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STATUS REPORT RED PINE DECLINE AND HAZARD TREE MANAGEMENT YORK REGIONAL FOREST

The Transportation and Works Committee recommends:

- 1. The presentation by Ian Buchanan, Manager of Natural Heritage and Forestry be received; and**
- 2. The recommendations contained in the following report, April 26, 2006, from the Commissioner of Transportation and Works be adopted:**

1. RECOMMENDATIONS

It is recommended that:

1. This report on the current forest health situation and emergency removal of hazardous trees in the York Regional Forest be received.
2. Staff report back to the Transportation and Works Committee in the Fall with a draft of the Hazard Tree Management Strategy for the York Regional Forest.

2. PURPOSE

In the past several years staff of the Natural Heritage and Forestry Services section has been monitoring an increase in the incidents of Red Pine Decline (RPD) throughout the York Regional Forest including an increase in the quantity of hazardous trees along forest access roads and trails.

The purpose of this report is to:

- Provide committee with an update on the current Red Pine Decline forest health situation in the York Regional Forest.
- Inform committee of the actions being taken to manage the impact of Red Pine Decline on the Regional Forest including the removal of hazardous trees.
- Present committee with a draft framework for a comprehensive Hazard Tree Management Strategy for the York Regional Forest.

3. BACKGROUND

The Region owns and manages 2,100 hectares of York Regional Forest. The Regional Forest consists of 20 properties and includes over 120 km of mapped forest access roads and trails which are open to the public for recreational activities. Staff from the Natural Heritage and Forestry Services section are responsible for the management of the Regional Forest including monitoring forest health and maintaining a safe environment for public use.

3.1 Composition of Forest Types in York Regional Forest

The working forest forms the majority of the area (86%) of the Regional Forest properties and includes areas where active silvicultural management takes place (see Table 1). Areas not included in the working forest are wetlands (6%), open meadow (1%) and no harvest areas (7%). The no harvest areas include: legacy woodlands, inoperable areas, such as steep slopes and a five metre buffer on banks of streams and ponds.

Table 1
Composition of Working Forest by Area and Percentage of Forest Type

Forest Type	Area (ha)	Percentage
Red pine plantation	693	38.4%
White pine plantation	46	2.5%
Spruce-larch plantation	161	8.9%
Other conifer plantation	80	4.4%
Bottomland conifers	149	8.2%
Bottomland hardwoods	326	18.0%
Upland hardwoods (tolerant and intolerant)	251	13.9%
Mixedwood	101	5.6%
Total	1807	100.0%

Source: Sustainable Timber Management of the York Regional Forest, February 2003

3.2 Red Pine Decline Syndrome

Red Pine Decline is a forest health concern that effects red pine forests 50 years and older. It has been present in the York Regional Forest for many years occurring as isolated single or small groups of dead trees. However, in recent years, the extent and frequency of RPD has increased, resulting in large areas of dead and declining trees. The decline and mortality has been linked to the occurrence of several forest pathogens including the fungal infections *Heterobasidion annosum* (Annosus root rot) and *Armillaria spp.* (Shoestring root rot). While the exact cause of RPD is unknown, it is thought that a complex series of environmental factors, including past droughts, poor soil productivity, and natural competition from hardwood regeneration which weakened the trees allowing the forest pathogens to take hold, causing significant decline and mortality.

3.3 Red Pine Decline Monitoring and Research

In 2004, Region staff undertook a review of the RPD situation including consultation with staff from the Ontario Ministry of Natural Resources including the Provincial Forest Pathologist. During the summer of 2004, a survey of red pine stands older than 40 years was completed to determine the severity and extent of RPD and to assess the tree regeneration within the stands. The survey results identified significant levels of RPD in 22 stands totalling 185 hectares.

In 2005, a Red Pine Decline Management Strategy was prepared by the Natural Heritage and Forestry Services section with the assistance of a professional forestry services consultant. The purpose of this strategy was to identify options to mitigate the impacts of RPD on forest health including silvicultural treatment (logging) options for affected stands. These options included under planting stands with poor tree regeneration and the accelerated removal of red pine in stands with good advanced tree regeneration. The accelerated removal of red pine will slow the spread of RPD and release the tree regeneration. The five-year forest operating plan was updated to include additional harvesting and under planting in RPD infected stands. Silvicultural operations have also been modified in stands with minor amounts of RPD to reduce the potential of spread.

The Region has partnered with Natural Resources Canada and the Ontario Ministry of Natural Resources on several research initiatives to identify the causes of RPD and to test potential control options. The Regional Forest is being used as a test site for several of these studies.

Tree mortality associated with RPD has resulted in the creation of significant number of dead standing red pine trees. Dead standing trees, or snags as they are referred to, provide many ecological benefits to the forest, including wildlife habitat. However, this ecologically valuable component becomes a significant risk to forest users when they occur along forest access roads and trails. The Red Pine Decline Management Strategy identified that a substantial increase in the number of hazardous trees has occurred along trails. Dead standing trees are a common occurrence in forests, however, in stands infected by RPD, the numbers are significantly higher. The increase has reached levels where emergency works are required to reduce the risk of falling trees to forest users.

