



# **CFB ROCKLIFFE VEGETATION SURVEY**

## **ARBORIST'S REPORT**

Prepared by Dan Baker,  
Registered Professional Forester and Urban Forestry Consultant

January 2013

## **ARBORIST'S REPORT**

Prepared by Dan Baker,  
Registered Professional Forester and Urban Forestry Consultant

January 2013

### **CFB Rockliffe Vegetation Survey**

#### **Purpose of the Survey:**

The primary objective of the survey is to provide an update to the "Arborist's Report" that was prepared by Jim McCready during the Summer/Fall 2004 as well as provide an inventory of additional vegetation that was not included in the previous report.

#### **Purpose of this Report:**

This report is intended to be read in conjunction with the previous "Arborist's Report" prepared by Jim McCready and "Existing Vegetation Survey" plan, both which appear in the Appendix. The analysis presented in the previous report is maintained in all cases and supplementary information is provided below (see Additional Individual Trees or Tree Groupings). Also included in the Appendix is the complete list of Trees surveyed.

#### **Method of Gathering Information:**

The original report and maps were analyzed and form the basis of this report. The individual trees were revisited on site over the course of several weeks during October 2012 and the following information was recorded:

1. Trees were renumbered and tagged with aluminium markers
2. Trees were photographed
3. Tree trunks were measured at Diameter at Breast Height (DBH - or 1.3m above ground)
4. Trees were analyzed by Condition (Good, Fair, or Poor)
5. Tree canopy was measured (radius in metres from centre of tree to dripline – an average measurement was taken to account for crowns of unequal radius)
6. Additional comments or notes were provided
7. Location of tree was recorded by a GPS hand-held device (Latitude and Longitude). These coordinates were converted from GPX to CAD files for use by Landscape Architect.

A site visit occurred on October 16, 2012 with Lynnette Postuma (Janet Rosenberg & Studio) and Jim McCready. We toured the site by car and on foot to analyze the most significant trees, all tree groupings, and discussed why some trees or tree groupings were or were not included in the original report.

### **Additional Individual Trees or Tree Groupings:**

In addition to the 75 individual trees that were surveyed originally, another 38 trees have been added to this report. This occurred for several reasons: demolition of the base over the last 8 years has made certain trees visible where they were previously hidden by buildings; environmental legislation has come into effect over the past 8 years which requires the protection of certain tree species; additional trees of unusual species or size or location were noted; and the project boundary may enlarge (for this reason, the tree grouping at the north-east corner of Burma Rd and Montreal Rd was reviewed). These trees are listed in the Appendix in the table labelled "Selected Trees" and numbered 76 through to 113.

### **Significant Changes on Site:**

Since the previous report was completed in 2004, several major changes have occurred on the site:

1. Nearly all buildings on site have been removed and vegetation has been allowed to regenerate.
2. Emerald Ash Borer (EAB) has been discovered in the Ottawa region and has spread to this site. As noted on the tree list, some Ash trees have been drastically affected and others show little sign of EAB. Ash trees that have not been greatly affected could be saved if some action to prevent the EAB activity in individual trees. At this time, there is only one generally accepted commercial practice to treat individual ash trees in Ontario, although new technologies may soon be available. This is with the application of a chemical known as TreeAzin™. It is a systemic insecticide injected into the trunk of trees. Health Canada's Pest Management Regulatory Agency (PMRA) has granted TreeAzin™ emergency registration for use against EAB since 2008 in Ontario and Quebec.
3. In the intervening years since Mr. McCready's report, some trees included in his report have undergone damage. Other trees not included in the original report have grown to the point where they are now significant.

**Significant Changes to Tree Legislation:**

Since the previous report was completed, the Province of Ontario's Endangered Species Act, 2007 has come into effect and identifies Butternut (*Juglans cinerea*) as endangered. There are two young Butternut trees on the north side of the site which were most likely planted in recent years (trees # 108,109 in the Appendix "Trees Selected for Potential Retention"). In addition, the City of Ottawa's Urban Tree Conservation By-Law (2009) has come into effect. Co-operation with City of Ottawa staff will be necessary to comply with the urban tree by-law.

**General Comments about the Site:**

The City of Ottawa is located in the Great Lakes/St Lawrence Forest region. It is forest region that is represented by a mixture of deciduous and coniferous trees. To the north of this forest region conifer trees tend to dominate sites whereas forest regions to the south are dominated by deciduous trees. On this site, a number of tree species such as Sugar Maple, Basswood, Red Oak, White Pine, White Spruce, and White Cedar are reflective of the forest region.

Bitternut Hickory, Butternut, and Silver Maple were found on the site and are species that are at the northern boundary for their natural range. Silver Maple in particular was only found as a planted tree and would rarely be found in forests this far north. Non-native species found on the site (some of which were selected for potential retention) include Black Locust, Norway Maple, Norway Spruce, Blue Spruce, and Weeping Willow. These trees were generally planted but in some cases had regenerated naturally. In general, native trees are recommended for retention as some non-native species, such as Norway Maple, tend to be invasive.

**Landscape Value Assessment Priorities:**

Although not situated on the base proper, the two most valuable areas for identification/protection from an ecological standpoint are the Montfort Hospital Woods and the NRC Woods North. These are special areas identified by the City and are part of the Urban Natural Area Study, which will be completed this fall with further evaluation this winter. Once identified by the City as Urban Natural Features an Environmental Impact Statement (E.I.S.) will be required for any development within 30 metres of the boundary. The National Capital Commission has purchased the Montfort Hospital Woods.

**Individual Trees:**

For a complete list, see Appendix "Trees Selected for Potential Retention". In general, trees selected for potential retention were native species although exceptions were made. Some tree numbers were changed from Mr. McCready's original report to ease the collection of data and synchronize GPS points with picture #s, etc. The original numbers from the McCready report are included in the Appendix "Trees Selected for Potential Retention". There are a few groupings of trees recorded in this format; they differ from the Forest Tree Groupings explained below as they don't form the basis of a forest stand of trees, unlike the Forest Tree Groupings.

**Forest Tree Groupings:**

The tree groupings in Mr. McCready's report are now referred to as Forest Tree Groupings as there are some groups of 2 or more trees that are described in the Appendix "Trees Selected for Potential Retention" which generally refers to individual tagged trees or a number of trees that are planted together along a roadside. However, they are not reflective of a forest condition, whereas the groupings below are.

The groupings are described and taken from Mr. McCready's report. Updates, comments, recommendations and differences are then written in italics together with a "*\*DB*" (to indicate comments by Dan Baker).

### Grouping A – Between Rigel Road and Mynarski Crescent

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	70	35 (40)*DB	Good condition
White Ash	20		Fair condition
Basswood/ Beech/ Hemlock *DB	10		Poor to fair with some trees dying back from the top and should be removed

**Comments:** There are also a few Bitternut Hickory and American Beech in this stand. This is very park-like with all the underbrush cleared out with some grass and very little humus present. The residents have used this for many years. With the removal of the trees in poor condition this area could be used as greenspace for any development.

*\*DB There is now excellent regeneration of sugar maple, and especially white ash and green ash. There is some regeneration of beech, basswood and bitternut hickory. This regeneration is gradually returning this grouping into a multi aged stand. However, there are also patches of invasive buckthorn and some dog strangling vine. Thought should be given to the control of these invasive species as they can be very aggressive and out compete other native and desirable tree and shrub species.*

### Grouping B – Intersection of Mynarski Cr. and Arcturus Ave

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	65	60	Good condition
Ironwood	20	16	Good condition
White Ash	10	45	Poor condition
Basswood/ Bitternut Hickory *DB 5		60	Poor condition

**Comments:** A very small woodlot consisting of large old Sugar Maple in relatively good condition with Ironwood mixed in. The odd White Ash and Basswood are present but they are in poor condition. There is natural regeneration of young Sugar Maple and Ironwood present. A small trail runs through the woodlot. Large boulders are present as if it were used as a dumping area at one time. If possible this would be worth retaining.

*\*DB The trail through the grouping is no longer apparent. There is a den, likely that of a coyote, in an old brush pile on the northern edge of the grouping. A large (50+cm) white elm present on the southern edge (top of the slope) is a relatively rare tree now, due to Dutch elm disease. There is woodpecker damage on many of the ash trees in this grouping which is an indication that many, if not all of the ash trees are being affected by emerald ash borer.*

### Grouping C – Behind Arcturus Ave

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	60	45	Good condition
Ironwood	20	16	Good condition
Bitternut Hickory	10	45	Good condition
Basswood /White Elm *DB	10	45	Good condition

**Comments:** This small woodlot is located at the back of the houses on Arcturus Ave on a rock outcrop slope. The rocky side slope is compacted from use over the years. The trees are in good condition with young Sugar Maple, White Ash, Basswood and Ironwood regeneration present. A small trail goes through the middle at the bottom of the slope. This small woodlot would be a value to a community and should be retained.

*\*DB There is now good regeneration of a variety of species including sugar maple, white ash, basswood and ironwood. However, the northeast edge of the stand is ringed by buckthorn that is beginning to seed into the stand. There are feeding cavities on some trees in the grouping especially in white and green ash. Once again, there is woodpecker damage on many of the ash trees indicating the probable presence of emerald ash borer.*

### Grouping D – Intersection of Burma Road and Cottage Row

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	45 (10%) *DB	74-30	Good condition
White Ash	15	42	Good condition
Bitternut Hickory	15	46-32	Good condition
Basswood	15	60	Good condition
Silver Maple	10 (45%) *DB	60	Good condition

**Comments:** This small woodlot has a mix of trees in relatively good condition with the odd tree in fair condition with many cavities created by the birds. This small woodlot would be a value to a community and should be retained. Some of the trees would have to be removed or trimmed.

*\*DB There is a significant amount of invasive buckthorn in the grouping, particularly along Burma Road. In the areas where it is dense, it is effectively out-competing any natural regeneration of the native tree species. Woodpecker damage on many of the ash trees indicates the probable presence of emerald ash borer. There is good regeneration of white and green ash with some sugar maple and basswood in areas where there the understory is not dominated by buckthorn. The overstory trees continue to be in good condition.*

### Grouping E – On Cottage Row

Tree species	% Composition	Ave. Size (cm)	Condition
Silver Maple	100	61	Good condition

**Comments:** This is a group of 24 large Silver Maple that were located around a building at one time. These large Silver Maple are in good condition. This is definitely a stand that should be retained, as these are large old trees and if protected properly during construction would benefit a community. A number of these trees will require cabling and some trimming. Silver Maple is a water-seeking species and any development should not take place near these trees.

*\*DB Buckthorn is now completely dominant in the understory of this grouping and there is also some dog strangling vine as well. Due to the dominance of the buckthorn, there is virtually no natural regeneration of native species, although the odd sugar maple, white ash, and bitternut hickory seedling was found. The overstory trees continue to be in good condition.*

### **\*DB Grouping R – Slope opposite Intersection of Burma Road and Rigel Private**

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	70	85-30	Good condition
White Ash	10	40	Poor condition
American Beech	10	50-24	Good condition
Bitternut Hickory	10	20-60	Good condition

**Comments:** This grouping was not identified in the original McCready Report. This grouping on a rather steep slope (15%) is stabilizing the soil. Like group F it consists of mostly sugar maples, which are in good condition with the odd American beech also in good condition. The white ash appear to somewhat impacted by the emerald ash borer, shown by woodpecker activity on their upper stems. There is young natural generation of white ash, basswood, sugar maple, bitternut hickory and ironwood. This small woodlot would be a valuable asset to a community and should be considered for retention, in part due to its location slope stabilization, and in part due to its visual appeal.

### Grouping F – Intersection of Burma Road and Cottage Row

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	80	78-30	Good condition
White Ash	10	40	Poor condition
American Beech	10	50-24	Good condition

**Comments:** This small group of 24 trees could be considered a natural stand. It consists of mostly Sugar Maple, which are in good condition with the odd American Beech also in good condition, and White Ash, which are in poor condition. There is young natural generation of White Ash, Basswood, Sugar Maple and Ironwood. This small woodlot would be a valuable asset to a community and should be retained.

*\*DB The overstory trees continue to be in general good health. There is now heavy buckthorn in many places of the understory, but there is some regeneration of white ash, basswood, sugar maple and ironwood in areas where the buckthorn is not completely dominant.*

### Grouping G – Intersection of Burma Road and Via Venus

Tree species	% Composition	Ave. Size (cm)	Condition
Silver Maple	85	53	Generally in good condition. One tree has the top off and should be removed.
White Ash/Basswood	15	60	Good Condition

**Comments:** This grouping of Silver Maple was at the site of the old C.F.B Ottawa Arena and was probably used for picnic tables. The trees are in good condition although the soil is compacted. This group of trees is aesthetically pleasing and would be an asset to the community and should be retained.

