

3.0 Environmental Constraints and Opportunities

3.1 Significant Natural Environment Features

3.1.1 Forest

The more significant forested areas are those that represent larger areas that have had generally less impacts related to human disturbances such as logging and pasture and have an associated lower degree of fragmentation. The most prominent of these areas is the more mature portions of the sugar maple – beech deciduous forest on the north side of the beaver pond and on either side of the First Line Road allowance in the northwest portion of the study area. In addition to the mature deciduous trees, good regeneration of balsam fir and white cedar is common. These pristine forested areas have high aesthetic qualities and provide a variety of wildlife habitat, including area sensitive breeding birds and corridor functions. Other forested areas identified as higher quality on Figure 1 include the more contiguous and denser portions of the other maple, mixed and lowland forests.

To a lesser extent the mixed and lowlands forests adjacent to the south side of the marsh community possess these characteristics, although the human disturbance and site fragmentation associated with this community is greater, especially in light of recent clearing activity for residential developments. Some larger bur oak and white spruce trees remain among white cedar, sugar maple and balsam fir trees immediately south of the marsh community, but much of the forest has been removed.

3.1.2 Bedrock

Small areas of bedrock outcrops scattered throughout the study area are of interest as these habitats often support different vegetation communities and associated wildlife than found in the adjacent forested areas. The generally smaller size of the outcrop areas reduces the significance for fauna.

3.1.3 Wetlands

Wetlands are most visibly represented by the meadow marsh associated with the Beaver Pond. West of Goulbourn Forced Road, a greater amount of woody vegetation is present in the wetland communities including red-osier dogwood and white cedar. Two small areas of the South March Highlands Provincially-significant wetland complex are located in the west portion of the study area, approximately 150 metres east of the Carp River and extending to the east to the First Line Road unopened road allowance. Red maple, yellow birch and black ash dominate in this deciduous swamp.

The wetland areas provide important diversity for flora and fauna in addition to treatment of surface water flows and other hydrological functions.

3.1.4 Wildlife

The significant vegetation communities described above provide valuable wildlife habitat, such as larger areas of continuous forest, mature trees and snags for cavity nesters. The wetland and bedrock outcrop areas represent habitats with different vegetation communities and associated wildlife attributes. The open water portions of the Beaver Pond and adjacent marsh areas provide habitat for waterfowl.

Although not specifically identified in the above features, the less mature forests and meadows of the study area represent wildlife functions through providing adjacent habitat important to users of the core significant areas, and habitat for other wildlife assemblages requiring more open areas such as the eastern bluebird. Retention of some of the areas adjacent to the core areas will provide a buffer to the significant communities and some of these habitat specific features.

3.2 Planning Policy

3.2.1 Overview

The City of Ottawa's planning policies identify the need to protect and conserve recognized natural environment areas. The rate of development in the greater Kanata area is exerting increased pressure on existing natural environment areas and the following section summarizes the planning issues surrounding the Kanata Lakes NEA.

3.2.2 Amalgamation

On January 1, 2001 eleven municipalities were amalgamated with the Region of Ottawa-Carleton to become the new City of Ottawa. This has implications on the local planning policy. Currently there are twelve Official Plans, one for each of the eleven former municipalities and one for the former Region of Ottawa-Carleton. The Region of Ottawa-Carleton's Official Plan sets out the general land uses for the City. The local plans are specific to each community. For the time being each plan keeps it's relevance, however City staff expect the twelve plans to be integrated into one Official Plan in the next two years. Although each of the former municipalities Official Plans conforms to the Region of Ottawa-Carleton Official Plan, the wording in each plan varies. In order to ensure that the recommendations in this report are compatible with future Official Plan work a review of relevant sections of the City of Kanata, and Region of Ottawa-Carleton's Official Plans was done for this report.

3.2.3 Existing Official Plan and Zoning Policies

Both the Region of Ottawa-Carleton and City of Kanata's Official Plans recognize the Kanata Lakes NEA as having significant environmental value.

