COMMITTEE OF THE WHOLE MEETING – MAY 16, 2005

ASIAN LONG-HORNED BEETLE AND TREE REPLACEMENT STRATEGY FOR PUBLIC LANDS

Recommendation

The Commissioner of Community Services and the Director of Parks, in consultation with the Asian Long-Horned Beetle Intergovernmental Task Force recommends:

1. That the attached TRCA's vegetation plan be received;

2. That Tree Canada be requested to provide Vaughan's share of the allocated funding in the amount of $8,000, and;

3. That Council request the $50,000 committed by the Region of York for dealing with the streetscapes affected by the Asian Long-Horned Beetle, and;

4. That approval be requested from the Canadian Food Inspection Agency regarding the previous motion sent out by the Intergovernmental Task Force requesting that $300 per tree be approved for public lands in the City of Vaughan, and;

5. That the Canadian Food Inspection Agency be requested to reimburse the costs associated with the collection of ALHB yard and leaf waste in the amount of $249,034.40.

Economic Impact

There is no economic impact if funds committed are made available from the sources listed in this report, and the Vaughan Tree Replacement Strategy is approved and the CFIA accepts Vaughan's standards. If not there will be an impact of $150,000.00 shortfall to implement the tree replacement strategy.

Purpose

To provide a master plan addressing the species, locations, funding and timing for a replacement program as it relates to the Asian Long-horned Beetle.

Background - Analysis and Options

Background

In September 2003, an invasive quarantine insect known as the Asian Long-horned Beetle (ALHB) found its way into Vaughan from wood crates imported from Asia. Although the beetle was discovered to be living on silver maples between two industrial parking lots in south Woodbridge in the summer of 2003, it went undetected for up to 5 years. The ALHB spread during that time to 4 additional areas known as satellite sites.

In fall 2004, another infestation of the ALHB in Vaughan was discovered by the CFIA. As a result, over 100 trees in an industrial area at Hwy 400/#7 were removed.

The larvae feed within the truck and limbs of trees and will eventually riddle the tree with holes, causing them to die. In some situations, mature trees may be killed in one or two growing seasons. The adult beetle can also feed on leaves, bark and shoots, causing considerable damage to the tree. Currently there are no known natural predators in North America to control the ALHB and no biological controls are available at this time.

Under the *Plant Protection Act,* the Canadian Food Inspection Agency (CFIA) is responsible for preventing the entry and spread of pests (of quarantine significance) into Canada. The CFIA, therefore, has the eradication and Regulatory authority to control pest establishment.

Eliminating the ALHB requires the following actions: finding and severing the pathway of pest introduction, finding any undetected infestations, and eradicating all known infestations.

Through scientific research including a thorough study of how other North American Cities have dealt with ALHB, a decision was made to not only remove the trees that showed signs of infestation but also to remove host trees within 400 meters of an adult exiting from the tree. The eradication process commenced in the winter of 2003/2004 and included the removals of approximately 15,000 public and private trees in the City of Vaughan and the City of Toronto. Approximately 4,000 of these trees have been removed in Vaughan from private, city and regional properties, with the majority of trees located on private property.

All levels of government are working to contain and eradicate the beetle before our forests are decimated. A technical team led by the CFIA, that includes the City of Vaughan, City of Toronto, TRCA and York Region are assigned to assist with tree removals, inventory procedures and site inspections from the ground, climbing and aerial. Staff at other levels are involved in Operational, Communications and Waste Collection Committees integrated through the CFIA and attended by the government partners.

Phases I and II to deal with the eradication and monitoring of the ALHB are well under way. The public has been informed through public correspondence, community meetings and press releases, as to the full impacts to the community involving, removals and disposals.

City of Vaughan's replanting program in relation to ALHB

The partners recognize that a well-planned and proactive approach is necessary to maintain the urban forest. Additionally, the public is anxious to learn what the government agencies plans are to replace the many trees that were removed from the neighborhood boulevards and parks.

In February 2004, the Toronto Region Conservation Authority (TRCA) established the ALHB Tree Replanting Committee made up of members from The City of Vaughan, City of Toronto, York Region, and Ministry of Natural Resources as well as the CFIA. The major focus of this committee was to establish a consistent approach to re-vegetation. All partners agreed with Replanting non-host trees of various species and longevity. The committee realized that in order to maintain the tree canopy in the infested zone, all lands had to be addressed including; public trees on municipal and regional properties, rights-of-way, private trees, forested areas, and commercial and industrial properties.