*\*DB The overstory trees continue to be in general good health. There are bird nesting cavities in one dead silver maple. Now that the area is not continuously mowed any longer, there is a dense seedling layer of buckthorn in much of the understory.*

### Grouping H – Located on Bishop Blvd.

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	10 trees	64-14	Generally in good condition. One tree has a dead top off and should be removed.
White Ash/Basswood	1 tree	41	Good condition

**Comments:** This small stand is at the base of the slope by the fence. The slope has a number of trees and this group of trees would act as a buffer on the property line. This stand should be considered to retain when development commences.

*\*DB There is some sugar maple regeneration in areas, but buckthorn is beginning to dominate parts of the understory.*

### Grouping I – Located off Codd's Road

Tree species	% Composition	Ave. Size (cm)	Condition
Bitternut Hickory	40 (9 trees)	42-18	Good condition
White Ash	22 (5 trees)	53-35	Good to fair condition
Sugar Maple	13 (3 trees)	58-40	Good condition
Basswood	17 (4trees)	76-48	Good to poor
Ironwood	8 (2 trees)	26	Good condition

**Comments:** This small woodlot is a mixture of deciduous trees with a high percentage of Bitternut Hickory that is in good condition. The Basswood and the White Ash are a mixture of trees in good to poor condition. One basswood has a hollow base, while others have cavity holes. Due to its location on base, the large number of hickory present, and the health of the trees, this stand would be an asset to a community and should be retained.

*\*DB There are parts of the understory dominated by buckthorn but pockets of good natural regeneration of basswood, sugar maple and white ash. The mature white ash in the stand appears to be affected by the emerald ash borer. Otherwise, the overstory is generally in good health.*

### Grouping J – Located on Hemlock Road

Tree species	% Composition	Ave. Size (cm)	Condition
Sugar Maple	50	51-8	Good condition
White Ash	50	8	Good condition

**Comments:** Only portions of this entire stand would be recommended to retain. The identified half to retain is a mixture of Sugar Maple both large and small at the top of the slope to young White Ash at the bottom. There is not much humus layer on this slope. There is also a large patch of Black Locust to the east of this stand, which is not significant, and the rest of the stand to the west is Poplar that has reached its peak and is dying out. There is also a number of dead or dying elm. This is not the most ideal stand to leave but due to location in the west part of the base this is the best option.

*\*DB No additional comments.*

### Grouping K – Intersection of Burma Road and Cottage Row

Tree species	% Composition	Ave. Size	Condition
Sugar Maple	60 (16 trees)	42	Good condition
White Ash	20 (4 trees)	42	Fair to Good condition
Silver Maple	10 (2 trees)	29 & 66	Good condition- this tree requires cabling
Basswood/ Bitternut Hickory *DB	10 (2 trees)	34 & 34	Good condition

**Comments:** This grouping is mostly Sugar Maple with White Ash, Silver Maple and Basswood being less dominant. The ground cover is grass with natural regeneration of Sugar Maple, Basswood and White Ash. This is one of five woodlots at this intersection recommended for retention.

*\*DB There is good advanced regeneration (polewood sized) white ash. There are patches of dense, invasive buckthorn in the understory, but there is regeneration of sugar maple, bitternut hickory, as well as the aforementioned white ash, throughout the stand.*

### **Grouping L - Located on Cottage Row**

This woodlot is located on a slope with very little humus layer and a lot of brush. Much rubble is present on site. This woodlot was predominantly a Basswood, Sugar Maple stand in the passed. The Basswood is only in fair condition with a lot of dieback. The Basswood average size is 48 cm. The larger Sugar Maple are in fair condition and the younger trees (approx 7) at about 30 cm in diameter being in good condition. There is a patch of Black Locust that is invasive and not ideal for a new development. There is very little wildlife value noticed in this woodlot.

*\*DB There is now good polewood regeneration of ironwood which helps in stabilizing the steep slope. The mature basswood is generally still alive but appears to be declining in health. Heavy buckthorn regeneration in places. Towards the bottom of the slope at the north end of the grouping there is an almost pure stand of green and white ash. This will likely be very susceptible to emerald ash borer which is likely in the stand although there was no obvious appearance of it. The locust appears to only be in the east part of the grouping. There is the occasional mature bitternut hickory in the grouping.*

### **Grouping M - Located near the Driving Range**

Most of this small woodlot is Manitoba Maple that is invasive and not an ideal species to be considered for a community.

*\*DB There is also the occasional green ash in the grouping but appears to be impacted by the emerald ash borer. There is a dense buckthorn understory that is almost completely excluding any natural regeneration.*

### **Grouping N - Located near the Driving Range**

Most of this small stand is Norway Maple that is exotic and invasive and not an ideal species to have near natural sensitive areas. However the location of this stand may make it aesthetically pleasing .

*\*DB Although this grouping is comprised primarily of Norway maple, which as mentioned above, is an exotic and invasive species, it is successfully stabilizing the slope at this location. There are some sugar maples in the stand and a little bit of sugar maple regeneration, but a thinning of the mature trees to let more light in would be necessary to encourage more regeneration.*

### **Grouping O - Located off Hemlock Rd.**

The portion of this stand, which is located at the bottom of the hill or to the west of the maple stand, is of lower priority to maintain for a new community. This stand has poplar that has reached maturity and are starting to decline, elm which is dead, allot of common buckthorn and no trails present so it is not being used by the community.

*\*DB This grouping is primarily green ash at the bottom of the slope, and appears to be heavily infested with the emerald ash borer.*

### **Grouping P - Located Between Hemlock Rd and Dubhe Dr.**

This small woodlot is composed of the following species:

Rock Elm	60% average size 20cm
Poplar	10% average size 37cm
Siberian Elm	10%
Black Ash	10%
Black Locust	10%

This is a moist site with grass and some bulrushes. The trees are in fair to poor condition with ice storm damage still noticeable. Very few signs of wildlife. Asphalt has been dumped in spots. This woodlot has a lower value but due to its location may have aesthetic benefits for a community.

*\*DB A part of this grouping is Siberian or Chinese elm that appears to have been planted, possibly for slope stabilization purposes. Black locust is regenerating outwards from the grouping by root suckering, or vegetative reproduction. There is a dense understory of buckthorn in areas. At the lower part of the slope, where it appears to be at least seasonally wet, willow tends to dominate. There is a little bit of sugar maple, white ash, basswood and white elm regeneration throughout the grouping.*

### **Grouping Q - Located in Yards on Arcturus Ave. Behind the Storage Sheds on Via Venus.**

This area is comprised mostly of White Ash averaging 50 cm in diameter. These trees have matured and are showing signs of decline. Very little undergrowth is present. This grouping of trees has a lower value.

*\*DB There is no grouping of this description at this location at the time of this writing (Nov. 2012).*

***\*DB Grouping S - Located at the intersection of Burma Road and Montreal Road in the area considered for future acquisition.***

*This area is comprised mostly of Manitoba maple, green ash, and basswood averaging 20-40 cm in diameter. These trees are scattered throughout a very heavy understory of buckthorn where little natural regeneration occurs. These trees have matured and are showing signs of decline. Very little undergrowth is present. This grouping of trees has a lower value. Observations were made from afar for this grouping as the area itself was not accessible for close examination.*

**Tree Protection Guidelines:**

The same principles from Mr. McCready's previous report still apply at this time.

APPENDIX

### Trees Selected for Potential Retention

Tree #	Latitude	Longitude	Species	DBH in cm (1.3 metres above ground)	Tree # from J. McCreedy Report	Condition (Good, Fair, Poor)	Crown Radius in metres (centre of tree to dripline)	Comments/Notes/Recommendations
1	45.450046	-75.639841	Burr Oak	136.7	1	Good	10.5	Some seams on main trunk but not active. See McCreedy report comments. Crown appears in good shape. Specimen tree.
2	45.452697	-75.636935	Bitternut Hickory	66.6	2	Good	7	Beautiful tree in fall - see picture.
3	45.452729	-75.638178	White Elm	57.3	76	Good	5	No sign of Dutch Elm Disease.
4	45.451955	-75.63924	White Pine	48.8	75	Fair	4	Lightning strike in last 2 years - seeping on bole. Possible blister rust but crown healthy.
5	45.451326	-75.640458	Green Ash	57.5	63	Fair	5.5	Branch stripped of trunk likely through demolition. EAB present and apparent from woodpecker activity.
6	45.450718	-75.64102	White Pine	55.7	62	Good	6	Very slight yellowing in crown but otherwise healthy.
7	45.450295	-75.641494	White Spruce	51.7	72	Good	4	
8	45.45023	-75.641485	White Spruce	49.2	73	Good	3.5	
9	45.450193	-75.641554	White Spruce	48.8	74	Good	4.5	Slight defoliation - possibly spruce budworm.
10	45.449523	-75.64253	White Spruce	50.3	71	Good	5	
11	45.449576	-75.642885	Blue/White Spruce Clump	Average ~32	70	Good	4	Include 2 spruces to east? Either clump of to 2-5 depending.
12	45.449365	-75.642914	White Spruce	38.6	69	Good	4	
13	45.449314	-75.642999	White Spruce	38.6	68	Good	3.5	Some seeping from branch stubs.

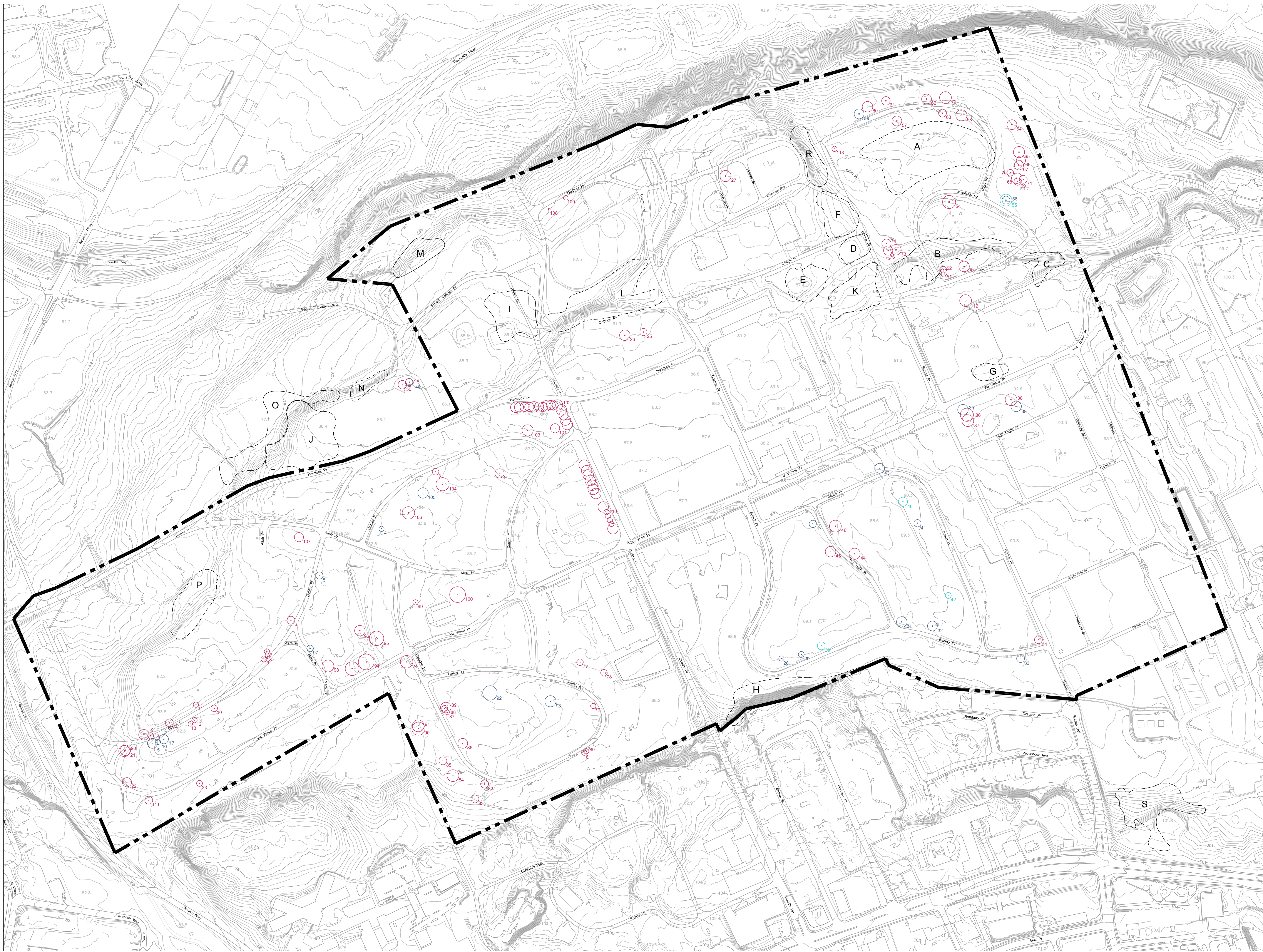
14	45.449333	-75.643406	White Pine	65.5	61	Good	6	Slight lean over road. Slight thinning in upper crown.
15	45.449053	-75.643739	White Pine	67.3	59	Fair	7.5	Note: Pictures Reversed from 15-17
16	45.449072	-75.643631	White Pine	41.7	58	Fair	4	Note: Pictures Reversed from 15-17
17	45.449109	-75.643516	White Pine	62.7	60	Fair	7	Note: Pictures Reversed from 15-17
18	45.449156	-75.643772	White Pine	51.6	56	Good	4.5	
19	45.449172	-75.643901	White Pine	67.8	57	Good	8	
20	45.448964	-75.644266	White Pine	71	55	Good	8	
21	45.448953	-75.644286	White Pine	73.5	54	Good	8.5	Very top of crown is somewhat thin.
22	45.448526	-75.644241	White Pine	52.4	53	Good	7	Some seeping, likely just from wounds but possibly from blister rust.
23	45.448499	-75.642831	Sugar Maple	34.1	52	Good	4.5	#51 of McCready report is missing.
24	45.450133	-75.638781	Burr Oak	76.7	64	Good	9.5	Potentially long lived tree. Nice, balanced crown.
25	45.454609	-75.634108	Bitternut Hickory	62.2	4	Good	5.5	Possibly some fomopsis nodules, but healthy.
26	45.454568	-75.63447	Bitternut Hickory	63.9	3	Good	8	
27	45.456731	-75.63248	Bitternut Hickory	74.6	21	Good	8.5	Nice, well balanced crown.
28	45.450122	-75.631495	Green Ash	42.1	28	Fair	4	Evidence of EAB.
29	45.450175	-75.631107	Green Ash	41.2	29	Fair	4.5	Evidence of EAB.
30	45.45029	-75.630717	Green Ash	51.2	30	Poor	6	Evidence of EAB. Epicormic branching on branches and on bole.
31	45.450605	-75.629147	Green Ash	69.3	31	Fair	8	Evidence of EAB.
32	45.450544	-75.628552	Green Ash	67.8	32	Fair	7.5	Evidence of EAB.
33	45.450086	-75.626846	Green Ash	77.7	33	Fair	6	Evidence of EAB.
34	45.450341	-75.626494	Green Ash	53.8	34	Good	6	No sign of EAB.
35	45.453499	-75.627913	Silver Maple	Average ~42	35	Fair	8	Some dieback/branches broken off.
36	45.453429	-75.627838	Silver Maple	56.66	36	Good	10	Some dieback/branches broken off.
37	45.453349	-75.627821	Silver Maple	91	37	Good	9	Impressive specimen. Good condition.
38	45.453629	-75.626975	Silver Maple	91.5	38	Good	9	Could use trimming.
39	45.453537	-75.626878	Sugar Maple	80.3	39	Fair	8	Good crown but some rot with fruiting bodies in seam on trunk.

