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**Property is** 845 Dundee Avenue  
Ottawa, ON  
K2B 5S8

**Committee of Adjustment**  
Received | Reçu le

**2023-12-27**

City of Ottawa | Ville d'Ottawa  
**Comité de dérogation**

The owner is applying for a permit to demolish the existing structure and build a semi-detached (R2G) residential building.

**Inspection dates:** 2023-02-27 and 2023-06-30

The objective of this report is to identify all protected trees on this and adjacent properties whose Critical Root Zones (CRZ's) fall within the area of construction and to provide strategies for tree preservation during development and construction.

No trees are to be removed. The report identifies the trees that will be protected and details of their condition.

It should be noted that this report has been modified to show changes in the proposed building plans to meet requirements sought by the City of Ottawa Forestry and Planning Sections

## Definitions

### Tree Condition Ratings

- **Very good condition;** exhibiting normal, vigorous growth with minimal amounts of fine deadwood, no structural defects or visible signs of disease.
- **Good condition;** 60 to 90% normal canopy density, little or no dieback, some deadwood but no major dead stems or limbs, possible infestation causing minor damage and minor cavities at wound sites and only minor structural defects.
- **Fair condition;** declining with 30 to 60% of normal canopy density, twig and branch dieback, failure of one scaffold branch, infestation causing significant damage, mix of small, medium, and large deadwood, or presence of disease and decay causing structural instability. Treatment recommended by an arborist would be essential but would not guarantee survivability especially if subjected to root loss caused by construction activity.

## Tree Information Report for 845 Dundee Avenue, Ottawa

• **Poor condition;** less than 30% canopy, or dieback of large major scaffold branches, or failure of more than one scaffold branch, loose bark, severe infestation and irreparable damage, or extensive decay causing structural stability. A tree described as “poor” is in severe decline and is unlikely to tolerate any root damage or fill soil typical of development and construction.

**DBH** or diameter (D) at breast height means the measurement of the diameter of the trunk at 130cm. above grade unless it has multiple trunks, in which case the diameter of the largest stem measured at 130 cm is used as the DBH.

For the cedars in the hedgerow, originally, I measured most just below the forks. I have since found in the City of Ottawa “Planning around trees” that: “A forked tree should be measured at the narrowest part of the main stem below the fork.” The revised dbh values are shown in Table 1.

**Critical Root Zone (CRZ);** is the area around the tree or groups of trees in which no grading or construction activity may occur. In keeping with the City of Ottawa requirement the Critical Root Zone extends 10 centimeters from the trunk of a tree for every centimeter of trunk diameter. Therefore, typically  $D \times 10\text{cm} = \text{radius of Critical Root Zone}$ .

### Site Specifics

The site is a typical residential lot with a two-story house and shed on it.

There is a mature cedar hedgerow along the property line in the neighbour’s yard at 851 Dundee.

A few of these mature cedars are in the ROW but are well away from the limit of excavation.

Also among the hedgerow are two cedars that are protected but their CRZ’s do not fall within the limit of excavation and are not identified in this report.

There are 5 trees to be protected. See the list below.

**Table 1 List of Protected Trees**

| <b>Tree #</b> | <b>Species</b>                                       | <b>Dbh cm</b> | <b>Owner</b> | <b>Condition</b> | <b>Arborist’s recommendation</b> |
|---------------|--|---------------|--------------|------------------|----------------------------------|
| 1             | Colorado Spruce<br>( <i>Picea gungens</i> )          | 56            | 841 Dundee   | Good             | To be retained and protected     |
| 2             | Hedgerow<br>White Cedar<br><i>Thuja occidentalis</i> | 30            | 851 Dundee   | Fair             | To be retained and protected     |
| 3             | Hedgerow<br>White Cedar<br><i>Thuja occidentalis</i> | 34            | 851 Dundee   | Fair             | To be retained and protected     |
| 4             | Hedgerow<br>White Cedar<br><i>Thuja occidentalis</i> | 45            | 851 Dundee   | Fair             | To be retained and protected     |
| 5             | Hedgerow<br>White Cedar<br><i>Thuja occidentalis</i> | 40            | 851 Dundee   | Fair             | To be retained and protected     |

**Tree #1 Colorado Spruce (*Picea pungens*)**



Photo 1 Tree #1 Colorado Spruce



Photo 2 Tree #1 Healthy Trunk

Dbh 56 cm

This is a mature Colorado spruce. See photos 1 and 2, p. 3

It has a single trunk.