The City of Vaughan staff agreed with this approach and has instituted replanting strategies over the past 4 years that address diversity with species selection. Species selection is important to not only provide a streetscape with a variety of trees with various life expectancies, it also safeguards against the unnecessary spread of diseases and insects. An example of diversity planting is when no more than 4 trees of one species or variety are planted in a row. This method of planting is one of many improvements the forestry section has been working on for the past several years. Other considerations include; soil conditions, site exposure, species adaptability, space availability, and existence of utilities. The City of Vaughan has a minimum standard of 50-mm caliper for public boulevards.

In April 2004, the CFIA announced that there was a regulated area whereby woody brush or trees could not be removed without approval from the CFIA. The area was between Rutherford to the north, Dufferin to the east, Hwy #27 to the west and Hwy #401 to the south.

This regulation directly impacted the City of Vaughan's annual tree replacement program. This meant that not only were trees within the infested zone being replaced with non-host species, trees outside of the infested zone which has been identified as the regulated zone were now recommended to be non-host as well. Developers as well as internal departments were made aware of this regulation and asked to modify species to non-host. The ALHB host list includes: maples, birch, elm, sycamore, hackberry, silk tree, willow, poplar, horse chestnut and mountain ash. In order to comply with the Regulation, The City of Vaughan produced a street tree-planting list and made it available to the tree suppliers.

Replacement options for ALHB

The City of Vaughan has prepared a site map of the areas and species selections for trees on public lands. This provides a guideline and must be updated with the actual locations identified from the CFIA. Although the CFIA has announced the reimbursement, they have not provided the actual locations of the trees that were removed.

The City of Vaughan is concerned that the funds available for replanting are not sufficient to maintain the same caliper and standard of tree that the City of Vaughan has established. The CFIA created the funding formula on a bare root planting program rather than balled and burlapped **(B&B)** for municipal lands.

The caliper of these bare root trees are up to 45 mm and the height is 6'-8'. The planting bed for a bare root can be hand dug avoiding the delays in locating utilities. For these reasons and with the assumption that municipalities would agree with this method of planting, the CFIA geared their funding formula towards this method of tree replacement. The replacement formula was developed by CFIA; City of Vaughan staff were not involved in this process

Additionally, bare root trees have the potential for vandalism, as they are shorter and frail. Regular watering is essential for these young trees since they have not been prepared with sufficient material allowing for transplant. Basically these trees are pulled from one location with roots exposed and replanted. The general acceptance of these trees, which are replacing trees that were on average between 60-200mm, is not positive for the urban streetscape.

The City of Vaughan, however have an established standard of 50 mm caliper balled and burlapped trees for many years. The 50 mm B&B tree that reaches an average height between 7'-10' and planted in parks and boulevards is the acceptable standard of trees planted in the City of Vaughan. For several years the balled and burlap tree has become the preferred method of planting trees by several municipalities. Initial **B&B** planting costs are higher than the bare root method, but survival and first year growth of **B&B** trees are better than similar bare root trees. Furthermore, survival rates have been positive since the contractors are required to meet quality standards with planting as well as post maintenance procedures. Trees are thoroughly inspected after a two year warranty and only healthy trees are assumed.

With the funding announced at $150/tree for municipal trees, funds are sufficient for the purchase and installation of bare root plantings. Therefore, replacement funding allocated to the City of Vaughan is not sufficient to maintain Vaughan's standard for new tree plantings (B&B).

Species Selection in ALHB

While the focus for replanting in the ALHB infested and satellite zones address the planting of non-host species other criteria is essential as well. Tree selection must meet the forestry department's requirements to ensure the most appropriate tree is planted based on: hardiness, adaptability and survivability in our environment. Some examples of these types of trees that meet the CFIA's list of non-host species include: lindens, locust, lilac and beech.

The forestry section recognizes the advantages of using native trees for the long-term sustainability of the urban environment. These preferred trees include native non-host species such as bur oak, tulip and little leaf lindens/basswood. Special consideration will be made to include these selections more often in future planting projects including the ALHB infested zone.

The site plan for all residential and industrial boulevards will focus on diversity plantings. This method of planting no more than four of the same species in a row on one side of the street is a recognized arboriculture practice that will be implemented heavily in all City of Vaughan tree planting projects in the ALHB infested zone as well as throughout the City of Vaughan.