Region of Ottawa-Carleton Official Plan

The Region of Ottawa-Carleton's Official Plan designates the Kanata Lakes natural environment area as NEA-A. The Regional Municipality of Ottawa-Carleton has two categories of Natural Environment Areas (A and B).

NEA-A is defined as natural areas of such high quality that development would pose a risk to their long-term management, restoration and enhancement. Lands designated are natural areas where continued public acquisition will lead to the consolidation of lands already in public ownership.

Permitted Uses (s.5.4.1):

- Open space and passive recreational uses
- Uses that help conserve and manage water supplies
- Uses involved in the study of natural characteristics
- Forestry practice done on a sustainable basis
- Established agricultural uses
- A single-detached dwelling and accessory buildings on each existing lot fronting on a public road
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- farm-related severances are permitted subject to a scoped EIS.

NEA-B (s.5.4.2)

NEA-B environment areas include significant wetlands (Class 1-3) as evaluated by the Province, Provincially significant areas of natural and scientific interest and some components of the National Capital Greenbelt natural system.

Permitted Uses:

- Open space and passive recreational uses
- Uses that help conserve and manage water supplies
- Uses involved in the study of natural characteristics
- Forestry practice done on a sustainable basis
- Country lot residential development subject to a scoped Environmental Impact Statement
- Established agricultural uses
- A single-detached dwelling and accessory buildings on each existing lot fronting on a public road. If possible, Approval authorities should ensure that new buildings are not constructed inside the NEA.
- farm-related severances are permitted subject to a scoped EIS.

The surrounding land is classified as General Urban Area (see Figure 3). The lands designated General Urban Area are to be used primarily for residential purposes and the shopping, services and community facilities required to meet day-to-day needs.

City of Kanata Official Plan

The City of Kanata's Official Plan designates the land as Natural Environment Area. The Natural Environmental Area includes sites where land forms, vegetation and topography

possess a high environmental value, are ecologically sensitive or have some other special characteristics that require protection from urban development (s.5.3.5.1).

Permitted Uses (s.6.4.2) :

1. Resource management in order to protect and maintain landforms, vegetation, drainage systems, wildlife and aquatic life;
2. Recreational activities, such as hiking and skiing
3. Educational and scientific research uses;
4. Storm water management facilities; and
5. Facilities accessory to the above, including parking

In the section of the Plan specific to Marchwood-Lakeside it is explained that there are two categories of Natural Environment Areas, Category A and Category B. Category A refers to large ecosystems such as the Kanata Pond/Kizell Creek Drainage Area and the deciduous forest on the Goulburn Forced Road. Category B refers to the mica quarry, Marchwood Canyon and the Lismer Pines. With respect to the Category B Natural Environment Area, subdivision agreement provisions shall be used to ensure the preservation and maintenance of these features as the adjacent lands are developed. Safety measures may be required and will be specified in the subdivision agreement (s.5.3.5.2). City of Kanata staff indicated that Marginal Resource Restricted is a designation equivalent to the Region's NEA-B designation.

Approximately 85% of the land north of the Kanata Lakes NEA is designated Residential by the Official Plan. The designations are Low Density Residential and Medium Density Residential. Portions of the property are designated Community Commercial, Institutional and Park & Open Space. The land outside the urban boundary is currently designated Marginal Resource Restricted and Agricultural Resource. The lands are considered environmentally sensitive and single family residential uses, agricultural and forestry pursuits are permitted. The policy states that in response to an application to sever or subdivide areas, Council may decide to acquire such lands (s.4.4.1). The City of Kanata's Official Plan designations are shown in Figure 4.

City of Kanata Zoning By-law

Kanata's zoning by-law 167-93 defines the land surrounding the Beaver Pond as Open Space. The lands south of the Kanata Lakes NEA are various types of residential zoning. Much of the land north and west of Beaver Pond fall under the South March Township by-law 552 and are zoned Marginal Resource Restricted. This is shown in Figure 5.