3.4 Current Hazard Tree Management Practices

Hazard tree management is currently delivered on an annual basis in the Regional Forest through annual silvicultural operations. Hazard trees within a tree length of trails are identified prior to harvesting and removed during the harvest operation. In addition, hazard tree management is completed based on inspections conducted by staff and on information received from the public and forest user groups such as the Oak Ridges Trail Association.

Hazard tree management in public forests and parks has received attention recently as the result of a fatality at the Royal Botanical Gardens in Burlington. A coroners' inquest into this fatality identified 18 recommendations relating to hazard tree management in public

forests and parks (*Attachment 1*). In response to this incident several agencies responsible for the management of public lands are reviewing and updating their hazard tree management strategies and policies.

4. ANALYSIS AND OPTIONS

4.1 Hazard Tree Management of Red Pine Decline

During the Fall of 2005, it was noted that there had been a significant increase in the number of standing dead red pine trees in the York Regional Forest. In January 2006, the Region prepared a hazard tree management protocol for RPD infected stands. Several management options were considered including trail closures, signage, and hazard tree removal. The removal of hazard trees provides the most effective means to reduce the risk to forest users and exposure to the Region. The hazard tree management protocol describes the process for identifying the trails to assess which trees pose a hazard to the trail and the preferred method of hazard abatement.

Forest access roads and trails within or adjacent to stands with significant levels of RPD were identified for hazard tree assessment. Red pine trees were assessed for removal, included dead standing trees and those exhibiting significant signs of decline within 20 metres of the trail. The preferred method of hazard tree removal is a traditional forest harvesting system using single grip tree harvester/processor. This system is safe, cost effective, and minimizes damage to the site.

As part of the overall assessment, any additional hazard tree removals or pruning needs identified for other species (non red pine) which can't be accommodated using the single grip harvester, will be completed using specialized personnel and equipment including tree climbers and bucket trucks as necessary.

Public education was completed to advise forest users of the Region's hazard tree removal operations. This education included an information session with members of the Regional Forest Advisory Team, placement of information signs at forest tracts, and through the Region's Forest Festivals, Events and the forest education program, Nature's Classroom.

A total of 25 km of trails were assessed in February and March 2006, with an estimated 2,300 trees identified for emergency removal. The services of a tree removal contractor has been obtained and removal operations are now complete.

4.2 Hazard Tree Management Strategy

Regional staff are undertaking a review of the Region's current hazard tree management procedures. This includes consultation with other public forest managers, and a review of hazard tree management policies from other agencies, and the consideration of the recommendations from the coroners' inquest of the fatality at Royal Botanical Gardens.

Staff propose that the procedures be updated through the development of a comprehensive Hazard Tree Management Strategy for the York Regional Forest. A draft framework for this strategy has been prepared (*Attachment 2*). The following steps outline the process for the development of this comprehensive strategy:

- Creation of a technical review team – June 2006.
- Consultation with internal stakeholders including Legal Services, and Risk Management – July-August 2006.
- Draft strategy circulated to internal and external stakeholders (eg. Regional Forest Advisory Team, Ontario Ministry of Natural Resources, Conservation Authorities, etc.) for review and comment – October 2006.
- Draft strategy presented to the Transportation and Works Committee for endorsement – Fall 2006.

The strategy would outline the assessment requirements and protocols for the Regional Forest, and would include the financial implications of the strategy.

4.3 Relationship to Vision 2026

The management of the York Regional Forest will continue to support Vision 2026 and such key goal statements as:

“In 2026, York Region will have grown at a pace that supports healthy communities, economic vitality, sustainable natural environment and effective human services.”

The management of the Regional Forest strengthens the Region’s commitment to focus on Vision 2026 actions areas including:

- Securing a Green York Region.
- Ensuring clean water, air and promoting conservation.

5. FINANCIAL IMPLICATIONS

The emergency removal of hazard trees resulted in an additional budget pressure of \$40,000 on the forestry operations budget. It is anticipated that this additional pressure will be offset by an increase in timber harvest revenues of approximately \$40,000. The increase in harvest revenues is associated with the accelerated removal of other affected trees as part of the silvicultural operations this Fall. The financial implications of this activity and net impact on the forestry operations budget are projected to be revenue neutral.

The Region has made a considerable effort to market the York Regional Forest to the public, and has the responsibility to ensure that the forest is safe for public use. The development of a comprehensive Hazard Tree Management Strategy will further

demonstrate the due diligence responsibility of providing a safe user experience. The draft Hazard Tree Management Strategy will be presented in the Fall 2006, and will include additional information on financial implications. It is anticipated that implementation of the Hazard Tree Management Strategy will required \$20,000 - \$40,000 per year.

6. LOCAL MUNICIPAL IMPACT

There is no direct local municipal impact.

7. CONCLUSION

In recent years Red Pine Decline (RPD) has had a significant impact on forest health and can be expected to become an increasingly important factor in the management of the York Regional Forest. Further to the impact on forest health, RPD has significantly increased the number of hazard trees along forest access roads and trails posing a potential risk to forest users. To address this forest health and public safety concerns, staff has taken measures to reduce both the impact on forest health and maintain a safe environment for forest users. Staff recommends that the Region proceed with the development of a comprehensive Hazard Tree Management Strategy to ensure that the forest continues to provide safe and enjoyable recreational opportunities for the residents of York Region.

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause are attached to this report.)