Another factor that is essential to control the spread of insect or disease infestations is the avoidance of monoculture plantings. This often occurs when the same variety of trees are planted in an area. This is visible at entranceways to sub-divisions where a developer is looking for continuity with the landscape. By introducing new variety of trees to Vaughan, such as the tulip tree and combining these uncommon street trees with diversity plantings, The City of Vaughan is safeguarding against the spread of unwanted pests.

Funding sources for the ALHB Infested zone

Street trees within the ALHB infested zone (both public and private) have been identified and removed as a result of infestation or because they are within 400 meters of an exit hole. The 400-meter buffer zone was recommended for a buffer due to the lack of certainty regarding visual confirmation of infestation.

On May 12, 2004, the Minister of Agriculture and Agri-Food Canada, announced the implementation of the "*Introduced Forest Pest Compensation Regulations "* to compensate property owners in Ontario and Nova Scotia for replacement of trees ordered destroyed to control the spread of three invasive forest pests, including the ALHB in parts of Toronto and Vaughan. The CFIA has estimated that the replanting will cost approximately $6.5 million dollars. It is estimated that the City of Vaughan will receive approximately $142,500.00 as of November 2004, for the replacement of 950 trees based on $150.00 per tree and $10,000 based on $40 per tree in the woodlots.

Previous to this, in February 2004 the Tree Canada Foundation donated $8,000 to planting trees in the affected area. The Tree Canada Foundation is a non-profit, charitable organization established in 1992. The foundation is a leader in promoting the value of urban forests in Canada. Furthermore, the Ontario Ministry of Natural Resources announced in February a contribution of $1 million of provincial funding to replace and establish forest cover in an effort to reduce the impact of the Asian Long-Horned Beetle and Emerald Ash Borer (EAB). The MNR has proposed that approximately $350,000 of the 1 million be allocated to address forest cover and habitant loss within the ALHB regulated zone, covering portions of the City of Toronto and City of Vaughan.

York Region has also committed $50,000.00 as outlined in the recommendations. The Region's intent was to consider regionally affected trees on properties within the ALHB zone, streetscaping and natural heritage plantings, however, this was only recently communicated.

Canadian Food Inspection Agency Funding Formula

Compensation is to be provided on the basis of the direct cost of replacing a tree to a set maximum amount determined by the CFIA. The maximum amounts are $300 per tree ordered destroyed on privately-owned land, $150 per tree on public land and $40 per tree in woodlots. This maximum amount will be applied to both the purchase and planting of the tree.

Early indications from the CFIA, indicates that the split between Vaughan and Toronto will be approximately 40/60. The chart below applies the 40/60 formula to the funding with the

exception of the CFIA and York Region. The CFIA, as stated earlier, is providing $150 per tree on public lands and $40 per tree for wood lots.

Table 1

Agency funding	**Total funding ALHB tree replacement**	**City of Vaughan estimated allotment**
CFIA	6.5 million	$143,700 street trees* $76,120 wood-lots*
MNR	$350,000	$120,000 ($100,000 City of Toronto0 ($230,000 TRCA)
York Region	$50,000	$50,000
Tree Canada	$8,000	$3,200 ($4,800 City of Toronto)
Total		**$393,020.00 (COV)**

*actual funding allocated based on 958 COV trees at $150/tree, and 1903 woodlot trees at $40/tree

Funds that have been identified for tree replacement as shown on table 1 have not been made available to the City of Vaughan or the City of Toronto. In addition, the CFIA has indicated that they will only reimburse $150 for public trees and $300 for private (residential) trees. The funding for public tress is not sufficient for the purchase of the caliper of trees to meet the City of Vaughan standards.

	Number of Street Trees	**Cost per Tree**	**Total**
COV Standard	958	$300	$287,400.00
CFIA Standard	958	$150	$143,700.00
Funding shortfall to re-plant as per COV standard			**$143,700.00**

* **To be able to replace the street trees as per Vaughan standards as outlined in this report, additional funds in the amount of $143,700.00 is required.**

Without immediate access to the funds allocated from the various sources for the purchase and planting of trees on public lands, The Cities are at a great risk of loosing its urban forest canopy. If the City of Vaughan can access all the funds available in Table 1, the replacement of the street trees in Vaughan can begin and reduce the risk of loosing the canopy.

Notwithstanding that funds in the amount of $287,400 are required to replace the street trees there is no guarantee that the bids received from the tender will reflect $300 for a planted **B&B** tree as per city standard. Therefore, the tender document will request bidders to provide prices to supply and install. Potted trees. These trees are between 40 and 50 mm and have a market value less than **BB.**

These potted trees are grown directly in the container whereas **BB** are not. Although there are advantages to both methods, the City of Vaughan's past practice has been to plant **BB** on streets. Potted plants require a higher level of maintenance in the establishment period and the crown size is smaller at planting.

