



CITY OF KINGSTON

INFORMATION REPORT TO PLANNING COMMITTEE

Report No.: PC-10-064

TO: Chair and Members of Planning Committee

FROM: Cynthia Beach
Commissioner, Sustainability and Growth

RESOURCE STAFF: George Wallace
Director, Planning and Development Department

DATE OF MEETING: 2010-07-22

SUBJECT: Forest Cover on Lands within the Urban Boundary

EXECUTIVE SUMMARY:

The urban tree and forest cover across the municipality has been identified as an issue for several years and has been of interest to Council throughout the Natural Heritage Study and the Official Plan process. The purpose of this report is to provide information to Planning Committee regarding the work that has been completed on the forest cover located within the urban boundary and several on-going City initiatives related to City owned trees.

The new City of Kingston Official Plan has used a 30% urban forest cover figure, patterned after guidelines from the Ministry of Natural Resources, as a minimum target for forest cover in the urban area. It is also aiming to maintain the existing forest coverage outside the urban boundary. Forest cover includes both significant and contributory woodlands.

Through the Natural Heritage Study, which has a very specific set of criteria, the total forest cover, including both significant and contributory forests in the City of Kingston is 34%. The urban area coverage is 22% and the rural area coverage is 38%. There are significant constraints to using these figures as total forest cover for the municipality.

A review of vacant land in the urban boundary used the assessment data. Vacant lands were confirmed by a review of the 2008 air photos. The amount of vacant land tree cover was determined to be 28%. By ownership, the tree cover on city owned vacant land was 27% and on privately owned vacant land was found to be 28%. It should be noted that these figures are only to be used as broad indicators as they do not take into account street canopy trees, or any tree cover found on private lands with buildings or city owned lands with buildings, excluding parks. As well, there are issues with using the 2008 air photos for tree cover calculation.

Each of the above measures of tree cover has constraints associated with their accuracy in measuring the urban tree cover. Through City initiatives such as the Natural Areas and Parkland Acquisition Policy and the Urban Forestry Management Plan, it is anticipated that the amount of forest cover on City owned lands will increase over time.

RECOMMENDATION:

This report is for information purposes.

AUTHORIZING SIGNATURES:

<p><u>ORIGINAL SIGNED BY COMMISSIONER</u> Cynthia Beach, P.Eng., MCIP, RPP, Commissioner, Sustainability and Growth</p>
<p><u>ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER</u> Gerard Hunt, Chief Administrative Officer</p>

CONSULTATION WITH THE FOLLOWING COMMISSIONERS:

Terry Willing, <i>Community Services</i>	√
Denis Leger, <i>Transportation, Properties and Emergency Services</i>	√
Jim Keech, President, <i>Utilities Kingston</i>	√

(NR indicates consultation not required)

OPTIONS/DISCUSSION:

The trees and forest cover across the municipality has been identified as an issue for several years and has been of interest to Council throughout the Natural Heritage Study and the Official Plan process. The purpose of this report is to provide information to Planning Committee regarding work that has been completed on urban forest cover located within the urban boundary and several on-going City initiatives related to City owned forest cover. The urban boundary for the purposes of this report is considered the boundary that was approved through the Official Plan and Urban Growth Study. For the purposes of this report, the terms forest cover, tree cover and woodland will be used interchangeably.

In June 2007, there was a motion passed by Planning Committee that:

“Whereas significant woodlots have been identified in the rural portion of the City of Kingston, as part of the Natural Heritage Study;

Whereas the protection of small woodlots within the urban boundary is also important to the overall health of the Kingston environment;

Whereas the identification of small wood lots within the urban boundary of the City was not part of the Natural Heritage Study;

Therefore be it resolved that staff be directed to bring back a report on how to identify woodlots within the urban boundary, including treed areas of less than a hectare, whether publicly or privately owned, and suggestions on how to protect existing woodlots from clear cutting prior to site plan approval so that this information can be used during the Official Plan review.”

The second part of the last clause regarding the protection of sites has been dealt with by several mechanisms such as site plan control approval, the passing of a Tree By-law in 2007 (amended in 2008 and 2009) to regulate the injury or destruction of trees and the passing of a Site Alteration By-law in 2008 requiring a permit to place or dump fill, remove topsoil, or alter the grade of the land on any lands not under the jurisdiction of the CRCA's regulations. Through these mechanisms and public education, the amount of tree clearing has been reduced in the municipality and where it has occurred, replacement trees have been planted.