Stem has no lean and tapers gradually.

Foliage density, size and colour are all good.

There is some die-back of smaller branches.

There are no co-dominant stems or included bark.

Crown has been raised to 3 M.

Roots may be restricted by existing paved driveway at 845 Dundee Ave.

**Recommendation**

There is currently encroachment into the CRZ from existing driveway at 845 Dundee. Excavation for the new driveway is outside the CRZ. A very small percentage (~5%) of the limit of excavation will disturb the CRZ. The tree will be able to tolerate this small amount of root loss.<sup>1</sup>

Provide protective fencing around the CRZ as indicated in Drawing #1 p 8 and the pink dotted line in Drawing #2 p 9. Follow all the Steps to Conserve Trees p 6.



**Eastern White Cedar Hedgerow**

There is a row of cedars at 851 Dundee close to the boundary with 845. A few are growing in the ROW. See Photos 3 to 5 below.

The hedgerow is mature with the cedars varying in diameter from 10 cm to 46.5 cm. The hedge has already been raised about 3 M along the south side and 3 M along a section on the north side next to the house at 845 Dundee. More cedars would have to be raised the same amount on the north side to allow access to any proposed entrances.



Photo 3: South facing side (851 Dundee) of Cedars    Photo 4: Cedars (845 Dundee) North facing side



Photo 5 (left)  
Some cedars in the ROW



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Photo 6 Tree #2



Photo 7 Tree #3 on the right side of photo



Photo 8 Tree #4 in the center



Photo 9 Tree #5

## Recommendations

The existing foundation is 2.80 M from the boundary line between 845 and 851 Dundee. This has limited the space for the existing cedar roots to less than standard dimension for CRZ's. Note that the limit of excavation for the new dwelling was changed along with the footprint of the foundation on July 8, 2023, leaving a width of between 1.45 M and 1.68 M of soil undisturbed up to the point of the protected trees as represented on the drawing showing the surveyed locations of all the trees in the hedge. The diameter of the largest of these trees is 45 cm dbh.

### **Cedars #2 and #3** (See attached Diagram No.2.)

The CRZ's for these cedars extends up to the existing foundation on the side of 845 Dundee. Excavation will remove less than 20 % of the actual area of the existing roots for these two trees. As cedars show very good tolerance of root loss and infill soils, these two trees should not be adversely affected by the construction as long as all Steps to Conserve trees are followed.

### **Cedar #4** (See attached Diagram No.2.)

This cedar has a CRZ that has been restricted by the foundation at 845 Dundee. The limit of excavation will be narrowed along the section within their illustrated CRZ's to preserve the amount of undisturbed soil extending from the base of this tree. This will leave a distance of approximately 1.68 cm which is more than the necessary considering that the closest a safe cut line can be is 1.5 M away from the trunk.

This tree could lose approximately 35% of the root zone as defined by the term CRZ in the definitions. But at least 15% of this area is limited by the presence of the existing foundation meaning that the tree will only lose about 20% of the actual root mass.

### **Cedar #5**

This cedar also has a CRZ that has been restricted by the house foundation. The limit of excavation is narrowed near the trunk of this tree. The narrowed cut line has been extended a further distance of 2 M easterly to accommodate the CRZ radius of 4 M from the tree trunk. This will ensure that the tree will lose only about 35% of the standard CRZ and considering part of this is restricted by the foundation it should actually amount to less than 30%. The cut line will leave a distance of approximately 1.68 M undisturbed soil from the tree trunk which will be more than necessary considering that the closest a safe line can be is 1.3 M away from the trunk.

## Steps to Conserve Trees

The following measures as well as those listed in Diagram #1 p. 8 are to be taken to ensure the best chances of survival of any of the trees being retained.

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### Note:

In order to mitigate damage to their roots in the area of the zone between the limit of excavation and the cedar trees, a mechanical shovel is not to be used along the cut line. Excavation will be carried out by hand with a sharp spade or by using hydro pressure with special attention to Steps No. 6 and no. 7 below of **Steps to Conserve Trees**. The orange dotted line in Diagram #2 shows the distance that is to be hand excavated. It is anticipated that by following these steps Cedars #4 and #5 will be able to tolerate the work.