40	45.452248	-75.629099	Sugar Maple	59.5	40	Poor	7	Significant crown dieback. Would require to pruning to give a chance of maintaining.
41	45.451953	-75.628821	Sugar Maple	66.6	41	Fair	5.5	Significant crown dieback. Would require to pruning to give a chance of maintaining.
42	45.45096	-75.628237	Sugar Maple	62	42	Poor	4.5	Significant crown dieback. Would require to pruning to give a chance of maintaining. Half of crown dead.
43	45.45271	-75.629545	Sugar Maple	65.1	43	Fair	7.5	Some branch dieback in crown.
44	45.451544	-75.63005	Green Ash	67.1	44	Good	8.5	Evidence of EAB.
45	45.451577	-75.630517	Green Ash	68	45	Good	8	Evidence of EAB.
46	45.451925	-75.630417	Green Ash	65.9	46	Good	9	No sign of EAB.
47	45.451959	-75.630857	Green Ash	50.1	47	Fair	5.5	Frost crack or lightning strike but no external indication of EAB
48	45.453959	-75.638673	Norway Spruce	60.1	48	Fair	5.5	Seam on lower bole but of little concern.
49	45.453952	-75.638668	Norway Spruce	63.9	49	Good	6	
50	45.453924	-75.638805	Norway Spruce	73.4	50	Good	6.5	
51	45.455379	-75.628263	Sugar Maple	73.4	25	Good	5.5	Active seam on main bole and power line tied into tree.
52	45.455418	-75.628267	Sugar Maple	52	26	Good	5	
53	45.455459	-75.627861	Sugar Maple	73.7	27	Good	8	White face wound on bole healing well.
54	45.456343	-75.628138	Green Ash	93	24	Good	10	Very large Green Ash - Specimen Tree. No sign of EAB.
55	45.45636	-75.627033	Green Ash	78.3	22	Poor	9	Losing crown - sparse branching. Cavities on bole.
56	45.45636	-75.627032	Green Ash	59.4	23	Fair	6	Active cavities on bole, but fairly healthy crown.
57	45.457459	-75.629137	Sugar Maple	79.7	18	Good	7.5	Very healthy crown.
58	45.457527	-75.627882	Sugar Maple	93	15	Good	8.5	Very healthy crown.

59	45.457561	-75.62987	Sugar Maple	82.4	20	Fair	7.5	Fruiting bodies (shelf mushroom) on main bole near ground. Likely from demolition damage. Healthy crown though.
60	45.457659	-75.629705	Sugar Maple	85.6	19	Good	8	Some major branch dieback but generally still healthy.
61	45.457736	-75.629346	Sugar Maple	74.3	17	Good	6.5	Relatively long bole and crown higher than its neighbours. Cavity in upper crown healing nicely.
62	45.457755	-75.628556	Sugar Maple	85.7	16	Good	7.5	
63	45.457559	-75.628248	Green Ash	57	14	Good	6	No external sign of EAB.
64	45.457392	-75.626902	Bitternut Hickory	70.1	12	Good	7.5	
65	45.457015	-75.626769	Sugar Maple	72.4	11	Good	8.5	Well balanced crown.
66	45.456898	-75.626734	Sugar Maple	48.9	10	Good	7	Adjacent to another sugar maple.
67	45.456835	-75.626774	Sugar Maple	63	9	Good	7	
68	45.456659	-75.626818	Sugar Maple	66.5	8	Good	8	Well balanced crown.
69	45.456611	-75.626802	Sugar Maple	52.5	7	Good	5.5	Active wildlife cavity in base of tree.
70	45.456734	-75.626943	Bitternut Hickory	49.6	6	Good	5	
71	45.456642	-75.626692	Sugar Maple	52.3	5	Good	6	Tall and straight with well balanced crown.
72	45.457772	-75.628187	Sugar Maple	88.5	15	Good	9	Large, impressive tree.
73	45.455697	-75.629182	Silver Maple	96.3	66	Good	8	Grouping of 3
74	45.455782	-75.629365	Silver Maple	56	65	Good	7	Grouping of 3
75	45.455687	-75.629334	Silver Maple	64.9	67	Good	7	Grouping of 3
76	45.455686	-75.629333	White Spruce	31.7	New	Good	3	Larger conifer in area of few conifers.
77	45.4501	-75.635409	Silver Maple	52.7	New	Good	5	Further back from road.
78	45.449952	-75.634946	Silver Maple	44.4	New	Good	5	
79	45.4495	-75.635162	White Pine	23.7, 29.6	New	Good	4	Double stemmed. Consider removing one stem to have a single stem tree (either stem could be removed).
80	45.448882	-75.635308	White Spruce	37	New	Good	4	
81	45.448861	-75.635346	White Spruce	38.6	New	Good	4	
82	45.448448	-75.637289	Sugar Maple	70.6	New	Good	6	Well balanced crown.




83	45.448246	-75.63748	Sugar Maple	64.9	New	Good	6	Well balanced crown.
84	45.448567	-75.637903	White Elm	71.2	New	Good	9	White Elm Dutch Elm Disease concerns but healthy now. A large, impressive tree.
85	45.448771	-75.638095	Sugar Maple	71.7	New	Good	6	Well balanced crown.
86	45.449007	-75.637706	Weeping Willow	95.5	New	Good	7.5	
87	45.449433	-75.638003	White Spruce	43.7	New	Good	3.5	
88	45.449488	-75.63805	White Spruce	46.9	New	Good	4.5	Adjacent to 89 & 87.
89	45.4495	-75.638029	White Pine	48.2, 44.1	New	Good	8	Adjacent to 88 & 87. Double stemmed.
90	45.449215	-75.638564	Silver Maple	82.5	New	Good	10	Has wildlife nesting and feeding cavities on one limb but in good condition.
91	45.449254	-75.638569	Silver Maple	92.3	New	Good	9	
92	45.449693	-75.637167	Basswood	68.1, 59.3, 58.4	New	Fair	11	Active wildlife nesting cavity in one limb.
93	45.449571	-75.635993	Silver Maple	86	New	Fair	8.5	Large limb broken off but recovering well and in otherwise good condition.
94	45.450135	-75.639565	Silver Maple	126.2	New	Good	12	Adjacent to 1.
95	45.450456	-75.639359	Weeping Willow	131.5	New	Good	11	
96	45.450564	-75.639682	Burr Oak	66.2	New	Good	8	
97	45.450328	-75.640653	White Spruce	67	New	Fair	5	Some 2nd year defoliation but otherwise in good condition.
98	45.450086	-75.64031	Silver Maple	77	New	Good	9	
99	45.450944	-75.638595	Sugar Maple	37.6	New	Good	4	Well balanced crown.
100	45.451044	-75.637775	Weeping Willow	104.6	New	Good	12	
101	45.453305	-75.635845	Sugar Maple	83.5	New	Good	7	
102	45.453622	-75.635794	Silver Maple Group	17.8 - 85.0	New	Good	Various	Grouping of 15 along corner.
103	45.45328	-75.63638	Silver Maple	64.8	New	Good	8.5	
104	45.452556	-75.638044	Silver Maple	85.7	New	Good	10	
105	45.452439	-75.638426	Sugar Maple	60.7	New	Fair	8	Somewhat lopsided.
106	45.452168	-75.638713	Sugar Maple	71.5	New	Good	9.5	

107	45.451852	-75.640847	White Pine	78.1	New	Good	7	
108	45.456305	-75.635911	Butternut	23.5	New	Good	3.5	
109	45.456456	-75.635589	Butternut	4.3	New	Good	1.5	Small dead butternut approximately 12 metres to the east of this tree may be sprouting back successfully.
110	45.452221	-75.634926	Silver Maple Group	20.2 - 74.6	New	Fair - Good	Various	Row along Codd's Road.
111	45.448275	-75.643821	Red Maple	72.7	New	Good	6	Nice tree to look at the end of Via Venus Road.
112	45.454991	-75.627838	Rock Elm	90.7	New	Good	9	DBH measured below low fork. Rare tree of this size and species.
113	45.457086	-75.630355	Sugar Maple	76.5	New	Good	8	



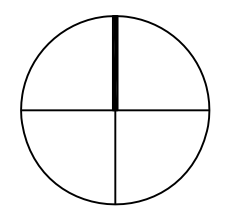
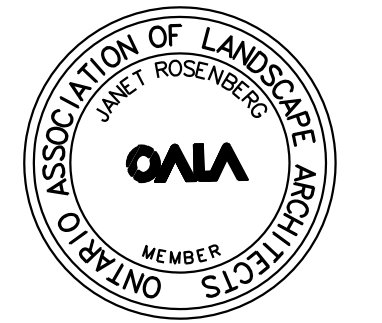
NOTES

LEGEND

-  SITE BOUNDARY
-  SIGNIFICANT TREE - GOOD CONDITION
-  SIGNIFICANT TREE - FAIR CONDITION
-  SIGNIFICANT TREE - POOR CONDITION
-  FOREST TREE GROUPING

ISSUE

1 2013-01-25 ISSUED FOR FINAL ARBORIST REPORT



**Janet Rosenberg & Studio**  
 Landscape Architecture and Urban Design  
 416 656 6665 • 416 656 5756 www.jrstudio.ca  
 148 Kenwood Avenue, Toronto Ontario M6C 2S3 Canada

CANADA LANDS COMPANY

ROCKCLIFFE

OTTAWA, ON

TREE SURVEY

SCALE: 1:2500  
 DRAWN: LP  
 CHECKED:  
 PROJECT NUMBER: 12-139  
 DRAWING DATE: 2013-01-24

**L100**

**CANADA LANDS COMPANY**



# CFB ROCKCLIFFE LANDS VEGETATION SURVEY

prepared by

**Thakar Associates Design Consultants**  
Landscape Architects

in association with

**Jim McCready**  
Arboricultural & Urban Forestry Consultant

# Contents

<b>INTRODUCTION .....</b>	<b>5</b>
<b>PURPOSE OF SURVEY.....</b>	<b>5</b>
<b>METHODOLOGY .....</b>	<b>6</b>
<b>EXISTING LANDSCAPE INVENTORY: AN OVERVIEW.....</b>	<b>10</b>
<b>LANDSCAPE TYPES .....</b>	<b>11</b>
<b>LANDSCAPE VALUE .....</b>	<b>11</b>
<b>LANDSCAPE TOLERANCES .....</b>	<b>18</b>
<b>PLANNING AND MANAGEMENT RECOMMENDATIONS.....</b>	<b>19</b>
<b>TECHNICAL APPENDIX.....</b>	<b>24</b>



## **INTRODUCTION**

There are few remaining prime development sites suitable for residential and mixed use development in the National Capital Region. Among these, CFB Rockcliffe is probably unique, not just in terms of its size, but also in its wealth of landscape and visual resources that are unmatched anywhere else in the City.

