

# City of Cambridge Department of Public Works

## Tree Protection Ordinance Regulations

The City of Cambridge Commissioner for Public Works ("The Commissioner") hereby adopts the following Tree Ordinance Regulations pursuant to the Tree Protection Ordinance, Title 8, Chapter 8.66 of the Cambridge Municipal Code, (the "Ordinance").

### 1. Identifying a Significant Tree.

If the diameter at breast height (DBH) of the stem of a tree at four point five (4.5') feet above the ground is equal to or greater than six (6") inches, then the tree is a Significant Tree.

### 2. Measuring DBH (Diameter at Breast Height).

At a distance four point five (4.5') feet above the ground, DBH can be measured with a specially calibrated diameter tape, often referred to as a d-tape, that displays the diameter measurement when wrapped around the circumference of a tree.

Alternatively, the following process can be used:

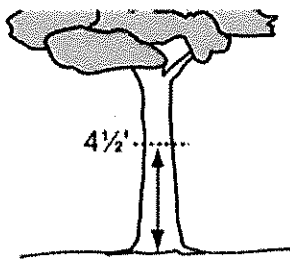
#### DBH for a Single Stem Tree:

At a distance four point five (4.5') feet along the trunk.

Wrap a string around the tree trunk making sure that the string is perpendicular to the trunk and tight around the trunk and mark the circumference on the string.

Measure the length of string to get the circumference of the tree.

Convert the circumference measurement to diameter by dividing the circumference by pi (3.14).



*Figure 1 Measuring DBH for a single stem tree on flat ground.*

---

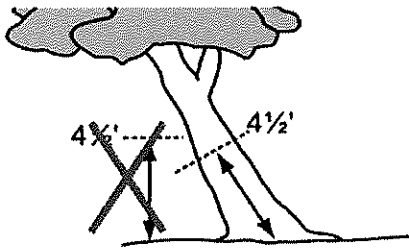


Figure 2: Measuring DBH for a tree growing at an angle.

---

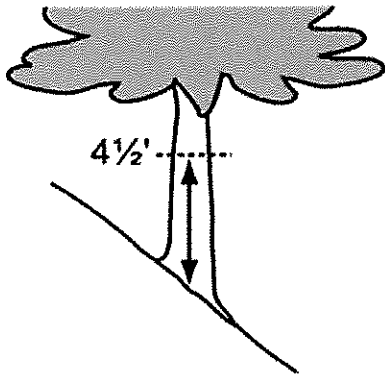


Figure 3: Measuring DBH for a tree growing on sloped ground.

---

DBH for a Multi-Stemmed Tree:

For multi-stemmed trees, DBH is determined by measuring the DBH of the largest stem at a distance four point five (4.5') feet above the ground

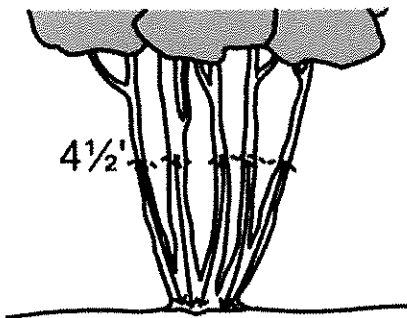


Figure 4: Measuring DBH for a Multi-Stemmed Tree.

**3. Replacement Tree Requirements.**

- a. Replacement Tree specifications must be approved by the City Arborist prior to Tree Removal Permits being issued.
- b. Replacement Tree specifications shall include:
  - i. Species and size of the Replacement Tree(s).
  - ii. Location proposed for the Replacement Tree(s). (plan or photographs)
  - iii. Schedule associated with the Replacement Tree planting.

The Replacement Tree must be planted during the next planting season, unless otherwise approved by the City Arborist. Photographs of the planted Replacement Trees must be submitted by the end of the identified planting season (July 15<sup>th</sup>, November 15<sup>th</sup>). Failure to plant the Replacement Trees will result in a revised Mitigation Payment requirement and fines in accordance with Section 8.66.090 of the ordinance.

- iv. Five-year care and maintenance plan associated with the Replacement Tree. (DEFAULT CARE AND MAINTENANCE PLAN PROVIDED BY THE CITY).
- v. Other requirements as specified by the City Arborist.

For large projects, as identified in Section 8.66.060, Replacement Trees can be planted on the same lot or any other lot within the same neighborhood or adjoining neighborhood when approved by the City Arborist.

Reference should be made to the City of Cambridge Neighborhood Map together with the City of Cambridge Community Development Department's Cambridge Neighborhood Planning web site; <https://www.cambridgema.gov/CDD/planud/neighplan.aspx> and the City of Cambridge Planning Board Neighborhood Study 1953;

[https://www.cambridgema.gov/-/media/Files/CDD/Planning/Neighborhoods/neigh\\_onecity.pdf](https://www.cambridgema.gov/-/media/Files/CDD/Planning/Neighborhoods/neigh_onecity.pdf).