1. Do not remove any surface soil in the area of the CRZ except within the limit of excavation as indicated on the attached plan.
2. Do not raise the grade in the area of the CRZ.
3. Erect a fence with a sign identifying the trees to be protected under the by-laws, around the area of the CRZ as illustrated in the Diagram #1 p. 8, within the property lines unless otherwise indicated in this report. (See pink dotted line in Diagram #2 of Site Plan p. 9.
4. Do not place any construction material or equipment within the area of the illustrated CRZ's.
5. Do not attach any signs or notices to the trees being retained.
6. Do not damage the root systems beyond the excavation limit.
7. All severed roots over 2.5 cm in diameter are to be cleanly cut with sharp tools not left torn by mechanical shovel.
8. Do not damage the trunk or branches.
9. Ensure that exhaust fumes from all equipment are not directed at any of the canopy.
10. Any pruning of the tree should only be done under the guidance of a qualified arborist.
11. Avoid soil compaction in the area of the CRZ's. If root zones are unavoidable in the equipment access area, mitigate compaction during construction by covering the area with a layer of crushed stone and cover with plywood. Remove after construction is completed.
12. All mixing gas, cleaning tools and brushes and repairing of equipment will take place outside the CRZ's to reduce spillage risk.
13. All debris from existing structures, new construction, and chemical wastes are to be hauled away and not buried on site.
14. Water undisturbed areas of CRZ during construction. Soak to a depth of 18 cm. ("12") once a week in periods of 1 week without sufficient rain to maintain this amount of moisture.

See Diagram #1 p. 8.

### Reference

<sup>1</sup>Matheny and Clark, 1998. Trees and Development, A Technical Guide to Preservation of Trees During Land Development. International Society of Arboriculture



**TREE PROTECTION REQUIREMENTS:**

- PRIOR TO ANY ACTIVITY IN PROXIMITY TO A PROTECTED TREE THAT COULD RESULT IN DIRECT OR INDIRECT INJURY TO THAT TREE OR ITS ROOTING AREA, TREE PROTECTION FENCING MUST BE INSTALLED AROUND THE CRITICAL ROOT ZONE (CRZ), AND REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.
  - WITHIN THE CRZ THERE MUST BE:
    - NO GRADING CHANGES
    - NO PLACEMENT OR STORAGE OF CONSTRUCTION MATERIALS OR SITE FURNITURE SUCH AS OUTHOUSES
    - NO OPERATION OR STORAGE OF EQUIPMENT
    - NO EXTENSION OF HARD SURFACE OR CHANGE OF LANDSCAPING
    - NO EXCAVATION OTHER THAN APPROVED METHODS UNLESS OTHERWISE APPROVED BY THE CITY
- THE LOCATION OF THE TREE PROTECTION FENCING MUST BE DETERMINED BY A TREE CARE PROFESSIONAL AND DETAILED ON ANY ASSOCIATED PLANS FOR THE SITE, IF PART OF A BUILDING PERMIT APPLICATION. THE PLAN AND CONSTRUCTED FENCING MUST BE APPROVED BY THE CITY PRIOR TO THE COMMENCEMENT OF WORK.
- PLANS FOR MOVEMENT AND STORAGE OF EQUIPMENT AND MATERIALS ON SITE MUST BE DETERMINED AND DISCUSSED WITH ALL CONTRACTORS TO ACCOUNT FOR THE EXCLUSION OF THE TREE PROTECTION AREAS
- TREE PROTECTION FENCING MUST BE AT LEAST 1.2M IN HEIGHT, AND CONSTRUCTED OF RIGID OR FRAMED MATERIALS (E.G. MODULOC - STEEL, PLYWOOD HOARDING, OR SNOW FENCE ON A 2"x4" WOOD FRAME WITH POSTS TO BE SPACED AT A MAXIMUM OF 2.4 M(APART), SUCH THAT THE FENCE LOCATION CANNOT BE ALTERED. ALL SUPPORTS AND BRACING MUST BE PLACED OUTSIDE OF THE CRZ, AND INSTALLATION MUST MINIMISE DAMAGE TO EXISTING ROOTS. (SEE DETAIL)
- IF THE TREE PROTECTION FENCING AREA MUST BE REDUCED TO FACILITATE CONSTRUCTION ACCESS, THE CRITICAL ROOT ZONE MUST BE PROTECTED WITH PLYWOOD, WOOD CHIPS, OR STEEL PLATING OR OTHER MITIGATION TECHNIQUES PRESCRIBED BY THE TREE CARE PROFESSIONAL AND APPROVED BY THE CITY.