Timeframe of ALHB tree replacement

The forestry department at the City of Vaughan in conjunction with the City of Toronto, the Region of York, TRCA and the MNR anticipates the public trees re-vegetation program commencing in the 2005 spring planting season.

In the meantime, discussions have taken place with the TRCA to assist the City of Vaughan with forest edge plantings in the Ansley Grove woodlot.

Both of these initiatives cannot proceed until the CFIA approves the total cost as outlined in this report and the funds from the MNR, Tree Canada and York Region have been allocated as per table 1.

> **Tree replacement at residential homes is already underway and administrated by the CFIA. Letters have been sent to homeowners stating that they will receive up to $300/tree.**

Costs associated with collection of ALHB yard and leaf waste

Contractor costs have increased substantially as a result of separating the collection and disposal of leaf and yard waste within the ALHB regulated zone. This order by the Canadian Food Inspection Agency was issued in March 2004 with boundaries established encompassing most of Vaughan. Notification to the public continues to be extensive thus ensuring the order is appropriately adhered to. These advertising costs in the amount of $10,899.68 combined with the second pass required for the contractor in the regulated zone of $238,134. 71 for a grand total of $249,034.40.

Relationship to Vaughan Vision 2007

This is in keeping with the Vaughan Vision as it strives to provide service excellence to Vaughan Citizens.

This report is consistent with the priorities previously set by Council and the necessary resources have not been allocated and approved.

Conclusion

The City of Vaughan forestry department has been involved with the tree planting program for the past four years and with the discovery of the Asian Long-horned Beetle in Vaughan, the staff have worked closely with the CFIA lead team to control and eradicate this unwanted pest. In addition staff is continuing to work with the TRCA to develop and implement an effective tree replacement program. Both York Region and TRCA have endorsed the City of Vaughan standards for tree replacement. However as mentioned in this report, there are some issues and challenges that need to be resolved.

The master plan for the ALHB replacements is in the final stages. Staff's recommendation to plant balled and burlapped trees requires council support as well as available funds.
The department therefore recommends that balled and burlapped trees be replaced on municipal properties.

The City of Vaughan would like to move forward with the replanting program on boulevards, parks and woodlots that were directly impacted by the Asian Long-horned Beetle by spring 2005. This cannot proceed until funds are confirmed based on the standard of tree required in the City of Vaughan.

With the funds identified from various agencies, the Parks and Forestry Department is requesting confirmation and access to these funds for the replanting strategy. Therefore, staff recommends that the Asian Long-Horned Beetle Intergovernmental Task Force and City of Vaughan Council:

1. Receive the TRCA's vegetation plan to access the MNR funds, and;

2. Requests Tree Canada to provide Vaughan's share of the allocated funding in the amount of $8,000, and;

3. Requests the $50,000 committed by the Region of York for dealing with the streetscapes affected by the Asian Long-Horned Beetle, and;

4. Requests approval from the Canadian Food Inspection Agency regarding the previous motion sent out by the Intergovernmental Task Force requesting that $300 per tree be approved for public lands in the City of Vaughan, and;

5. Requests the Canadian Food Inspection Agency to reimburse the costs associated with the collection of ALHB yard and leaf waste in the amount of $249,034.40.

Attachments

1. Sample site map of tree replanting on Russet Way.
2. Preferred street tree list of non-host ALHB.
3. TRCA's report re. Proposal to Increase Natural Corridor Linkages (attachment available once email from TRCA).

Report prepared by:

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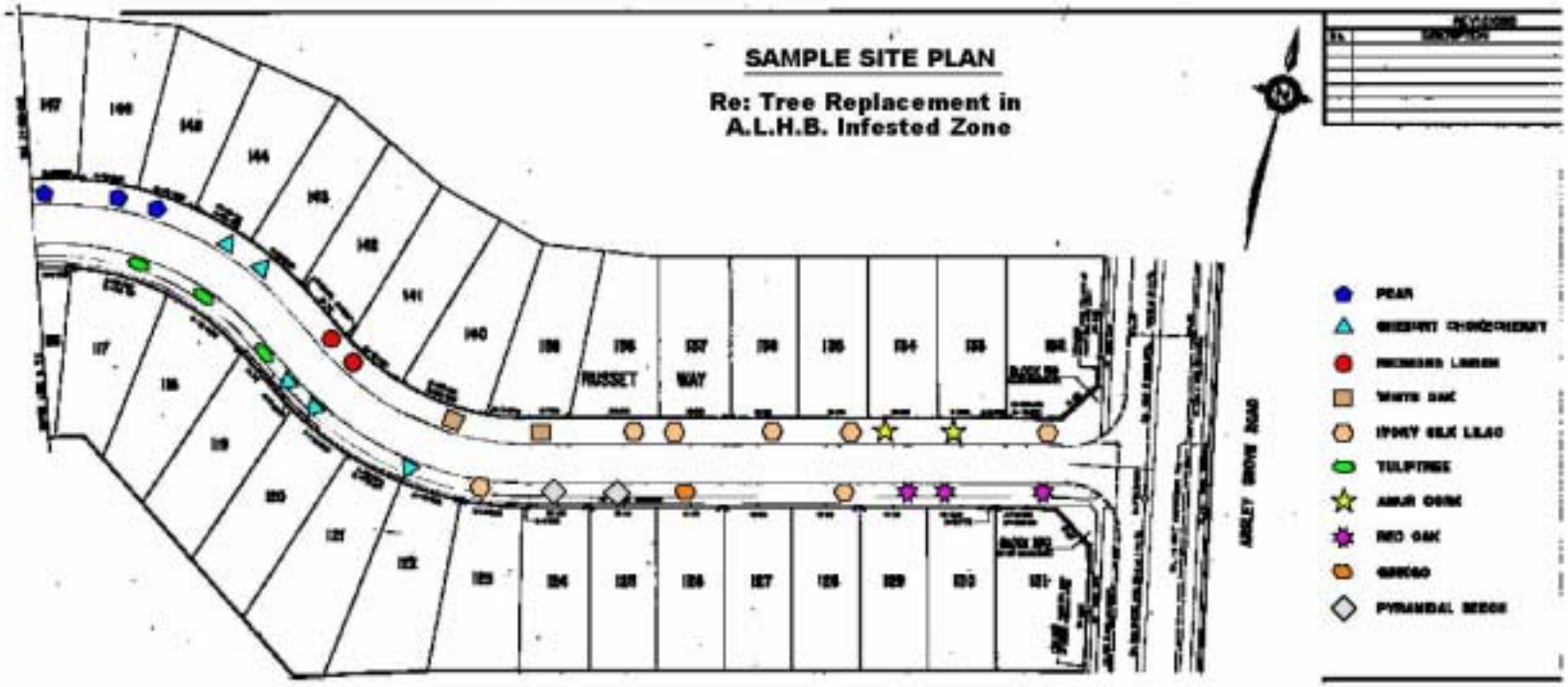
Respectfully submitted,

Marlon Kallideen
Commissioner of Community Services

Marjie Fraser
Director of Parks


SAMPLE SITE PLAN
Re: Tree Replacement in
A.L.H.B. Infested Zone
RUSSET
WAY
ARLEY GROVE ROAD
PEAR
TULIPTREE
AMUR OAK
RED OAK
PYRAMIDAL SPECIES

DECIDUOUS SPECIES			**RECOMMENDED USES**
Name	**Height**	**Foliage**	
American Beech			
Fagus grandifolia	20m	green	park, specimen
Pyramidal European Beech			
Fagus sylvatica fastigiata	14	green	street - adjacent streetlight
White Ash			
Fraxinus americana	25m	green	street, park, specimen
Black Ash			natural areas
Fraxinus nigra	20m	green	street, large islands, major roads, wet areas
Fall Gold Ash			
Fraxinus nigra'Fall Gold'	17m	green	street, park
Green Ash			
Fraxinus pennsylvanica	20m	green	street, parks, major roads
Marshall's Ash			
Fraxinus pennsylvanica'Marshall's'	18m	green	street, park, wet areas
Patmore Ash			disturbed sites
Fraxinus pennsylvanica'Patmore'	15m	green	street, park, specimen
Summit Ash			street, park, major road
Fraxinus pennsylvanica'Summit'	20m	green	medians, islands
Ginkgo			
Ginkgo biloba	20m	green	street, parks, specimen
Shademaster Honeylocust			street, park, major roads
Gleditsia triacanthos 'Shademaster	15m	green	commercial/industrial frontages
Kentucky Coffeetree			
Gymnocladus dioicus	20m	green	street, park, specimen
Tulip Tree			street, specimen, park
Leriodendron tulipifera	20m	green	natural areas
Star Magnolia			
Magnolia stellata	5m	green	islands