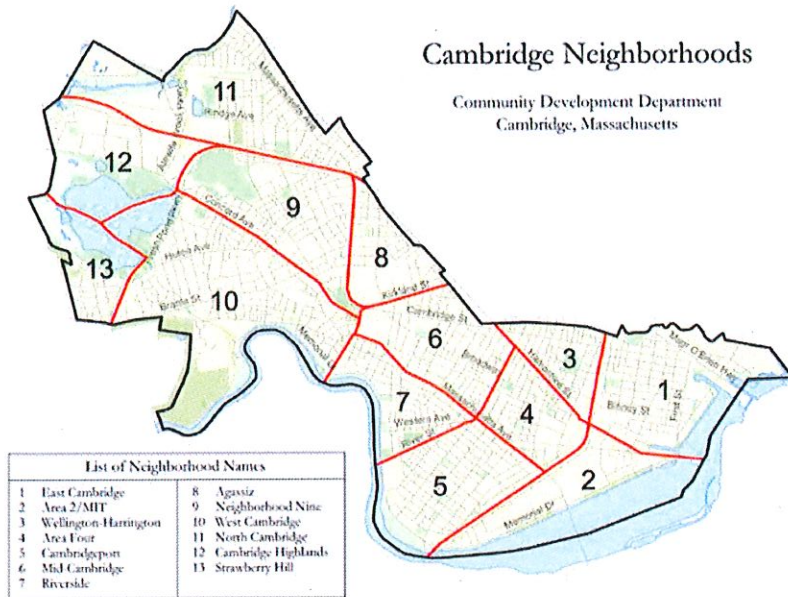


Figure 5: Cambridge Neighborhoods.

#### 4. Mitigation Payments.

##### For Large Projects:

The Mitigation Payment shall be calculated based on the total DBH of removed Significant Trees less the total DBH of Replacement Trees. Exceptional Trees will be assessed at 1.5 times the total measured value of their DBH.

##### For Other Significant Tree Removals.

The Mitigation Payment shall be calculated as follows:

For each Replacement Tree planted to replace a Significant Tree removed the DBH difference between the Significant Tree and the Replacement Tree shall be halved. This calculation shall start with the smallest Significant Tree and then proceed in ascending order based on the sizes of the Significant Trees removed. Exceptional Trees will be assessed at 1.5 times the total measured value of their DBH.

When the number of Replacement Trees exceeds the number of Significant Trees removed, each additional Replacement Tree will be credited based on its DBH.

The following table provides examples of how Mitigation Payments are calculated for a variety of different scenarios.

**Example:**

Scenario 5: 2 Significant Trees are removed: one is 8 inches DBH and one is 16 inches DBH.  
 3 Replacement Trees are to be replanted: each are 2 inches DBH.  
 Cost per DBH inch = \$850 (subject to change based on City planting contract pricing).  
 The following are the Mitigation Payment (MP) calculations:

Large Project:  $MP = (8+16-2-2-2) \times \$850 = \$15,300.$

Other Project, no residential exemption:  $MP = [(8-2)/2 + (16-2)/2 - 2] \times \$850 = \$6,800.$

Other Project, residential exemption:  $MP = [(8-2)/2 + (16-2)/2 - 2] \times \$850 \times 0.1 = \$680.$

Other Project, Federal assistance:  $MP = \$0.$

Scenarios	Significant Trees to be removed. (size in inches)	Replacement Trees (in inches)	Significant Tree Removals on Large Projects: DBH to be mitigated (in inches)	Mitigation Cost per tree. (DBH inch = \$850)	Total Mitigation Cost for Large Projects	For all other Significant Tree Removals: DBH to be mitigated (in inches)	Mitigation Cost Without Residential Exemption (DBH inch = \$850)	Total Mitigation Cost without Residential Exemption for "all others"	Total Mitigation Cost with Residential Exemption for "all others"
Scenario 1	8	2	6	\$5,100	\$5,100	3	\$2,550	\$2,550	\$255
Scenario 2	8 16		8 16	\$6,800 \$13,600	\$20,400	8 16	\$6,800 \$13,600	\$20,400	\$2,040
Scenario 3	8 16	2	6 16	\$5,100 \$13,600	\$18,700	3 16	\$2,550 \$13,600	\$16,150	\$1,615
Scenario 4	8 16	2 2	6 14	\$5,100 \$11,900	\$17,000	3 7	\$2,550 \$5,950	\$8,500	\$850
Scenario 5	8 16	2 2 2	6 14 -2	\$5,100 \$11,900 -\$1,700	\$15,300	3 7 -2	\$2,550 \$5,950 -\$1,700	\$6,800	\$680
Scenario 6	8 16 32	2 2	6 14 48	\$5,100 \$11,900 \$40,800	\$57,800	3 7 48	\$2,550 \$5,950 \$40,800	\$49,300	\$4,930
Scenario 7	8 16 32	2 2 2	6 14 46	\$5,100 \$11,900 \$39,100	\$56,100	3 7 23	\$2,550 \$5,950 \$19,550	\$28,050	\$2,805

Table 1: Mitigation Payments for various tree removal and tree replacement scenarios.

