540 Winchester Rd. W.	
W9	Road	Country Lane	No Photograph available



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