The existing vegetation on the Rockcliffe Base is as much a defining element of the site as its dramatic location overlooking the Ottawa River. Less obvious are other cultural and historic associations due to the past use of the site, especially during wartime, and there is another layer of social history symbolized by the generations of military families which have called CFB Rockcliffe their home for the past few decades.

Although the redevelopment of the site will replace the existing community and superimpose a new pattern on the landscape, retention of the most desirable and valuable existing trees and wooded areas of the Rockcliffe site will ensure a degree of continuity and links to the past. The existing homes and streets will give way to a beautiful and vibrant new community, but the stately and timeless trees that still stand will continue to serve as witnesses to the history of the Rockcliffe Base and shape the lives of the new residents far into the future.

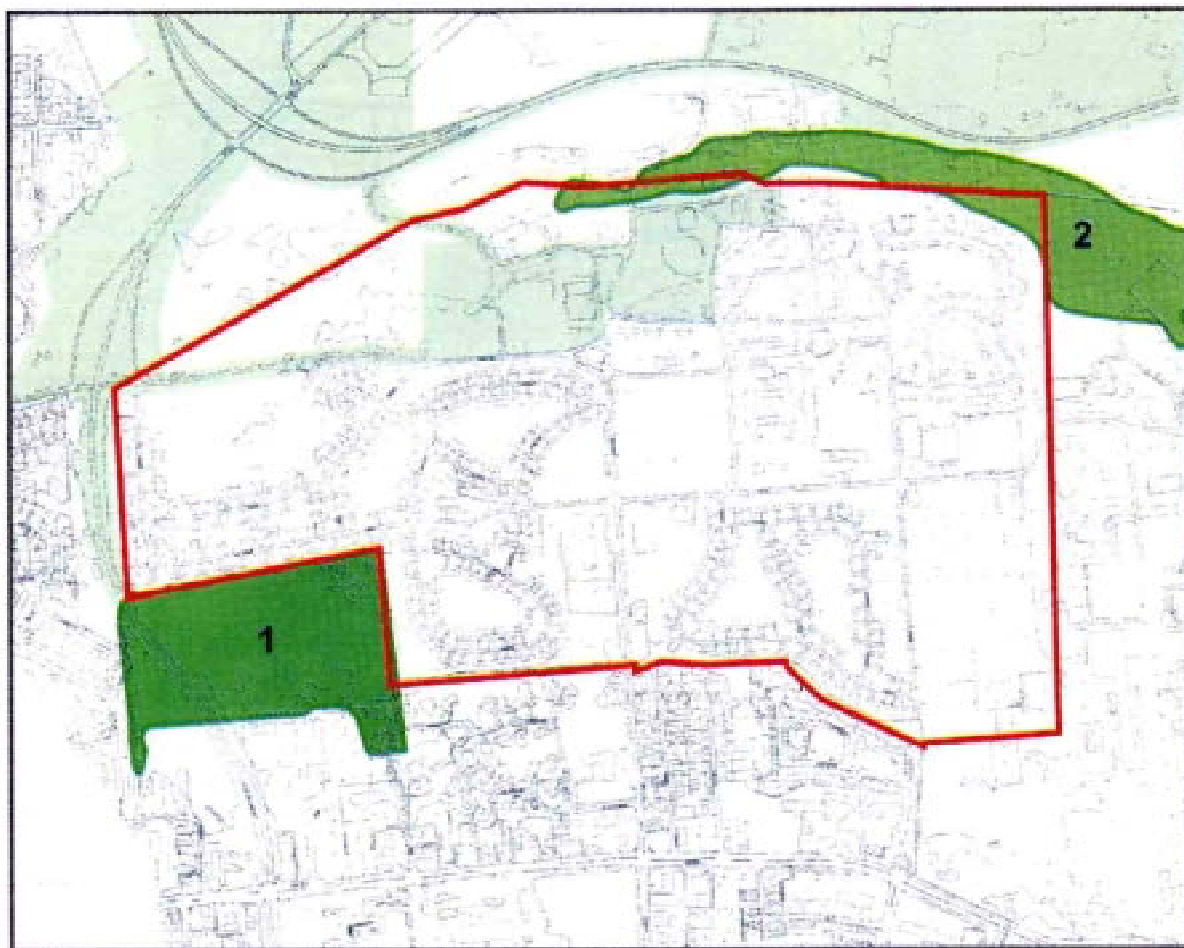
It is in this spirit that the vegetation of the Rockcliffe Base has been studied in this survey. An inventory of what is worth protecting is important in itself from a resource management perspective, but how it can inform, influence and inspire the development of the new community and enhance its livability is at least as important to consider throughout the planning and design of the new development.

## **PURPOSE OF SURVEY**

At this pre-planning stage, the primary purpose of this vegetation assessment was to obtain a broad overview of the quality, health and value of the existing landscape resources at CFB Rockcliffe, so that it may inform the development planning process, and allow the formulation of policies and guidelines that enshrine the protection of valuable natural assets into the planning and design parameters for the new community. Since the planning process provides for detailed assessments of existing vegetation at more advanced stages of development (such as site plan control), the level of detail and the depth of investigation are consistent with a broad assessment. Nevertheless, because the Rockcliffe site does feature a few outstanding groups and specimens (such as the Sugar Maple woodland off Rigel or the massive Bur Oak tree on Via Venus) it was deemed prudent to provide a little more detail so that it is possible to appreciate how valuable and special some of this vegetation is.

## METHODOLOGY

The methodology employed in studying the existing vegetation at the Rockcliffe Base involved two surveys, the findings of which were then integrated and analyzed to generate landscape value and landscape tolerance ratings to serve as the basis for broad planning and management guidelines. Accordingly, the arborist's inventory focussed on the urban forestry and ecological criteria, while the landscape architectural and urban design survey considered the spatial, structural, visual and aesthetic dimensions of the landscape, of which vegetation was perceived as one component integrated within the context of the natural and manmade environments. A photographic record of the existing vegetation was compiled to support and complement the inventory data.



-  Project Site Boundary
- City of Ottawa  
Natural and Open Spaces Study Areas
-  1 Montfort Hospital Woods - NOSS #2402
-  2 NRC Woods North - NOSS #2405
-  Greenway System

NOSS Areas near Rockcliffe Base ( from Niblett Environmental Associates Study 1998)

In describing and classifying the vegetation, three categories were used to help differentiate between high, medium and low value trees as well as groups of trees. Because of the unusual number of large individual trees in good condition on site not associated with streetscape plantings, it was decided to separate them into a category of their own. hence the three primary categories of vegetation studied were:

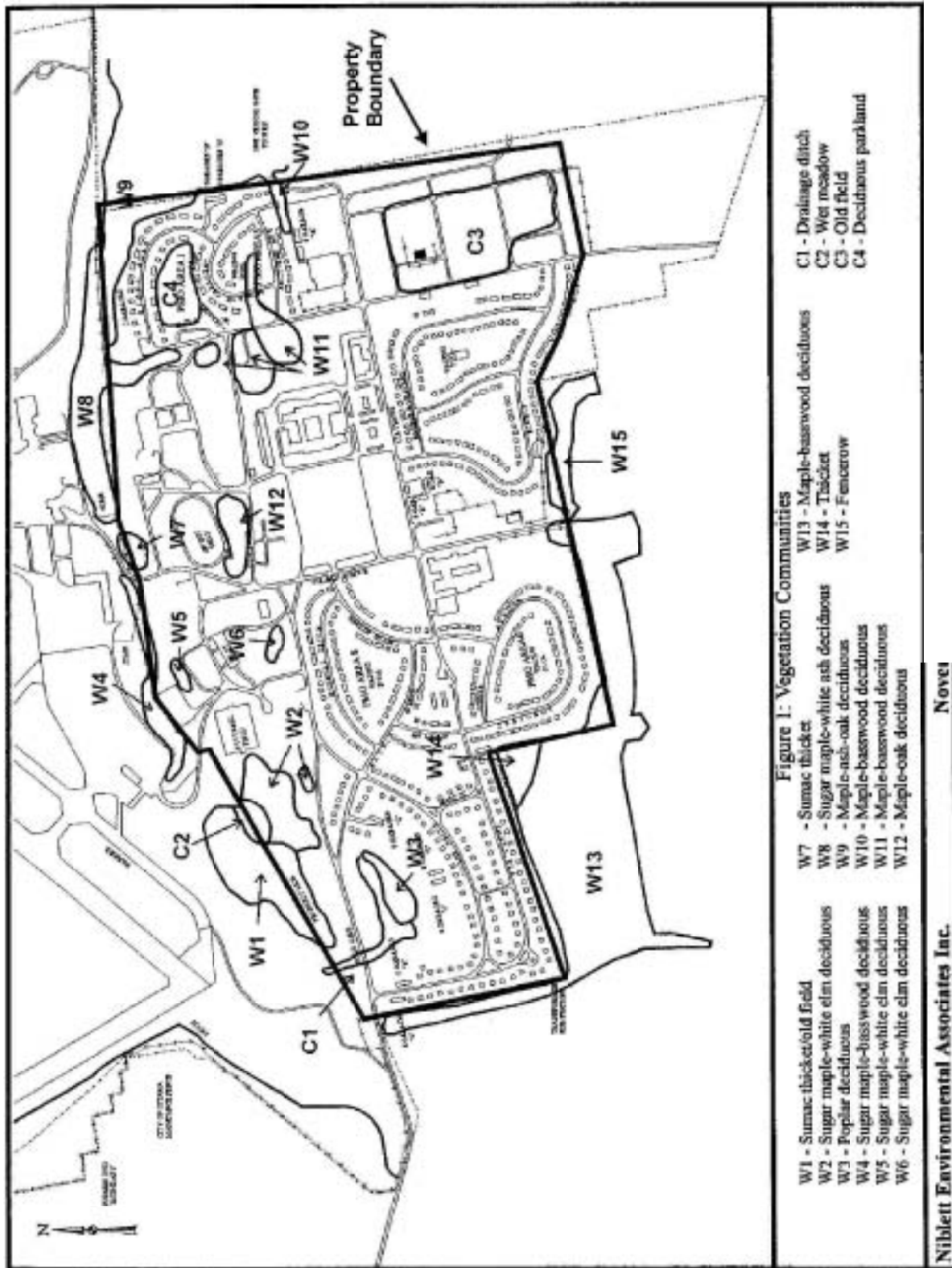
- Individual Trees
- Streetscape Trees, and
- Groups of Trees

These categories are distinct from broad landscape types (such as meadows or woodlands), which are generally based on the formal or ecological characteristics of the vegetation rather than their functional or spatial organization.

The arboricultural/urban forestry evaluation is appended to this report as a technical appendix, containing detailed information about various sectors and subsectors where groups or individual trees with varying degrees of significance were found, including a list of about 85 individual trees on the Base that merited mention due to their size, health and value.