3.2.4 Agreement with Landowners

It is intended that the Kanata Lakes NEA be managed through public ownership. This will provide the City with the greatest possible conservation management flexibility (Brunton 1992).

In 1981, the City of Kanata entered into an agreement with the current landowner at that time, Campeau Development Corporation that stated that the NEA lands owned by the developer shall be deeded to the municipality when they are defined by plans of subdivision. This agreement transferred to the current property owner, KNL. Other areas

may also be included in the Natural Environment Area, pursuant to the 40% open space agreement between the City of Kanata and the developer (s.6.4.2.4). This will be approved in the Plan of Subdivision approval process.

The realignment of Terry Fox created an opportunity for the expansion of the Kanata Lakes NEA. W.J. Richardson, J&C Burke and E.A.B. Management Co. Lands own the private property west of Goulbourn Forced Road. The Richardson family runs an active farm fronting on Richardson Side Road (Brunton 1992). As the provincially significant wetlands and higher quality forest within the lands are compatible with the existing NEA, it is recommended that the land west of Goulbourn Forced Road also be designated NEA-A. Financial compensation to landowners may be appropriate where zoning changes result in a loss of development potential (Brunton 1992). However, if the lands cannot be acquired by the City, individual land owner co-operation is a possibility. The boundaries of the NEA are discussed further in Section 3.3.

3.2.5 Stormwater Facility Approval Process

As land is developed, the stormwater management strategy will change to accommodate increased runoff. Stormwater management is addressed further in section 4.0 of this report. The existing stormwater pond is an existing utility and therefore permitted in the Kanata Lakes NEA. Any new stormwater facilities would need to go through the approval process.

The stormwater facility can be approved through the Plan of Subdivision application process as the desirability of integrating the planning processes and approvals under the *Environmental Assessment Act* and the *Planning Act* is recognized. The approved Class Environmental Assessment for Municipal Water and Wastewater Projects Document prepared by the Municipal Engineers Association in June 1993 and updated in June 2000 states that the modification of a stormwater facility would require a Schedule B Class Environmental Assessment. However, if a project which would otherwise be subject to a Class EA comes into effect or receives approval under the Planning Act and meets the intent of the Class EA then that project is considered to be a Schedule A under the Municipal Class EA and pre-approved.

In section 1.6.3 of the Region's Official Plan, it is stated that public utility facilities subject to requirements of the *Environmental Assessment Act* may be permitted in all land use designations. This means any new stormwater facilities would be permitted under the Region's Official Plan as long as the requirements under the *Environmental Assessment Act* are met.

Subsection 3.3.2 of the City of Kanata's Official Plan states that public uses are permitted in all of the land use classifications except Agricultural Resource. Subsection 3.3.6 emphasizes the responsibility to evaluate impacts pursuant to the Environmental Assessment Act.

3.2.6 Piped Utilities Approval Process

Similar to stormwater facilities, piped utilities are permitted if they have met the requirements under the *Environmental Assessment Act*. Before piped utilities are proposed in the Kanata Lakes NEA, the City should require the applicant to prepare an Environmental

Assessment. It would be important to address both the impact of the utilities and the impact of the construction process on the natural environment area.

In section 1.6.3 of the Region's Official Plan, it is stated that public utility facilities subject to requirements of the *Environmental Assessment Act* may be permitted in all land use designations. This means that piped utilities would be permitted under the Region's Official Plan as long the requirements are met under the *Environmental Assessment Act*.

Subsection 3.3.2 of the City of Kanata's Official Plan states that public uses are permitted in all of the land use classifications except Agricultural Resource. Subsection 3.3.6 emphasizes the responsibility to evaluate impacts pursuant to the *Environmental Assessment Act*.