**5. Significant Tree Removal Requirements.**

In accordance with Section 8.66.050, in order to remove a Significant Tree, the following will be required:

- a. A completed Tree Removal Permit Application Form.
- b. Photographs of the Significant Tree, including photographs of its silhouette, its DBH measurement.
- c. Submission of Replacement Tree details as per Section 3 of these regulations.
- d. Mitigation Payment as per Section 4 of these regulations.
- e. Signed permit approval by the City Arborist.

**6. Removal of Dead Trees.**

In accordance with Section 8.66.050.b, in order to procure a permit from the City Arborist to remove a Significant Tree that is dead and avoid Mitigation Payments the following will be required:

- a. A completed Tree Removal Permit Application Form.
- b. A signed Certification from a Certified Arborist using the attached Form A.
- c. Photographs of the Significant Tree, including photographs of its silhouette, its DBH measurement, and the area of the dead tree where the dead area(s) can be observed.
- d. Signed permit approval to remove the dead tree by the City Arborist.

**7. Removal of Dangerous Tree.**

In accordance with Section 8.66.050.b, in order to procure a permit from the City Arborist to remove a Significant Tree that is dangerous and avoid Mitigation Payments the following will be required:

- a. A completed Tree Removal Permit Application Form.
- b. A completed Level 2 International Society of Arboriculture ("ISA") Tree Risk Assessment related to the Tree provided by a Certified Arborist.
- c. A signed Certification from a Certified Arborist using the attached Form A.
- d. Photographs of the Significant Tree, including photographs of its silhouette, its DBH measurement as stipulated in the Ordinance, and the area of the dangerous tree where the dead or dangerous area(s) can be observed.
- e. Signed permit approval to remove the dangerous tree by the City Arborist.

**8. Removal of Significant Tree in Emergency Circumstances.**

In accordance with Section 8.66. 050.b to procure a permit from the City Arborist to remove a Significant Tree in an emergency circumstance and avoid Mitigation Payments the following will be required:

a. Type 1 Emergency Circumstance.

- i. A completed Tree Removal Permit Application Form.
- ii. A detailed narrative of the emergency circumstance requiring the removal of the Significant Tree as it relates to public health, safety or welfare, signed by the owner of the property.
- iii. If required by the City Arborist, a completed Level 2 ISA Tree Risk Assessment provided by a Certified Arborist.
- iv. If required by the City Arborist a signed Certification from a Certified Arborist using the attached Form A.
- v. Photographs of the Significant Tree including photographs of the Tree's silhouette and the Tree's DBH measurement as stipulated in the Ordinance.
- vi. Signed permit approval to remove the tree due to the emergency circumstance, by the City Arborist.

b. Type 2 Emergency Circumstance Where Permit Not Obtained Prior to Removal.

- i. A completed Tree Removal Permit Application form submitted within 24 hours or on the next business day after the Significant Tree is removed.
- ii. A detailed narrative of the emergency circumstance demonstrating why an imminent threat to safety existed required the Significant Tree to be removed immediately. (Example: a large branch from a Significant Tree falls on or adjacent to a building or vehicle or other hazardous location and it is discovered that the Significant Tree is dangerous and poses an imminent threat to public health, safety or welfare), and why the City Arborist was not available (Example: non-working hours).
- iii. A completed Level 2 ISA Tree Risk Assessment provided by a Certified Arborist.
- iv. A signed letter from a Certified Arborist using the attached Form A.
- v. Photographs of the Significant Tree that has been removed, including if possible, its silhouette and its DBH measurement as stipulated in the Ordinance.
- vi. Signed permit approval to remove the tree due to the emergency circumstance, by the City Arborist.

**9. Significant Utility Infrastructure projects.**

- a. A completed Tree Removal Permit Application Form.
- b. A detailed report indicating the nature of the utility infrastructure project and the State or Federal regulation(s) or program(s) pursuant to which the project is being undertaken provided by the City Engineer.
- c. A completed Level 2 ISA Tree Risk Assessment provided by a Certified Arborist.
- d. A signed Certification from a Certified Arborist using the attached Form A.
- e. Photographs of the Significant Tree including photographs of its silhouette and its DBH measurement as stipulated in the Ordinance.
- f. Signed permit approval from the City Engineer and the City Arborist to remove the Significant Tree.