Streetscape of aging Cedars along Via Venus



Woodlots and Vegetation Communities (Niblett Environmental Associates 1998)

Woodlot	Description
W-1	Dense stands of staghorn sumac and trembling aspen. Northern and eastern portion was open abandoned field with scattered white elm, rock elm, Scots pine and lilac.
W-2	Forested embankment dominated by white elm, white ash, green ash and sugar maple, open understory and cobble slope. Eastern edge dominated by mature black locust stand and scattered sugar maple (35-80 cm dbh).
W-3	Forested embankment with Carolina poplar, black locust and black willow. Open areas with white elm, Scots pine, European buckthorn and willow spp.
W-4	Top of ridge, forest dominated by white elm, sugar maple, basswood, red oak, buckthorn, white birch and trembling aspen.
W-5	Small woodlot on ridge with sugar maple and white elm.
W-6	Small woodlot with sugar maple and white elm.
W-7	Dense staghorn sumac stand with several white elm.
W-8	Upland deciduous forest on slope dominated by sugar maple, white ash, white elm and red oak. Scattered ironwood and basswood. Black locust, white birch and European buckthorn along edge. Dense stands of staghorn sumac in open area at end of Burma Road.
W-9	Upland deciduous forest dominated by sugar maple, white ash, basswood, beech, red oak and bitternut hickory: (30-65 cm dbh). Scattered trees within back of maintained lots with mature forest on the eastern boundary and the NRC property.
W-10	Forested ridge at the back of lots. Dominant species: sugar maple, beech, basswood and ironwood.
W-11	Forested ridge and open parkland with mature sugar maple and basswood (25-65 cm dbh)
W-12	Forested embankment with sugar maple, white oak and dense European buckthorn.
W-13	Deciduous forest dominated by sugar maple and basswood with scattered red oak, white elm and ironwood. Maple-basswood fencerow and well treed residential area south of DND property.
W-14	Early successional forest. Meadowsweet and European buckthorn thicket with young red ash, white ash and white elm.
W-15	Fencerow and forested ridge dominated by sugar maple, Norway maple, cedar and basswood.

## EXISTING LANDSCAPE INVENTORY: AN OVERVIEW

The CFB ROckcliffe site occupies an area of 134 ha (approx. 330 acres) on a terraced plateau overlooking the Aviation Museum complex and Eastern Parkway corridor, with panoramic views of Parliament Hill, the Gatineau Hills and the Ottawa River. Land use within the site is predominantly residential, along with some office and general use in buildings associated with the former military base operations, many of which have now been abandoned or demolished. The remaining open space, which forms a significant component of the Rockcliffe site at present, is therefore characterized by a mix of parkland and recreational areas (mainly ball diamonds), vacant sites interspersed with abandoned parking lots and foundations, and marginal areas overgrown with thickets and young trees.

A vegetation inventory of the the Rockcliffe Airbase lands was conducted by Niblett Environmental Associates Inc. in November 1998 for the Canada Lands Company as part of a natural environment study. This study focussed on the existing natural features of the site and their environmental significance, with reference to two areas of major ecological significance adjacent to the site, namely the **Montfort Hospital Woods** at the southwest corner of the site and the **NRC Woods** area along the escarpment and to the northeast of the site. These areas are designated as having high value under the NOSS classification and are presently being studied by the City of Ottawa for a possible reclassification and or restatement of boundaries. The study is expected to be completed in early 2005.

The vegetation component of the Niblett Study, comprising primarily of descriptions of woodlots and other major vegetation communities, is summarized on pages 6 & 7. Please refer to Map # 3 Landscape Types for an overview of the major landscape categories on the Rockcliffe Base site.



Spruce trees north of Hemlock Avenue near Driving Range

## **LANDSCAPE TYPES**

The vegetation of the CFB Rockcliffe site can be classified into four main landscape types:

- woodlots and escarpment forest
- parkland (active and unstructured)
- streetscape plantings
- vacant sites and disturbed areas.

Most of the natural existing vegetation of significance is restricted to woodlots along the perimeter of the base and along the terraced embankments that traverse the property. However, there is a significant vegetation component represented by the streetscape plantings in the residential sections that have matured (40-80 year old trees). While a number of these trees are at the end of their lifespans or non-native (or in the case of the Norway Maple, undesirable) species, they have nonetheless shaped the landscape of the base and represent a resource which can be retained on a selective basis to enhance the new community.

There are some particularly well preserved and valuable trees comprising mainly of hardwoods (sugar and red maple, bitternut hickory, ash, basswood) that are part of the streetscape in the residential enclave in the northeast corner of the site, which are a major asset to the Base landscape and as such have been recommended for preservation. Please refer to the Landscape Types map for more information..

## **LANDSCAPE VALUE**

The value and significance of the CFB Rockcliffe vegetation from an urban forestry and environmental perspective are discussed in the appended Arborist's Report as well as in the 1998 Niblett Study; however, from a land planning, landscape architectural and urban design perspective, there are certain additional criteria that help define key aspects of the existing landscape so that they may serve as development planning parameters.

For example, there is a row of silver maple trees on the south side of Hemlock at its intersection with Polaris. By themselves these trees are not considered high value or even desirable species to have in a streetscape planting layout, however, they are a strong visual marker at a potentially important node and may have the potential to serve as buffer plantings for future land uses along this section of the street. Accordingly, they assume a higher significance from a landscape and urban design standpoint. The following assessment of Landscape Value is therefore based on the perception of various trees and vegetation groupings as important elements of the overall landscape and their role in shaping the form and fabric of the new community.



Silver Maples at Hemlock and Polaris

As can be expected, some of the oldest trees and densest groupings of mature vegetation are to be found in the relatively undisturbed woodlots and escarpment forest around the periphery of the site. However, there are several dozen trees (deciduous and coniferous) along many of the streets within the residential sections which have grown to enormous size. While many of these are Norway Maple and Littleleaf Linden (especially in the south west corner of the site), the mature Sugar and Silver Maples, Ash, Basswood and Bitternut Hickory in the northeastern portions of the site are large and highly valuable trees in good condition.

There are three major concentrations of trees on the CFB Rockcliffe site that are readily apparent (see Areas 1, 2 & 3 on attached map) - all three are part of existing streetscape plantings associated with the three main residential enclaves on the site. Within these areas and over the rest of the site, there are various other individual trees and groupings of trees that are of varying degrees of significance. The Arborist's assessment has resulted in the following rating of **85 individual trees** and **17 groupings**:

- 21 Individual Trees of High Value**
- 42 Individual Trees of Medium Value**
- 12 Individual Trees of Low Value**
  
- 11 Groupings of High to Medium Value**
- 6 Groupings of Low Value**

Please refer to *Technical Appendix: Arborist's Report* for a more detailed description of these trees and groups. The 85 individual trees as well as the 16 groupings are indicated on the Landscape Values Map.

From a landscape-value perspective, the functional and visual significance of these individual and groups of trees will become more apparent at subsequent stages in the master planning process with increasing definition of the spatial organization of the site and the major land use components. However, it is possible to make general observations at this stage on how these trees may be able to play a part in the design of the new community. Some of these groups may be valuable simply as anchors of a potential park development, while some may serve as buffers or linear elements defining corridors or edge conditions. Still others may help to frame vistas and sightlines, while those forming woodland landscapes may afford possibilities for pathway corridors and passive recreational use in conjunction with other types of open space and park development.

The following is a general discussion about the significance and value of vegetation in the three Areas referred to earlier, and a comment on the landscape value of the individual trees and groupings identified in the arborist's ratings.



Sugar Maples on Burma near Cottage



Maple Woodland near Rigel

### **Area 1**

The most important of the streetscape plantings is in the northeast corner of the site in the area bounded by Burma Rd. on the west and Rigel, Minarski and Arcturus Streets to the east and south. This area is characterized by towering maples, hickory, basswood, elm and ash, with some large spruce and pine, resulting in a very mature and stately environment that is of outstanding landscape significance

#### Potential Landscape Value:

The trees in this area represent both an opportunity as well as a constraint. Major

disturbances to subsurface conditions and microclimate due to construction activity, new development and site services/utility upgrades will probably result in the loss of some of these trees, so a high degree of caution and care are needed to ensure that impacts are minimal. On the flip side, the ‘instant landscape’ value and ‘established’ look afforded by the existing trees could justify a significant premium for lots that could offset the higher cost in saving them. The proximity to other prime quality natural open space and passive recreation in the adjacent NRC Woods is another asset in this location.



View of Ottawa River from NRC Woods at escarpment edge

## Area 2

Another major grouping but of moderate significance and retention value, are the streetscape plantings in the southwest corner of the site, south of Hemlock Avenue. A large percentage of the trees in this area are Norway Maple, Littleleaf Linden, White Ash and White Cedar, and as such do not represent a particularly valuable stock of desirable and primarily native trees. The Norway Maple (*Acer platanoides*) is a very invasive non-native species and hence not worthy of retention, while the Littleleaf Linden (*Tilia cordata*) and the White Ash (*Fraxinus americana*) are not too desirable because of problems with insects and diseases. The White Cedars (*Thuja occidentalis*) have reached the end of their lifespans and many have become sparse and leggy thus diminishing their retention value.

The exceptions to this are the large White Pines at the corner of Venus and Dubhe, and the massive Bur Oak tree northeast of the intersection of Venus and Mars. These trees are in very good condition and highly valuable, and any future development should make every effort to save and incorporate them into the new pattern. Apart from this there are a few large Ash trees on Venus that are in generally good shape, so they should be protected as well.



Large White Pine in good condition, on Dubhe near Venus

Notwithstanding the concerns noted above regarding ‘undesirable’ trees, efforts should be made to save any large tree in good health over 250 mm in caliper regardless of species, because the landscape value these trees represent is enormous, given that a normal urban tree takes a good 25-30 years to reach a mature size in this region. Where these trees are directly in conflict with development plans, road layouts and buried services, they may be removed as long as a commensurate replacement in new trees, especially native hardwoods such as oaks and maples, can be installed to fill the gaps in the landscape.

#### Potential Landscape Value:

Like the trees in Area 1, a significant number of trees in this area are of substantial size and many are in good health; however, quite a few of them are Norway Maples and Littleleaf Lindens and hence not of high retention value. Nevertheless, because of the ‘instant landscape’ value and the ‘established’ look they provide they should be preserved and

incorporated into the new street and lotting layouts to the extent possible, without unduly constraining the flexibility of site development the new development. The Norway Maples and White Cedars may be removed however, because the former is an undesirable and invasive species while the latter are at the end of their lifespans and probably will not survive changes in the vicinity.

### **Area 3**

The last of the three major groupings, but of low significance and retention value, is the streetscape vegetation in the southeast corner of the site, south of Via Venus and bounded by Burma Road in the east and Codds Road/Polaris in the west. A large percentage of the trees in this area are Norway Maple, Littleleaf Linden, White Ash and White or Colorado Spruce, and as such do not represent a particularly valuable stock of desirable or predominantly native trees.

#### Potential Landscape Value:

With the exception of a few Linden and Ash, there are no trees of any intrinsic value in this sector worth retaining. As with the other sectors though, if large trees in good condition can be saved without compromising site servicing and site utilization efficiencies, they can certainly enhance the marketability of any residential lots on which they are located. The longevity of trees such as Ash and Linden is fairly good since they are trees that can withstand tough urban conditions including poor soils and disturbance.

The decision to retain individual trees where there is a question about the long term survivability can best be made at the site planning level, when an arborist and/or landscape architect can determine the feasibility of retention based on the actual configuration of roads, services and buildings.



Typical streetscape vegetation along Bishop and Barker

## Individual Trees and Groupings

One of the noticeable features of the CFB Rockcliffe landscape is the surprising number of large individual trees in good condition scattered throughout the site. Of the 85 trees identified, about 21 trees are in exceptionally good condition and are described in detail in the Technical Appendix. Their value in shaping and structuring the new community is immeasurable. Not only do they impart a timeless quality to the environment but in terms of Fall colour (many of these trees are maples and ash), microclimate, wildlife habitat and visual enhancement their functional value is very high.



Bur Oak on Via Venus



White Ash on Via Venus



White Pine off Mynarski



Basswood on Burma Road

Of the various 17 tree groupings, 11 are of medium to high value due to their potential as open space and environmental resources that can augment parkland and help to provide a pleasing balance between developed and natural areas. The best of these are found in the north central and northeast areas of the site, especially the Sugar-Maple-dominated woodlands and hedgerows that are spectacular in the Fall, but also provide beautiful backdrops and natural recreation areas close enough to residential uses. There are a few significant groupings of trees dominated by Silver Maple which are also quite magnificent (along Burma Road) and their preservation would be of great benefit to the future community.

Please refer to *Technical Appendix: Arborist's Report* for a more detailed description of these trees and groups. The 85 individual trees as well as the 16 groupings are indicated on the Landscape Values and Tolerances Map.

## **LANDSCAPE TOLERANCES**

To improve the long term health and survivability of the vegetation designated for protection on the Rockcliffe Base, it is essential to understand the tolerance levels that trees of various species and in specific growing conditions exhibit to physical and environmental changes that are the inevitable aftermath of development.

In general, trees that are part of natural groupings such as woodlots and hedgerows are less likely withstand the changes in their immediate environment by development activity than trees which are part of existing streetscapes and disturbed areas because these 'urban' trees have grown accustomed to air and soil pollution, artificial light levels, limited moisture and other realities of a relatively hostile 'built' environment.