For piped utilities all other options should be explored first and piping in the Kanata Lakes NEA should be discouraged and only considered as a last resort. In cases where this is considered an Environmental Assessment should be done and to consider the short and long-term impacts and recommend mitigation measures for both the permanent installation and the construction techniques to be used.

3.3 Boundaries

At the present time, the boundaries of the Kanata Lakes NEA are defined at a high level and do not consider the natural features or recreational benefit of certain areas.

It is recommended that the boundaries of the existing NEA be adjusted to reflect the location of natural features. This will result in a slight gain in overall area. The vegetative communities and natural features are shown on Figure 1. The Official Plans of both the City of Kanata and the Regional Municipality of Ottawa-Carleton state that the boundaries are approximate and can be altered without an amendment to the Official Plan (ROC Official Plan s.5.4.1.2 and s.5.4.2.2, City of Kanata Official Plan s.6.4.2.1).

In addition to the natural value of the Kanata Lakes NEA there is also an extensive network of pathways. It is recommended that some areas of the boundary be redefined to retain existing recreational pathway systems. The recreational pathway system is described in more detail in the next section (3.4).

As part of the scope of work, CH2M HILL was asked to investigate the feasibility of expanding the Kanata Lakes NEA between the First Line Road Allowance and the proposed extension of Terry Fox Drive. It is recommended that a portion of land be added to the Kanata Lakes NEA. See Figure 6. The provincially significant wetlands and higher quality forest within the lands are compatible with the existing NEA. Terry Fox Drive would serve as a development buffer between the surrounding residential/commercial developments and the conservation area (Brunton 1992). Protecting this land which includes a portion of Provincially Significant wetland is consistent with the Ontario Wetlands Policy, issues 24 June 1992. Each municipality in Ontario, under the Planning Act is obliged to "...have regard to..." this policy, which prohibits development in all wetlands in Kanata (Brunton 1992). In 1992, Brunton suggested that Kanata's Official Plan should be revised, as it allows for compatible development in a wetland area in section 3.7.4 and is not consistent with the Provincial Policy (Brunton 1992).

In order to keep consistency across the Kanata Lakes NEA it is recommended that the Official Plan and zoning designation be amended for the new portion of the NEA. The recommended change is from a Marginal Resource Restricted designation to a Natural Environment Area Official Plan designation and an Open Space zoning designation. The land surrounding the Beaver Pond is zoned Open Space and the recently approved Teron development necessitated a zoning amendment adding the property to by-law 167-93 and changed the designation of the portion of land in the NEA to Open Space. It is expected that when lands owned by KNL are defined in Plans of Subdivision, the land pertaining to the Kanata Lakes NEA will be zoned Open Space.

The Marginal Resource (Restricted) designation permits non-intensive rural development appropriate with the existence and viability of significant environmental features. Currently, single family residential uses and agricultural and forestry pursuits are permitted. The policy states that in response to an application to sever or subdivide areas, Council may decide to acquire such lands (s.4.4.1, City of Kanata OP). The designation is similar to the Region's NEA-A except that acquiring lands is not a priority unless there are development proposals to sever lands. Changing the designation to be consistent with the rest of the Kanata Lakes NEA is more conducive to Natural Environment Area being recognized as a system and will allow the City flexibility for future management of the NEA.

In section 5.3.5.3 of the City of Kanata's Official Plan states that the boundary of the natural environment area shall take into consideration the location of the Black Cherry trees on the north side of Kanata Pond, existing foliage boundaries and topography. This should be revised as on our site visits we found black cherry trees were not dominant in the portion of the forest within the NEA.

Figure 6 shows the new proposed Kanata Lakes NEA boundary. The proposed line is defined primarily by existing development along the southeast, conservation of continuous recreational pathways along the north and south boundary in the centre of the area and natural environment features to the west.