DECIDUOUS SPECIES			**RECOMMENDED USES**
Name	**Height**	**Foliage**	
Saucer Magnolia			
Magnolia x soulangiana	6m	green	islands
Profusion Crabapple			windows, buffers
Malus'Profusion'	6m	purple	under service lines
Royalty Crabapple			windows, buffers
Malus'Royalty'	5m	dark purple	under service wires
Ironwood			street, natural areas
Ostry virginiana	13m	green	specialty, specimen groupings
Amur Corktree			street, park, specimen groupings
Phellodendron amurense	15m	green	specialty
Bradford Pear			street, park, medians
Pyrus calleryana'Bradford'	17m	green	screens, buffers, specimen
Chanticleer Pear			street, parks, medians
Pyrus calleryana'Chanticleer'	17m	green	screens, buffers, specimen
White Oak			street, park, specimen
Quercus alba	25m	green	natural areas
Swamp White Oak			street, park, specimen
Quercus bicolor	20m	green	natural areas
Bur Oak			street, park, specimen
Quercus macrocarpa	25m	deep green	natural areas
English Oak			
Quercus robur	20m	dark green	street, park, specimen
Fastigiate English Oak			buffers, windows
Quercus robur'Fastigiate'	20m	dark green	medians, containers, adjacent to streetlights
Red Oak			street, park, natural areas
Quercus rubra	25m	green	specimen
Black Locust			
Robinia pseudoacacia	15m	yellow	disturbed sites
Ivory Silk Japanese Tree Lilac			
Syringa reticulata'Ivory Silk'	8m	green	container, street, park, buffers

DECIDUOUS SPECIES			**RECOMMENDED USES**
Name	**Height**	**Foliage**	
Basswood			adjacent to streetlights
Tilia american	24m	green	street, park, specimen, natural areas
Little-leaf linden			
Tilia cordata		green	street, park, specimen
Glenleven Linden			street, park
Tilia cordata'Glenleven'	15m	green	specimen
Green Globe Linden			screens, buffers
Tilia cordata'Green Globe'	5m	green	under service lines
Greenspire Linden			street, park, specimen
Tilia cordata'Greenspire'	13m	green	
Redmond Linden			
Tilia cordata'Redmond'	11m	green	street, park, specimen
EVERGREENS			**RECOMMENDED USES**
Name	**Height**	**Foliage**	
Green Pfitzer Juniper	1.5m	green	disturbed sites
Juniper chinensis'Pfitzeriana			windows, buffers
Blue Creeper Juniper	0.6m	bright blue	disturbed sites
Juniper scopulorum'Blue Creeper'			windows, buffers
Blue Haven Juniper	5m	bright blue	disturbed sites
Juniper scopulorum'Blue Haven'			windows, buffers
Wichita Blue Juniper	4m	green	disturbed sites
Juniperus scopulorum'Wichita Blue'			windows, buffers
European Larch			
Larix dicidua	20m	green	park, specimen
Japanese Larch			
Larix kaempferi	27m	green	park, specimen

EVERGREENS			**RECOMMENDED USES**
Name	**Height**	**Foliage**	
Tamarack			park, specimen
Larix laricina	25m	blue/green	natural areas
Norway Spruce			park, specimen
Picea abies	2om	dark green	natural areas
White Spruce			park, specimen
Picea glauca	20m	green	natural areas
Serbian Spruce			park, specimen
Picea omorika	20m	green	natural areas
Hoopsii Blue Spruce			
Picea pungens'Hoopsii'	12m	blue	park, specimen
Colorado Spruce			screening major roads
Picea pungens	20m	green	park, specimen
Colorado Blue Spruce			screening major roads
Picea pungens'Glauca'	20m	blue/green	buffers, screen, windows
Austrian Pine			buffers, screen, windows
Pinus nigra	20m	green	park
Red Pine			
Pinus resinosa	18m	green	disturbed sites
White Pine			park, specimen
Pinus strobus	25m	green	natural areas
Scot's Pine			park, natural areas
Pinus sylvestris	20m	green	buffers, screen, windows
Douglas Fir			
Psudotsuga menziesii	25m	green	park, specimen
Estern Hemlock			park, specimen
Thuga canadensis	22m	green	natural areas
White Cedar	20m	green	buffers, screens
Thuja occidentalis			windows, park