Trees in natural groups growing close to each other often have overlapping roots and branch structures that if disturbed may suffer significant stress due to alteration of growing conditions. Trees that are in the interior of such groups are much more vulnerable if they are suddenly exposed to more intense levels of wind or sunlight. That is why the thinning or alteration of woodlot edges has to be undertaken with great care to ensure that there are no 'downstream' effects triggered by changes or removals that may appear to be minor or inconsequential in the context of the larger transformation of the site, but which may cumulatively



Bitternut Hickory trunk off Burma Road

## **PLANNING AND MANAGEMENT RECOMMENDATIONS**

Generally speaking, a development planning approach that is sensitive to and cognizant of the importance of retaining and incorporating existing trees of value into the new master planning strategy for the new community has to be based on a somewhat unconventional philosophy of site development. In this approach, engineering, cost, financial return and other criteria are not only balanced with tree protection parameters but in many cases are driven by them.

Nowhere is this approach more crucial than in the case of CFB Rockcliffe, not just because of the wealth of its vegetative resources but also their potential to dramatically enhance the quality of the new community and make it a model of enlightened and visionary community planning. Far too often decisions to strip a site of all existing vegetation are made on expedient considerations that make short-term financial sense and ‘simplify’ engineering design and construction planning, but rob the new community of a priceless resource that has the potential to enhance the lifestyle of future residents in many ways.

Moreover, in the case of CFB Rockcliffe, the ancient and stately trees are associated with the colourful wartime history of the site and therefore are part of the natural and cultural heritage of the place. The City of Ottawa and the community at large also have a stake in the preservation of significant vegetation resources and the Rockcliffe site is already well known as perhaps the last remaining property in the Capital Region which has a wealth of trees that the community has an interest in preserving.

The decision to undertake this inventory of the CFB Rockcliffe vegetation is a reflection of CLC's strong commitment to the stewardship of the site's natural assets and the incorporation of the existing trees and natural landscape into the planning vision for the new community. Hence the following recommendations and guidelines are designed to help achieve the key objectives and vision as defined in the Rockcliffe Planning and Design Charrette (see page 8, Design Concept - Principles)..

### **General Guidelines and Recommendations:**

1. Formulate a clear vision for the new community that enshrines the protection - and celebration - of its unique vegetation resource as a fundamental element of the development planning philosophy.



Large group of Silver Maples off Via Venus east of Burma Road

2. Undertake a comprehensive Site Analysis that documents and evaluates all key site features and contextual elements at the earliest stages of the Master Planning process to ensure that planning principles and design guidelines contain clear and specific references to important site assets such as vegetation, views, open space linkages, cultural resources, etc.

3. Explore alternative standards, construction technologies, BMPs and other innovative approaches that incorporate open space resources, including trees, for functional enhancement (e.g. stormwater storage or bioretention facilities) or windbreaks and shelterbelts for microclimate mitigation.



Large Spruce along north property limits

4. Plan overall site organization and circulation patterns to minimize length of paved roadways and service trenches, and by locating these potentially damaging site interventions away from existing trees designated for protection.

5. Explore opportunities for higher density in residential land uses to minimize built up areas and to maximize green space. Clustering of residential lots may facilitate the retention of groups of trees at major nodes or intersections which could be dedicated as pocket parks that could enhance the community fabric.

6. Ensure the involvement of a landscape architect, grounds maintenance specialist and certified arborist as members of the core consultant team and ensure their involvement from the earliest stages of Master Planning. Depending on the consultative framework adopted by CLC, it would also be useful to include a community representative as well a member from the City of Ottawa's Urban Forestry Division to attend key meetings where vegetation management decisions are to be reviewed. If the participation or direct involvement of these representatives is not feasible, perhaps a strategy of information and communication should be adopted to ensure that these stakeholders are kept informed.

7. Undertake a Long-Term Landscape Resource Management Plan (prepared by a team comprising of a landscape architect, arborist, maintenance specialist and CLC staff) as an adjunct to or part of the overall Master Plan for the new community, to develop a prudent strategy for sustaining the CFB Rockcliffe landscape in perpetuity. Many of the mature trees on the site will eventually decline and die, some sooner than usual because of changes to environmental conditions caused by the new development. It is also prudent to protect against the unexpected loss of trees due to insect or disease, hence a pre-emptive planting strategy that monitors the evolving landscape and seeks to replace older trees over time should be in place.

8. Prepare a comprehensive well-illustrated handbook for new homeowners as well as property management personnel to interpret the special nature of the site's natural, scenic and cultural resources, so that people will be encouraged to take a proprietary interest in their living environment and adopt an attitude of stewardship to help ensure the long-term survival of the Rockcliffe landscape.

9. Immediately prior to each distinct phase of development and construction engage a team comprising of a landscape architect and arborist to review the vegetation management strategy and undertake removals in consultation with the community and City of Ottawa.

### **Tree Protection Guidelines:**

These are general tree-protection guidelines that are universally applicable to all situations where existing vegetation is designated for preservation as part of new development. Site-specific landscape and tree preservation guidelines will be required at the site plan approval stage to ensure that unique or localized conditions are factored into the preservation and management strategy. Please also refer to tree protection guidelines in the Arborist's Report.

1. Minimize grade changes around existing trees; if grade changes are absolutely necessary, install tree wells, and undertake other protection measures in consultation with a landscape architect and under the supervision of a certified arborist.

2. Install effective construction fencing (not the flimsy snow fencing of vinyl or wood slats used on many sites currently ) that will not be damaged or displaced by construction equipment or vehicles, located generally along the dripline of the tree or groups of trees. If in doubt consult an arborist to establish actual dripline extent because many trees have root spreads beyond the crown diameter which is the normal determinant of the dripline limit.

3. Avoid compaction of the soil surface around the base of the tree and generally within the dripline zone. The tree's feeder roots are within the top 15 cm of the ground surface and

compaction within this zone can effectively smother a tree. Where possible, replace maintained grass surfaces under trees with native perennial beds to enhance water and oxygen absorption.

4. Avoid attaching cables, nails, hooks or affixing signs to tree trunks as these can girdle or poison the tree.

5. Prepare detailed tree protection plans at the site plan submission stage so that appropriate investigations of the health and condition of existing trees, potential impacts of development, layout changes, and mitigation measures may be devised and built into binding agreements between developers and regulatory authorities.

6. Design lighting and fencing layouts that will not negatively impact on the health and integrity of trees.

7. Incorporate provisions into homeowner agreements that ensure strict compliance with tree protection measures after the completion of development and construction. Pruning, fertilizing and general management of trees should be restricted to specialists.

8. Engage a team comprising of a landscape architect, property management specialist and arborist to undertake the preparation of a site specific Landscape Maintenance Manual/ Handbook for each sector of the new CFB Rockcliffe Community.



# TECHNICAL APPENDIX

## ARBORIST'S REPORT

prepared by

**Jim McCready, Certified Arborist and Urban Forestry Consultant**

Summer/Fall 2004

### ROCKCLIFFE BASE VEGETATION SURVEY

#### **Purpose Of the Survey:**

The primary objective of the survey is to provide an overview of the quantitative and qualitative aspects of the existing vegetation resource at the Rockcliffe base so it may serve to inform the Canada Lands Company and ensuing developers of important vegetation that should remain for the benefit of the community. This is not a detailed inventory that must be done as a Tree Conservation Plan for the City of Ottawa but should assist in developing such a plan.

#### **Method of Gathering Information:**

Discussions were held with staff from the City of Ottawa Environmental Management Community Design and Environment division concerning areas of significance in or near the Rockcliffe Base. The City staff identified three areas and copies of the significant areas with maps were provided. The three areas are

1. Montfort Hospital Woods
2. NRC Woods North
3. Airbase Woods

Discussions and a field visit were conducted with City staff from Forestry Services. As this is already a developed area it was important to discuss what are the important groups and individual trees that should be maintained considering footprints of the removal of existing housing and future housing development will have an effect on these trees.

Reports were then reviewed and a field inventory or assessment was conducted of all the groups of trees and individual trees throughout the base. All groups of trees were assessed except those that were identified in the report received from the City staff and the two areas that affect the base where only walked through to confirm the information in the reports was correct.

All streets, roadways, backlots and the open fields were assessed for significant trees or trees considered worthy of keeping when development occurs on the base. Only those trees worthy of keeping were inventoried and identified.

### **Landscape Value Assessment Overview:**

Trees are an important part of the infrastructure for any city and community and as such trees should be identified for retention during planning phase of any subdivision. Trees bring value to the community of having larger wooded areas that protect special features for ecological, social and recreational reasons and identifies healthy mature trees that can benefit individual lots and homes. The market value of a home with large healthy trees on the lot can be 5 to 20% higher than similar properties without trees.

When looking at the base as a whole there are a number of factors that must be taken into consideration when giving priority to trees to retain:

1. There was no rare tree species found on the base (this does not include NRC North Woods where a complete inventory was not undertaken due to the studies being done by the City). However are trees that could be consider significant due to species, age, size, overall health and what these trees would add to a new community.
2. Wildlife prefers large tracts of land with corridors for movement. The NRC Woods North with the proximity to the Airbase Woods and the Ottawa River is the most significant habitat and food source for wildlife on the base. There were a number of cavity trees observed and food source species such as oak and beech.
3. The northeast corner of the base adjacent to the NRC Woods North contains the most significant trees that should be retained during development. If trees that are identified were protected properly during construction values of these lots would be significantly higher than other lots on the base.
4. There are a number of small woodlots or grouping of trees on the base. It is more beneficial for a community and easier during construction to protect groupings of trees than individual trees. Some groupings of trees are more beneficial to maintain than others because of species composition, age and health of the trees.
5. Individual trees on the lots were either here before the base was constructed or planted at or after the construction. Those trees here before construction, if still healthy, will be more beneficial to protect, as they are larger majestic trees, which will bring value to the community. The trees that were planted in many cases have reached their prime like the Little Leaf Linden, or trees that are exotic and invasive such as the Norway Maple, which would be detrimental to the natural wooded areas, and are lower in priority to protect.
6. There are a number of trees that are too close to the present building footprint and as a result it may not be practical to retain these trees as there will be too much root damage after the construction is complete.

### **Landscape Value Assessment Priorities;**

During the assessment it became necessary to prioritize the groups and individual trees for retention taking into consideration six factors above. The prioritized list is as follows:

1. **Individual trees of high value** trees that must be protected due to species, size, age and/or health.
2. **Tree groupings (including woodlots) of high value** that must be protected due to species, size, age and/or health.
3. **Streetscape trees of high value** that are worth protecting to benefit lots and homes or planned greenspace.
4. **Streetscape trees of medium value** would be worth keeping, if possible, to benefit lots and homes. Most of these trees are in areas where these are not the most ideal trees due to species or age or priority has been given to other trees in the area.
5. **Streetscape trees and groups of low value** that are low in priority due to species, age, or health. However, it would be most beneficial to the community as a whole if the healthiest of these trees can be retained wherever possible.

*Note: Although not situated on the base proper, the two most valuable areas for identification/protection from an ecological standpoint are the **Montfort Hospital Woods** and the **NRC Woods North**. These are special areas identified by the City and are part of the Urban Natural Area Study, which will be completed this fall with further evaluation this winter. Once identified by the City as Urban Natural Features an Environmental Impact Statement (E.I.S.) will be required for any development within 30 metres of the boundary. The National Capital Commission has purchased the Montfort Hospital Woods.*

### **Priority 1: Individual Trees of High Value**

Table 1 is a list of significant trees that must be retained and protected due to their species, age, size or overall health. Diameters of significant trees were measured 1.3 metres above the ground commonly known as *diameter at breast height*. Location was based on street name or street number if available then marked and numbered on a map.

*These trees must be adequately protected during construction. Other measures may be necessary to ensure their long-term health and survival.*

**Table 1 – Individual Trees of High Value**

<b>No.</b>	<b>Species</b>	<b>Diam.(cm)</b>	<b>Location</b>	<b>Comments</b>
1	Bur Oak	127	77 Via Venus	A large majestic Bur Oak 150 years plus in good condition which must be identified and protected during development
2	Bitternut Hickory	59	44 Hornell	A large tree in excellent condition
3	Bitternut Hickory	59	Cottage Road	A large tree in good condition

4	Bitternut Hickory	59	Cottage Road	A large tree in good condition
5	Sugar Maple	62	Rigel Road	Good condition.
6	Bitternut Hickory	46	Rigel Road	Good condition.
7	Sugar Maple	57	Rigel Road	Good condition.
8	Sugar Maple	59	Rigel Road	Good condition.
9	Sugar Maple	66	45 Rigel Road	Good condition.
10	Sugar Maple	45	47 Rigel Road	Good condition.
11	Sugar Maple	66	47 Rigel Road	Good condition.
12	Bitternut Hickory	63	41 Rigel Road	Good condition.
13	Sugar Maple	50	34 Rigel Road	Good condition.
14	White Ash	45	32 Rigel Road	Good condition.
15	Sugar Maple	66 (est)	26 Rigel Road	Good condition.
16	Sugar Maple	80 (est)	25 Rigel Road	Good condition.
17	Sugar Maple	80 (est)	19 Rigel Road	Good condition.
18	Sugar Maple	70 (est)	16 Rigel Road	Good condition.
19	Sugar Maple	60(est)	11 Rigel Road	Good condition.
20	Sugar Maple	66	9 Rigel Road	Good condition.
21	Bitternut Hickory	70	Off Cosmos	Good condition.