**10. City Park Projects where it is proposed to remove Significant Trees.**

- a. A completed Tree Removal Permit Application Form.
- b. A detailed narrative indicating the nature of the Park Project and the community engagement that has been held or is proposed to be held.
- c. Tree Mitigation Plan identifying number of Replacement Trees to be planted to replace Significant Trees being removed.
- d. A completed Level 2 ISA Tree Risk Assessment provided by a Certified Arborist.
- e. If required by the Commissioner for Public Works a signed Certification from a Certified Arborist using the attached Form A.
- f. Photographs of the Significant Tree including photographs of its silhouette and its DBH measurement as stipulated in the Ordinance.
- g. Signed permit approval from the Commissioner of Public Works and the City Arborist to remove the Significant Tree.



**11. The removal of certain Significant Trees when considered beneficial to the health of the tree canopy.**

In accordance with Section 8.66.050.b, in order to procure a permit from the City Arborist to remove a Significant Tree where its removal is considered beneficial to the health of the tree canopy and avoid Mitigation Payments the following will be required:

- a. completed Tree Removal Permit Application Form.
- b. A detailed and substantive narrative from a Certified Arborist explaining what Significant Trees are to be removed and why the removal of these Significant Trees is beneficial to the health of the tree canopy on the property.
- c. Photographs of the Significant Tree proposed for removal including photographs of its silhouette and its DBH measurement as stipulated in the Ordinance.
- d. Photographs of the other Significant trees showing, the interrelationships between the Tree to be removed and the other Significant Trees and the canopy cover.
- e. A signed Certification from a Certified Arborist using the attached Form B.
- f. Signed permit approval by the City Arborist to remove the Significant Tree.

**12. Where a tree poses significant negative impacts on an adjacent existing structure.**

In accordance with Section 8.66.050.b, in order to procure a permit from the City Arborist to remove a Significant Tree that poses a significant negative impact on an adjacent existing structure and avoid Mitigation Payments the following will be required:

- a. completed Tree Removal Permit Application Form.
- b. A detailed narrative, prepared by a professional engineer if required by the City Engineer, explaining the high risk of significant negative impacts the tree poses to the adjacent existing structure.
- c. Photographs of the Significant Tree proposed for removal including photographs of its silhouette and its DBH measurement as stipulated in the Ordinance.
- d. A completed Level 2 ISA Tree Risk Assessment provided by a Certified Arborist.
- e. If required by the City Arborist, a signed Certification from a Certified Arborist using the attached Form A.
- f. If required by the City Engineer, a signed Certification from a Professional Engineer (specialty qualifications may be required – i.e. Structural, Geotechnical etc.)
- g. Signed permit approval from the City Engineer and the City Arborist to remove the Significant Tree.

**13. Removal of Exceptional Trees.**

When a permit is submitted to remove an Exceptional Tree, the City Arborist, can at their discretion, require a Level 3 International Society of Arboriculture (“ISA”) Tree Risk Assessment of the tree, at the property owners expense, to ensure that the tree meets the criterion under which the property owner has submitted for removal.

**14. The Tree Removal Replacement Fund Schedule.**

In accordance with Section 8.66.050, in order to procure a permit from the City Arborist to remove a Significant Tree Mitigation Payments will be required and will be paid to the City of Cambridge and deposited into the Tree Replacement Fund as established by 8.66.075:

For those who qualify for the City’s Residential Real Property Tax Exemptions:

10% of the replacement cost to the City, in accordance with the current rate used in the City of Cambridge Tree Planting Contracts for purchasing, planting, watering and maintaining the replacement trees for a period of not less than five years.

The City’s Residential Real Property Tax Exemption status must be current and will be verified by the City of Cambridge Assessing Department

0% of the replacement cost to the City for property owners who receive established forms of financial assistance including the following:

- MassHealth Basic or Standard (Medicaid)
- Food Stamps (SNAP)
- Supplemental Security Income (SSI)
- Social Security Disability Income (SSDI)
- Fuel Assistance (LIHEAP)
- Free and Reduced School Lunch or Breakfast Program
- Transitional Aid to Families with Dependent Children (TAFDC)
- Veterans Benefits
- Women, Infants and Children (WIC) Supplemental Nutrition Program.

Financial assistance eligibility must be current and identification forms and other official documents verifying receipt of financial assistance will be required.

For all others, full replacement cost to the City, in accordance with the current rate used in the City of Cambridge Tree Planting Contracts, on a DBH basis, for purchasing, planting, watering and maintaining the replacement trees for a period of not less than five years.

By:  \_\_\_\_\_

Date: 6/28/21

Owen O'Riordan

Commissioner of Public Works