**BY-LAWS**  
 ALL CITY-OWNED TREES ARE PROTECTED UNDER THE MUNICIPAL TREES AND NATURAL AREAS PROTECTION BY-LAW (2006-279). PRIVATELY-OWNED TREES GREATER THAN 50CM DIAMETER ARE PROTECTED UNDER THE URBAN TREE CONSERVATION BY-LAW (2009-200).

TREE PROTECTION BARRIER SPEC.

SCALE: NTS

DATE: MARCH 2019

DRAWING NO.: 1 of 1

Diagram #1



# Tree Information Report for 845 Dundee Avenue, Ottawa

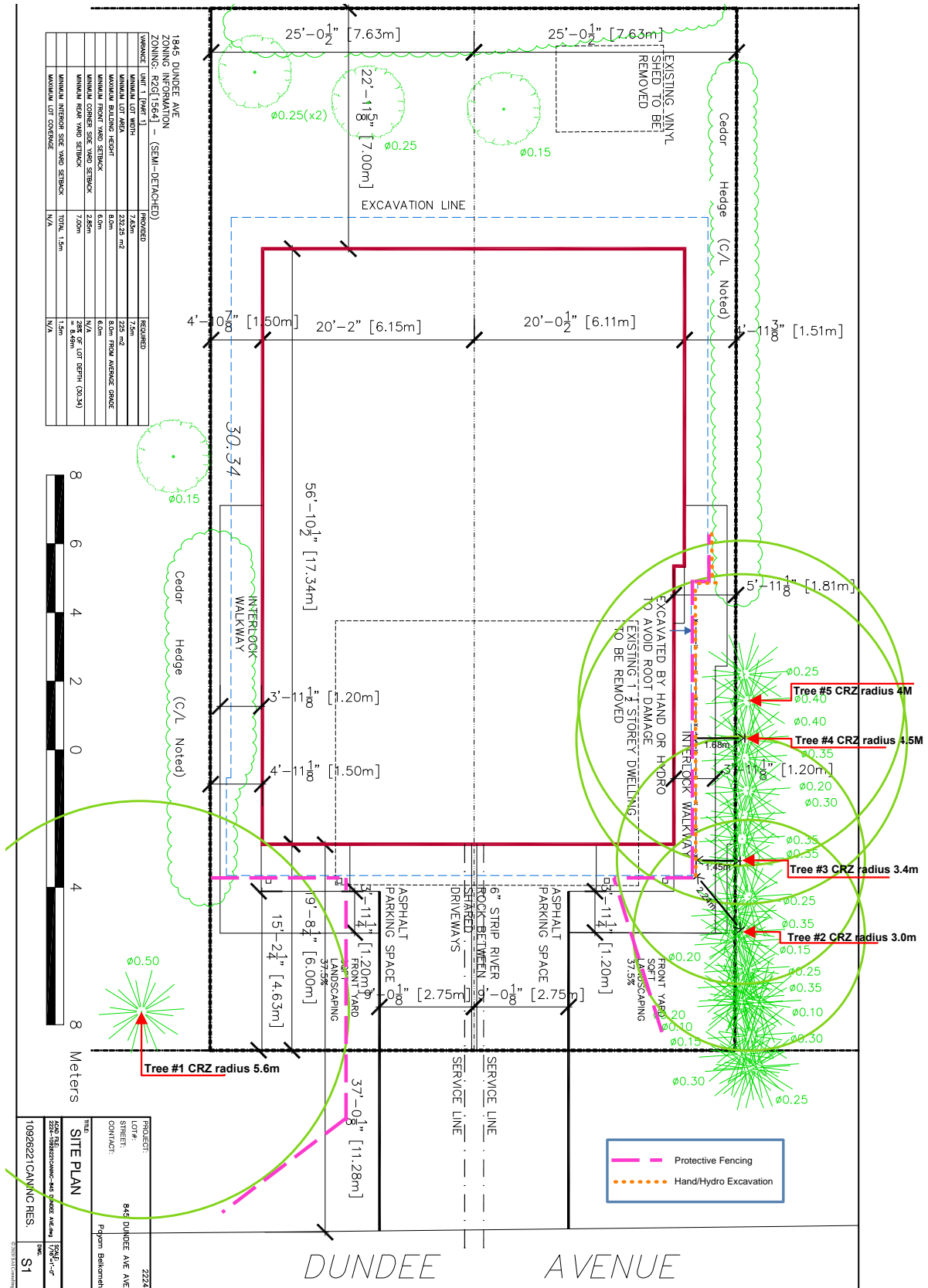


Diagram #2