Forest Cover Figures

One of the commonly used reference documents for the recommended amount of woodland or tree cover is the Environment Canada document: “How Much Habitat is Enough? Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern” (Second Edition, 2004). The document notes that at least 30% of a watershed should be in forest cover. The City watersheds are indicated on Schedule 6 of the Official Plan and are generally areas of land that drain downslope to a low point.

The City of Kingston's new Official Plan has used the 30% figure as a minimum target for forest cover in the urban area and is aiming to maintain the existing forest coverage outside the urban boundary (Section 2.8.2). Forest cover includes both significant and contributory woodlands. Significant woodlands are determined through mapping of the Natural Heritage Study or a site specific environmental impact assessment. Contributory woodlands are those treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, provision of clean air and the provision of wildlife habitat. Contributory woodlands include those treed areas, woodlots or forested areas that do not meet any of the criteria used to determine the municipality's significant woodlands, as determined in the Natural Heritage Study. All forest cover whether significant or contributory is encouraged to be considered in the preparation of an environmental impact assessment report to support any development application.

For the purposes of the Official Plan and this report, one of the methods that staff has used to calculate forest cover is to review the Natural Heritage Study.

Natural Heritage Study

The Central Cataraqui Region Natural Heritage Study (NHS) was completed in 2006 in a partnership including the City, the Cataraqui Region Conservation Authority (CRCA) and Loyalist Township. The study examined the natural heritage features that were set out in the Provincial Policy Statement (2005) such as significant wetlands, significant woodlands, significant valleylands, significant wildlife habitat and significant areas of natural and scientific interest. All of the natural features studied are reflected in the policies and schedules to the new Official Plan that was approved by the Ministry of Municipal Affairs and Housing in January 2010.

The NHS examined woodlands. No previous information or evaluations had been prepared for woodlands in the Central Cataraqui Region. There were five criteria used to identify the significant woodlands. These were: size, presence of interior habitat, riparian woodlands, proximity to other significant natural features, and age. The evaluation of significance was based on a minimum standards method, in which a woodland was considered significant if it met one or more of the criteria. The identification of trees that were considered were at least 2 metres high and had a visible trunk. These trees were identified based on air photo interpretation. For the City of Kingston, the 2004 colour air photos were used to assess woodland size, interior/edge habitat, connectivity and hydrological value. This method was consistent with that used in adjacent municipalities for natural heritage studies. It is important to note, however, that there was no field verification of any of the tree cover shown in the NHS and ultimately shown in the Official Plan.

There are woodlands that are not significant according to the above criteria; however, they contribute to the overall health and diversity of the natural heritage system. These contributory woodlands are important and should be maintained where appropriate.

Size

MNR guidelines suggest that forests greater than 40 hectares should be considered for significance in areas where forest cover is between 15% and 30% in a given watershed. Since forest cover was only slightly above this range for the Central Cataraqui area, 40 hectares was selected as the threshold patch size for woodland significance in the City of Kingston.

Interior Habitat

Interior forest habitat was based on some forest being present at least 100 metres from the edge of the forest and a minimum patch size of 4 hectares. Forest edges are sensitive to disturbances such as noise, air pollution, invasive non-native species and predators. In the City of Kingston, any woodland with any interior forest habitat was considered significant.

Riparian Woodlands

Another of the criteria applied involved woodlands adjacent to any watercourse or waterbody. The presence of woodlands located near watercourses, waterbodies and headwaters provide important hydrogeological functions which control, for example, erosion, sedimentation and nutrient inputs, moderate stream temperature and influence stream flows. These woodlands are also critical for many species of wildlife and fish and provide food and debris to streams as well as travel corridors for movement. All riparian and headwater woodlands within 30 metres of a waterbody or watercourse were identified as significant.

Connection to Significant Features

This criterion pertains to forest patches overlapping with or adjacent to (within 120 metres) or abutting with other significant features. Natural areas linked both spatially and functionally with more than one type of habitat will support more species of animals and plants. These areas include features such as Provincially Significant Wetlands and Areas of Natural and Scientific Interest (ANSI).

Age

The last criterion of the study focused on age. Woodland patches with old growth forest defined as communities of trees 100 years or older were considered significant. The Forest Resource Inventory Mapping from MNR (1978) was used to assess woodland age.