## **Priority # 2: Tree Groupings (and woodlots) of High Value**

There are a number of small woodlots or groupings of trees on the base. It is more beneficial for a community and easier during construction to protect groupings of trees than individual trees. Some groupings of trees are more beneficial to maintain than others because of species composition, age and health of the trees.

Only those woodlots or groupings that are high in priority and recommended for retention are recorded in this section. Those groupings not considered to be of high priority for retention will be recorded in another section.

The small woodlots were assessed looking at the species composition, size of the trees present and the overall health of the trees and woodlot. If a trail was present and used by the community it was noted.

The woodlots or groupings of trees are recorded in table form below. Each table lists species, composition, average diameter, and comments for that given area.

### **Grouping A –Between Rigel Road and Mynarski Crescent**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	70	35	Good condition
White Ash	20		Fair condition
Basswood	10		Poor to fair with some trees dying back from the top and should be removed

**Comments:** There are also a few Bitternut Hickory and American Beech in this stand. This is very park-like with all the underbrush cleared out with some grass and very little humus present. The residents have used this for many years. With the removal of the trees in poor condition this area could be used as greenspace for any development.

### **Grouping B – Intersection of Mynarski Cr. and Arcturus Ave**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	65	60	Good condition
Ironwood	20	16	Good condition
White Ash	10	45	Poor condition
Basswood	5	60	Poor condition

**Comments:** A very small woodlot consisting of large old Sugar Maple in relatively good condition with Ironwood mixed in. The odd White Ash and Basswood are present but they are in poor condition. There is natural regeneration of young Sugar Maple and Ironwood present. A small trail runs through the woodlot. Large boulders are present as if it were used as a dumping area at one time. If possible this would be worth retaining.

### **Grouping C –Behind Arcturus Ave**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	60	45	Good condition
Ironwood	20	16	Good condition
Bitternut Hickory	10	45	Good condition
Basswood	10	45	Good condition

**Comments:** This small woodlot is located at the back of the houses on Arcturus Ave on a rock outcrop slope. The rocky side slope is compacted from use over the years. The trees are in good condition with young Sugar Maple, White Ash, Basswood and Ironwood regeneration present. A small trail goes through the middle at the bottom of the slope. This small woodlot would be a value to a community and should be retained.

### **Grouping D– Intersection of Burma Road and Cottage Row**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	45	74-30	Good condition
White Ash	15	42	Good condition
Bitternut Hickory	15	46-32	Good condition
Basswood	15	60	Good condition
Silver Maple	10	60	Good condition

**Comments:** This small woodlot has a mix of trees in relatively good condition with the odd tree in fair condition with many cavities created by the birds. This small woodlot would be a value to a community and should be retained. Some of the trees would have to be removed or trimmed.

### **Grouping E– On Cottage Row**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Silver Maple	100	61	Good condition

**Comments:** This is a group of 24 large Silver Maple that were located around a building at one time. These large Silver Maple are in good condition. This is definitely a stand that should be retained, as these are large old trees and if protected properly during construction would benefit a community. A number of these trees will require cabling and some trimming. Silver Maple is a water-seeking species and any development should not take place near these trees.

### **Grouping F– Intersection of Burma Road and Cottage Row**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	80	78-30	Good condition
White Ash	10	40	Poor condition
American Beech	10	50-24	Good condition

**Comments:** This small group of 24 trees could be considered a natural stand. It consists of mostly Sugar Maple, which are in good condition with the odd American Beech also in good condition, and White Ash, which are in poor condition. There is young natural generation of White Ash, Basswood, Sugar Maple and Ironwood. This small woodlot would be a valuable asset to a community and should be retained.

### **Grouping G– Intersection of Burma Road and Via Venus**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Silver Maple	85	53	Generally in good condition. One tree has the top off and should be removed.
White Ash/Basswood	15	60	1 of each in good condition

**Comments:** This grouping of Silver Maple was at the site of the old C.F.B Ottawa Arena and was probably used for picnic tables. The trees are in good condition although the soil is compacted. This group of trees is aesthetically pleasing and would be an asset to the community and should be retained.

### **Grouping H– Located on Bishop Blvd.**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	10 trees	64-14	Generally in good condition. One tree has a dead top off and should be removed.
White Ash/Basswood	1 tree	41	Good condition

**Comments:** This small stand is at the base of the slope by the fence. The slope has a number of trees and this group of trees would act as a buffer on the property line. This stand should be considered to retain when development commences.

### **Grouping I – Located off Codd's Road**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Bitternut Hickory	40 (9 trees)	42-18	Good condition
White Ash	22 (5 trees)	53-35	Good to fair condition depending on the tree.
Sugar Maple	13 (3 trees)	58-40	Good condition
Basswood	17 (4trees)	76-48	Good to poor- one tree has a hollow base another has cavity holes
Ironwood	8 (2 trees)	26	Good condition

**Comments:** This small woodlot is a mixture of deciduous trees with a high percentage of Bitternut Hickory that is in good condition. The Basswood and the White Ash are a mixture of trees in good to poor condition. Due to its location on base, the large number of hickory present, and the health of the trees, this stand would be an asset to a community and should be retained.

### **Grouping J – Located on Hemlock Road**

<b>Tree species</b>	<b>% Composition</b>	<b>Ave. Size (cm)</b>	<b>Condition</b>
Sugar Maple	50	51-8	Good condition

White Ash 50 8 Good condition

**Comments:** Only portions of this entire stand would be recommended to retain. The identified half to retain is a mixture of Sugar Maple both large and small at the top of the slope to young White Ash at the bottom. There is not much humus layer on this slope. There is also a large patch of Black Locust to the east of this stand, which is not significant, and the rest of the stand to the west is Poplar that has reached its peak and is dying out. There is also a number of dead or dying elm. This is not the most ideal stand to leave but due to location in the west part of the base this is the best option.

**Grouping K– Intersection of Burma Road and Cottage Row**

Tree species	% Composition	Ave. Size (cm)	Condition
Silver Maple	60 (16 trees)	42	Good condition
White Ash	20 (4 trees)	42	Fair to Good condition
Sugar Maple	10 (2 trees)	29 & 66	Good condition- this tree requires cabling
Basswood	10(2trees)	34 & 34	Good condition

**Comments:** This grouping is mostly Silver Maple with White Ash, Sugar Maple and Basswood being less dominant. The ground cover is grass with natural regeneration of Sugar Maple, Basswood and White Ash. This is one of five woodlots at this intersection recommended for retention.

**Priority #3: Streetscape Trees of High Value**

There are a number of trees on the Base that were planted as part of the streetscape development or landscaping for new buildings when the Base was developed. While many of them are in good condition and of desirable species some trees are too close to existing housing so that roots and branches will be damaged when those homes are removed. Some trees have poor balance or appear under stress and are not worth keeping. The selection of the following desirable trees was based on species, health, and the proximity to the existing building footprint

The following list of *Streetscape Trees of High Value* in Table 2 should be given strong consideration for retention when development occurs.

*These trees must be adequately protected during construction. Other measures may be necessary to ensure their long term health and survival.*

**Table 2 – Streetscape Trees of High Value**

Species	Diam.(cm)	Location	Comments
22 White Ash	54	61 Mynarski Cr.	A large tree in good condition
23 White Ash	43	59 Mynarski Cr.	A large tree in good condition . May be too close to footprint of the house.
24 White Ash	66	40 Mynarski Cr.	A large tree in good condition . Well back from the footprint.
25 Sugar Maple	60	5 Mynarski Cr.	A large tree in good condition . Well back from the footprint.

26 Sugar Maple	45	5 Mynarski Cr.	A large tree in good condition . Well back from the footprint.
27 Sugar Maple	53	5 Mynarski Cr.	A large tree in good condition . Well back from the footprint.
28 White Ash	37	Bishop Way	Tree in good condition if it can be protected.. Needs trimming
29 White Ash	38	Bishop Way	Tree in good condition if it can be protected.. Needs trimming
30 White Ash	47	Bishop Way	Tree in good condition. .Needs trimming.
31 White Ash	65	Corner Bishop Way	Tree in good condition .Needs trimming.
32 White Ash	59	77 Bishop Way	Tree in good condition Needs trimming.
33 White Ash	50	98 Bishop Way	Tree in good condition Needs trimming.
34 White Ash	50	99 Bishop Way	Tree in good condition Needs trim.
35 Silver Maple	85	Corner Burma/Via Venus	In a clump, in good condition.
36 Silver Maple	65	Corner Burma/Via Venus	In a clump, in good condition
37 Silver Maple	53	Corner Burma/Via Venus	In a clump, in good condition
38 Silver Maple	89	Via Venus	Old open tree in good condition with some dead branches Requires a trim
39. Sugar Maple	75	Via Venus	Old open grown tree in good condition. Some dieback. Requires a trim.
40. Sugar Maple	62	Barker Blvd.	In good condition. Would be an asset to the community. Requires a trim.
41. Sugar Maple	45	Barker Blvd.	In good condition. . Requires a trim.
42. Sugar Maple	56	Barker Blvd.	In good condition. . Requires a trim.
43. Sugar Maple	52	Barker Blvd.	In good condition. Would be an asset to the community. Requires a trim.
44 White Ash	56	Via Vega	In good condition.
45 White Ash	51	Via Vega	In good condition.
46 White Ash	59	Via Vega	In good condition. Needs a bit of a trim
47 White Ash	51	Via Vega	In good condition.
48Norway Spruce	55	Off Hemlock Rd.	In good condition. Conifer adds value.
49Norway Spruce	58	Off Hemlock Rd.	In good condition. Conifer adds value.
50Norway Spruce	65	Off Hemlock Rd.	In good condition. Conifer adds value.
51 Sugar Maple	20	62 Via Venus	Excellent young tree would be an asset..
52 Sugar Maple	20	62 Via Venus	Excellent young tree would be an asset..
53 White Pine	30	29 Via Venus	Excellent young tree would be an asset..
54 White Pine	61	2 Dubhe Dr.	Excellent young tree would be an asset..
55 White Pine	65	2 Dubhe Dr.	In good condition. Conifer adds value..
56White Pine	50	7 Dubhe Dr.	In good condition. Conifer adds value.
57 White Pine	30	7 Dubhe Dr.	Excellent young tree would be an asset..
58 White Pine	33	6 Dubhe Dr.	In good condition. Conifer adds value.
59 White Pine	60	6 Dubhe Dr.	In good condition. Conifer adds value.
60 White Pine	52	6 Dubhe Dr.	In good condition. Conifer adds value.
61 White Pine	57	11 Dubhe Dr.	In good condition. Conifer adds value.
62 White Pine	47	33 Dubhe Dr.	In good condition. Conifer adds value.
63 White Ash	48	38 Dubhe Dr.	In good condition. Conifer adds value.
64 Bur Oak	74	30 Gwatkin at Via Venus	Large older tree in good condition . Keep.

#### **Priority #4: Streetscape Trees of Medium Value**

Trees that would be worth keeping to enhance lots and homes. Most of these trees are in areas where these are not the most ideal trees to keep due to species or age or they are located where priority has been given to other trees in the area.

The following list of *Medium Value Trees* in Table 3 could be considered for retention when development occurs but are not of the highest priority.

*If designated for preservation, these trees will need some protection during construction. Other measures may be necessary to ensure their long term health and survival.*

**Table 3 – Streetscape Trees of Medium Value**

<b>Species</b>	<b>Diameter (cm)</b>	<b>Location</b>	<b>Comments</b>
65 Silver Maple	83	15 Mynarski Cr.	A clump of 3 large Silver Maple in rearyard. Not desirable close to homes
66 Silver Maple	86	15 Mynarski Cr.	“ same as above”
67 Silver Maple	60	15 Mynarski Cr.	“ same as above”
68 White Spruce	34	12 Dubhe Dr.	Good condition
69 White Spruce	34	12 Dubhe Dr.	Good condition
70 White Spruce	30 average	15 Dubhe Dr.	A clump of White and Blue Spruce which would be ideal for a new lot if they can be properly protected.
71 White Spruce	34	16 Dubhe Dr.	Good condition
72 White Spruce	44	27 Dubhe Dr.	Good condition
73 White Spruce	44	27 Dubhe Dr.	Good condition
74 White Spruce	42	27 Dubhe Dr.	Good condition
75 White Pine	37(est)	10 Hornell Dr.	Good condition
76 White Elm	46	28 Hornell Dr.	Good Condition. Dutch elm disease may be a problem if the tree becomes stressed.