3.4 Recreational Potential

An extensive network of pathways has developed in the Kanata Lakes NEA. The pathways are used often by surrounding residents and also by members of the public from across Ottawa. The pathway system is also used by members of the high-tech community as a result of its close proximity to the Kanata North Business Park. The existing trails are shown on Figure 7.

It is recommended that the NEA boundary be adjusted to ensure the complete East-West system of trails is maintained and allow the trails to form naturally. The current EA boundary excludes a large section of trails located slightly north of the boundary.

The potential exists to create linkages between the NEA, South March Highlands and Trillium Woods. This would enhance the trail network (stone dust surfaced bicycle trail) constructed in Trillium Woods in 1990 which connects it to the adjacent Morgan's Grant and Kanata Lakes communities. Subsection 5.3.3.9 of the City of Kanata's Official Plan requires a

multi-use asphalt pathway to parallel Goulbourn Forced Road north of Richardson Side Road. This pathway has already been constructed (Dillon Consulting, J.L. Richards, 2000).

There are existing trails within the east-west pathway network in the Kanata Lakes NEA which link or come close to Trillium Woods and it is suggested that these linkages be maintained and enhanced. There is no linkage between the Kanata Lakes NEA and South March Highlands. It is suggested that trails be developed (or allowed to develop naturally) in the Hydro Corridor which cuts across the Kanata Lakes NEA and extends to the centre of the South March Highlands. It is suggested that a fourth linkage be introduced connecting the northwest corner of Trillium Woods to the southeast corner of the South March Highlands. The linkages are shown in Figure 7. Subsection 8.4 of City of Kanata's Official Plan requires the pathway system to link appropriate land uses and states that the location of the pathway system will be determined by plan of subdivision.

The Open Space Master Plan for Marchwood Lakeside recognizes the existing trails running along side of the Kanata Lakes NEA and recommends the trails be developed as paved recreational paths or as wood chip nature trails and link to surrounding neighbourhoods. A boardwalk was also proposed to give access across the swamp and to provide interpretive opportunities.

The condition of trails should be monitored to ensure that maintenance is done to prevent damage to the natural area. If new trails are introduced it is suggested that the materials used be sensitive to the surrounding environment. With the increased popularity of mountain bikes paved trails may not be necessary and more natural less intrusive trails might be a better fit in the Kanata Lakes NEA, many of the established trails are stone dust and this practice should be continued. To improve access to the NEA, paved bike trails within residential communities are still a good idea. In addition, the placement of new trails should consider the topography and vegetation.

Stormwater management inlets to the NEA often include the installation of additional forebays. It is recommended that a crossing is in place at all forebays or channels to ensure that trails are not interrupted. Currently, the pond has one forebay from the recent Genstar development. This has severed the continuous southern nature trail, it is recommended that it be reconnected via a crossing or walk-around path.

3.4.1 Wildlife Linkages

The combination of large uninterrupted forested areas, wetlands, abandoned farm fields, and hedgerows in the South March Highlands supports a high diversity of wildlife. There are up to 75 bird species, white-tailed deer and significant turtle species. The fauna of the South March Highlands NEA shares much in common with the Kanata Lakes NEA (Brunton 1992). The natural linkages identified in the Shirley's Brook/Watts Creek Subwatershed Plan included a wildlife corridor which extended along the western side of the Shirley's Creek and Kizell Drain watersheds through to the upper and mid reaches of Shirley's Brook (Dillon Consulting 1999). The Kanata Lakes NEA forms a portion of the wildlife corridor.

If residential development proceeds in the area between the Kanata Lakes NEA and the South March Highlands the natural wildlife corridor will no longer be intact. There is a

minor transmission line that extends northward along the First Line allowance and it is hoped that the hydro corridor will be used as a wildlife corridor between the natural areas. Hydro One will usually enter into park licenses with cities that wish to promote recreation in a corridor. A stone dust trail could be installed to make the land suitable for a walking or cycling or trails could be allowed to develop naturally as development proceeds around this area.