As mentioned above, if a forested area met any one of these criteria, it was considered significant. The CRCA used specialized software to provide the City with figures of forest cover based on the Natural Heritage Study. They found that the total forest cover, including both significant and contributory forests in the City of Kingston is 34%. The urban area coverage is 22% and the rural area coverage is 38%. While these are indicators of forest cover within the criteria of the study, there are constraints to using these numbers as a percentage of forest cover in the City of Kingston. These numbers do not account for many of the City's smaller and isolated forested areas, individual trees along streets and in backyards and lands that may not meet any of the criteria noted above in the NHS.

The CRCA has advised that they could reexamine the levels of forest cover with the new air photos; however, the constraints to accuracy would still be the same and they would result in figures currently related to the Natural Heritage Study.

Air Photo Coverage – 2008

The City purchased air photo coverage of the City in both 2004 and 2008. Aerial photographs are typically flown in the fall or early spring when there are no leaves on the trees so that the base land features can be examined through air photo interpretation. The air photos for 2008 were flown with leaf off and therefore it is difficult to measure forest cover unless staff has the appropriate air photo interpretation software or have an external expert in air photo interpretation complete the project.

The GIS group has noted that there are some concerns with the quality of the 2008 air photos and they recommend that they not be used for specific measurements and interpretation for exact tree cover. Therefore, to use the current air photos to calculate the amount of tree cover in the urban area is not recommended.

Vacant Land in the Urban Boundary

In 2004, there was a layer of tree cover created for the 2004 air photos by an external consultant. This layer has been updated since then through site plan circulations. This information was used as a source in the review of vacant lands in the urban boundary.

As an indicator of tree cover, a sample of all vacant lands within the urban boundary was undertaken using the assessment data to determine vacancy. The 2008 air photos were then used to refine the data, by eliminating all those lands that showed a building footprint on them as well as all areas subdivided since 2004. Each of the vacant parcels was visually checked against the 2008 air photos. The sample was also analyzed for public and private ownership.

Overall, the amount of tree cover on vacant land in the urban boundary was found to be 27.5%. It was found, by ownership, to be 27% of tree cover on city owned vacant land and 28% on privately owned vacant land. It should be noted that these figures are only to be used as broad indicators as they do not take into account street canopy trees, and any tree cover found on private lands or city lands with buildings on them except for parks. The tree cover located in City parks was included in the calculation.

Urban Forestry Management Plan

As part of the ongoing work by the Public Works Department, an Urban Forestry Management Plan is being undertaken. The main outcomes of the Plan are to maintain the existing City urban forest cover and where possible to support the expansion of its urban forest over the next 25 years. This Plan will build on the existing tree inventory, management practices and the annual tree planting program. The Plan is only focusing on the City owned urban forest and will be looking at trees in municipal parks and along municipal streets. Effective management of City trees will maintain and enhance the number, quality and diversity of trees within the urban area of the City. Thus the City by example will be increasing the tree cover percentage in the City over the next 25 years.

Natural Areas and Parkland Acquisition Policy

The Natural Areas and Parkland Acquisition Policy was adopted by Council on June 15, 2010. The purpose of this policy is to accommodate the future needs of City residents for recreational parklands and to sustain the natural heritage system. This policy in its criteria for prioritizing natural areas ranks highly significant woodlots, biodiversity, and climax forests (hardwood). These areas will mainly be acquired as part of the development process through parkland dedication. The policy also states that this method of acquisition will be inadequate and the City will need to actively pursue acquiring land in excess of the required parkland dedication to meet the demand.

Recreation and Leisure Services staff will begin to review and identify land areas for prioritization for acquisition in accordance with the Official Plan and the adopted Natural Areas and Parkland Acquisition Policy. A specific reserve fund is being recommended through the policy to earmark capital funding for further acquisition.

Conclusion

Each of the above methods has constraints associated with their use as an accurate measure of urban tree cover. However, through City initiatives such as the Natural Areas and Parkland Acquisition Policy and the Urban Forestry Management Plan, it is anticipated that over time the amount of forest cover on City owned lands will increase.

NOTICE PROVISIONS:

N/A

ACCESSIBILITY CONSIDERATIONS:

This report is available in different formats upon request from the Accessibility Coordinator.

FINANCIAL CONSIDERATIONS:

N/A

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EXHIBITS ATTACHED:

N/A