**Priority # 5: Tree Groups of Low Value**

There a number of woodlots or grouping of trees that are lower in value due species composition or the health of the existing trees. Listed below are those groups with a brief explanation of the rational for having a lower priority.

**Grouping L : Located on Cottage Row.**

This woodlot is located on a slope with very little humus layer and a lot of brush. Much rubble is present on site. This woodlot was predominantly a Basswood, Sugar Maple stand in the passed. The Basswood is only in fair condition with a lot of dieback. The Basswood average size is 48 cm. The larger Sugar Maple are in fair condition and the younger trees (approx 7) at about 30 cm in diameter being in good condition. There is a patch of Black Locust that is invasive and not ideal for a new development. There is very little wildlife value noticed in this woodlot.

**Grouping M: Located near the Driving Range**

Most of this small woodlot is Manitoba Maple that is invasive and not an ideal species to be considered for a community.

**Grouping N: Located near the Driving Range**

Most of this small stand is Norway Maple that is exotic and invasive and not an ideal species to have near natural sensitive areas. However the location of this stand may make it aesthetically pleasing .

**Grouping O: Located off Hemlock Rd.**

The portion of this stand, which is located at the bottom of the hill or to the west of the maple stand, is of lower priority to maintain for a new community. This stand has poplar that has reached maturity and are starting to decline, elm which is dead, allot of common buckthorn and no trails present so it is not being used by the community.

**Grouping P: Located Between Hemlock Rd and Dubhe Dr.**

This small woodlot is composed of the following species:

Rock Elm	60%	average size 20cm
Poplar	10%	average size 37cm
Siberian Elm	10%	
Black Ash	10%	
Black Locust	10%	

This is a moist site with grass and some bulrushes. The trees are in fair to poor condition with ice storm damage still noticeable. Very few signs of wildlife. Asphalt has been dumped in spots.

This woodlot has a lower value but due to its location may have aesthetic benefits for a community.

**Grouping Q: Located in Yards on Arcturus Ave. Behind the Storage Sheds on Via Venus.**

This area is comprised mostly of White Ash averaging 50 cm in diameter. These trees have matured and are showing signs of decline. Very little undergrowth is present. This grouping of trees has a lower value.

**Overview of Vegetation Cover Street by Street:**

**Arcturus Ave.**

- Trees in the front yards are close to the building footprints and it may not be realistic to try to retain such trees. Other trees are in such poor condition they are not worthy of keeping.
- Trees in the backyards on the north side of the street are worth trying to retain as they are large healthy Sugar Maple mixed with other species such as Bitternut Hickory. This area is identified as Grouping B
- Some of the trees that have been planted are Norway Maple that is exotic and invasive and are lower in value, especially because of the proximity to the NRC Woods North.

**Mynarski Cr.**

- Trees in the front yards are mostly White Ash in fair condition or close to the building footprints and it may not be realistic to try and retain these trees.

- Trees in the backyards on the north side either border the NRC Woods North or Grouping A. These are mature trees In good condition dominated by large Sugar Maple and are a high value.

### **Rigel Rd.**

- Trees on this street are high value.
- Trees on the front yards are older Sugar Maple in good condition far enough from the building footprints to retain during development.
- The backyards on the north side are adjacent to the NRC Woods North and are very high value.
- If the NRC Woods North is identified as an Environmentally Sensitive Area any development on adjacent lands will require an Environmental Impact Statement.
- Trees in the backyards on the south side border Grouping A. These are mature trees In good condition dominated by Sugar Maple and are high value.

### **Bishop Way**

- A combination of White Ash and Little Leaf Linden was planted near the homes which once stood here.
- The Little Leaf Lindens have reached maturity and can only be considered in fair condition as the growth has slowed down and the leaves appear small. These trees are low in value.
- The White Ash is generally in good condition and those that have a high value have been identified.

### **Via Vega**

- A combination of White Ash and Little Leaf Linden was planted near the homes which once stood here.
- The Little Leaf Lindens have reached maturity and can only be considered in fair condition as the growth has slowed down and the leaves appear small. . These trees are low in value.
- The White Ash is generally in good condition and those that have a high value have been identified.

### **Barker Blvd.**

- A combination of White Ash and Little Leaf Linden was planted near the homes which once stood here.
- The Little Leaf Lindens have reached maturity and can only be considered in fair condition as the growth has slowed down and the leaves appear small. . These trees are low in value.
- The White Ash on this street are showing signs of decline and have not been identified to retain
- Norway Maple was planted on this street and these are considered exotic and invasive and are low in value.
- Sugar Maple that has been planted has been identified as a higher value.

### **Burma Rd.**

- No trees have been identified to be retained.

### **Via Venus**

- The old 150-year-old Bur Oak has been identified as a very high value.
- Is lined with Eastern Ontario Cedar 30 cm in diameter and many are forked. These are not the most ideal trees to have in a subdivision and therefore have not been given the priority other species have. These trees have not been identified to retain and as such have been given a low priority
- The west end of the street that is adjacent to the Montfort Hospital Woods will require an Environmental Impact Statement before development can occur.
- Two young Sugar Maples and a young White Pine have been identified for retention, as they would be a benefit to a new community.
- The White Ash has not been identified to retain as they are only considered to be in fair condition.

### **Dubhe Dr.**

- A number of White Pine have been identified as ideal candidates to retain .
- A few White Spruce have been identified as nice trees to leave .
- The remainder of the trees were given a lower value due to species or condition.

### **Altair Ave.**

- Basswood on this street is only in fair condition with some defects. These trees would not be able to withstand the stress of development.
- Norway Maple has been planted in the past and is considered exotic and invasive.
- Poplar and Willow are moisture-seeking trees with aggressive root systems and are not ideal trees to have in a subdivision.
- Therefore no trees have been identified with high priority for retention on this street.

### **Hornell Dr.**

- Many of the trees are near the building footprints and would be difficult to protect when the existing homes are removed.
- Other trees are in poor condition or are exotic and have been given a low priority for retention.
- One large Bitternut hickory in an open space has been identified as very high value.
- A young White Pine and a White Elm have been identified as a nice to retain.

### **Castor Ave.**

- The street has a large number of Basswood that range from good to fair condition. There appears to be a lot of trunk rot in these trees. These trees have been given a low priority for retention, as the stress during development would cause further decline.
- Little Leaf Linden has also been planted on this street. These trees have reached maturity and are beginning to decline. These trees have been given a low priority for retention.

**Gwatkin Rd.**

- Trees on the front yard are mostly Norway Maple that has been trimmed for hydro. These trees are exotic and invasive and should not be retained being this close to the Montfort Woods.
- There is a number of Basswood, which is declining and is given a low priority for retention.
- An Environmental Impact Statement is required for all new development, including new lot creation within 30 metres of the boundary of the Montfort Woods.
- One large Bur Oak was identified as an ideal candidate to retain .

**Hemlock Road**

- No individual trees were identified on this street to retain.

**Codd's Road**

- No individual trees were identified on this street to retain.

## **TREE PROTECTION GUIDELINES**

Preserving vegetation on sites subject to development not only contributes to the urban and the over all environmental health of an area, but also helps improve visual appeal of newly developed areas. In the City of Ottawa development proposal will be required to preserve vegetation cover or replace vegetation when removal cannot be avoided.

### **Planning Guidelines:**

It is a policy in the City of Ottawa that applications for subdivision or site plan approval will be supported by a tree preservation and protection plan and a landscape planting plan. The plans will:

- Retain as much natural vegetation as possible especially along watercourses, on steep slopes, in valued woodlots and in areas linking green spaces with an emphasis on rare vegetative communities;
- Determine which stands of trees or individual trees warrant retention based on a preliminary assessment;
- For those trees or stands of trees being retained, outline measures for their protection during construction and over the long term;
- Describe the area and nature of tree loss and compensation measures proposed;
- Indicate tree planting or vegetative cover to protect steep slopes;
- Use native species in tree planting plans
- Where there is substantial alteration of natural vegetation cover on a site, the impact on wildlife during and after construction will be considered and mitigation measures proposed.

### **Guidelines for the Protection of Trees During Construction:**

Development can have a negative impact on pre-existing trees if proper measures are not taken to protect these trees. Changes made to grade, water table level, compaction, and drainage will impact the health and longevity of such trees. The following measures must be implemented to ensure tree survival during construction:

- Before construction begins mark individual trees or stands with tree marking paint and flagging tape so all involved know what trees are to be protected;
- Around each individual tree or stand of trees erect a snow fence or other barrier 1 metres high and supported vertically by t-bars at regular intervals. This fencing must be placed, if possible, at the drip line (furthest spread of outside branches). The purpose is to stop vehicle traffic from entering the root zone and causing compaction;
- Maintain this fencing during construction and check at regular intervals to make sure it is still standing;
- Place gravel, sand or preferably woodchips for a distance 2 metres outside of the dripline to a thickness of at least 7 centimetres. This will further help elevate the compaction of soil surrounding the fine feeding roots.

- No stockpiling of material, refueling, parking of vehicles or repairing of vehicles is to take place within the 2 metres outside of the drip line.
- When excavation must take place within the dripline care of the root system is essential. A trench should be dug by hand or with a root-cutting (stump-grinder) or a stone cutting (cut-off) machine along the furthest reach of the cut. This is to ensure the roots are cut cleanly with no ragged ends so the roots have a chance to heal. When the trench is established, other equipment may be used to complete the work.
- It is better to tunnel under a root system than to cut through it.
- When heavy equipment is used during excavations, care must be used so not to compact the soil within the barricaded root zone.
- When tree roots are cut and do become exposed during construction, water them immediately and backfill or cover with filter cloth or woodchips so the fine root hairs do not dry out. Ensure the chips or filter cloth is kept moist with a fine spray a number of times during the week and daily if hot dry weather is encountered.
- Avoiding changes in grade will assist with the overall health of the tree during construction. Where grade changes cannot be avoided, the installation of retaining walls or tree wells must be considered for those trees worth protecting. An arborist should be consulted on the design of both.

**Table 4**  
**MAIN TREE SPECIES OBSERVED ON THE ROCKCLIFFE BASE**

<b>Common Name</b>	<b>Latin Name</b>	<b>Comments</b>
White Ash	<i>Fraxinus americana</i>	Higher value
Basswood	<i>Tilia americana</i>	Most only in fair condition
American Beech	<i>Fagus grandifolia</i>	NRC Woods, good for wildlife
White Birch	<i>Betula papyrifera</i>	Low value
White Cedar	<i>Thuja occidentalis</i>	Low value
American Elm	<i>Ulmus americana</i>	Very few identified to retain
Rock Elm	<i>Ulmus, thomasii</i>	Low value
Bitternut Hickory	<i>Carya cordiformis</i>	A number of these trees on the base-good condition, high value
Ironwood	<i>Ostrya virginiana</i>	Located in woodlots, good for wildlife
Littleleaf Linden	<i>Tilia cordata</i>	Were planted 50 years ago-showing signs of decline-low value.
Black Locust	<i>Robinia psuedoacacia</i>	Invasive species-low value.
Manitoba Maple	<i>Acer negundo</i>	Invasive species, poor form & structure- low priority to retain
Norway Maple	<i>Acer platanoides</i>	Exotic and very invasive- City of Ottawa no longer plants this species-low value especially near sensitive areas
Red Maple	<i>Acer rubrum</i>	Observed in the NRC Woods
Silver Maple	<i>Ace saccharinum</i>	Large majestic trees- water seeking species- high value in some locations.
Sugar Maple	<i>Acer saccharum</i>	Well represented on the base- in the Urban Natural Features areas and on adjacent lands- high priority to retain.
Bur Oak	<i>Quercus macrocarpa</i>	Large tree on the base a must to retain- if healthy a high value.
Eastern White Pine development.	<i>Pinus strobus</i>	High value- needs good protection during
Poplar	<i>Populus</i>	Poor species to have in a developed area- low priority to retain.
Norway Spruce	<i>Picea abies</i>	Good conifer species to have in the community – medium value.
White Spruce	<i>Picea glauca</i>	Mostly planted on lawns- good conifer species to have in the community -medium value..

