

PROTECTING TREES DURING CONSTRUCTION AND ROAD

Community trees are a vital public utility

Trees are an important part of a community's infrastructure that can be damaged during municipal construction and maintenance activities, leading to hazardous conditions and increased costs. Tree wardens and public works staff can work together to protect trees and minimize costs to the community.

Roadside community trees are a vital public utility.

Just as roads perform a necessary transportation function, wires conduct electricity, and pipes move water, roadside trees provide a host of community benefits. Community trees help reduce stormwater flows and mitigate flooding, filter the air, reduce heating and cooling costs, contribute to property values, add to community character, and beautify the landscape — strengthening the social and economic vitality of our towns and cities.



Community trees are under the control of the tree warden.

Under Massachusetts General Law, Chapter 87:

- All trees within the public way or on the boundaries thereof are defined as public shade trees.
- The tree warden is responsible for the care, control, protection, and maintenance of all public shade trees, and shall enforce the provisions of law for protecting these trees.
- The tree warden may make regulations for the care and preservation of public shade trees and establish fines.
- No other person may plant, trim, cut, or remove a public shade tree without permission of the tree warden. *This includes the cutting of roots during construction.*
- **No person, including the tree warden, may remove any healthy tree, greater than one-and-one-half inches in diameter, without a public hearing.**

The importance of roots and bark

Roots and bark are two vital organs for trees. Roots take up water, oxygen, nutrients, and provide stability. Bark transports water, food, and nutrients to the rest of the tree. If these are damaged, a tree will decline and may die.

- Most tree roots are in the top two feet of soil.
- A large portion of absorbing roots are outside the "dripline" of the tree.
- The inner bark serves as part of the vascular system for the tree.
- Roots are rarely observed under existing paved roads.

Some suggested guidelines for protecting trees

Prior to construction or road improvement activities:

- Be involved early. The tree warden should have a process for being informed of upcoming construction activities early in the planning stages.
- The tree warden and public works staff should meet on site to discuss the type of work to be completed and collaboratively develop strategies for protecting desirable trees and groupings of trees.



Protect roots:

- Ideally, steps should be taken to protect the “critical root zones” of desirable trees.
- The radius of the “critical root zone” is determined by multiplying the diameter of a tree in inches, by feet. In other words, a 10-inch diameter tree will have a 10-foot radius “critical root zone.” Do not just protect to the “dripline” of the tree.
- Roots are rarely observed to travel under existing paved roads.
- The “critical root zone” should be protected by placing hard fencing around the zone. Snow fencing is often moved.
- Within this protected zone, there should be no activity and no storage of vehicles, equipment, and supplies. These activities cause soil compaction.
- Avoid any kind of trenching or soil disturbance close to the trunk of the tree.
- It may not always make sense to protect the full “critical root zone,” especially for roadside trees. In these cases, the tree warden and highway staff should work together to establish a “zone of tree protection” that makes sense.

Protect the bark:

- If the “critical root zone” is protected, then the bark should be protected. However, sometimes bark still gets damaged during construction and maintenance activities.
- Work with staff and contractors to be sure everyone understands the importance of bark and the need to protect bark from nicks, scrapes, and gouges.
- Fences and well-defined tree protection zones can help protect bark.
- You may want to additionally mark or flag trees that could be in danger of injury from equipment, including trees that may be damaged during routine snow removal.

Protect against changes in grade:

- Changes in grade can be as damaging to tree roots as cutting, trenching, or soil compaction, and may eventually lead to tree decline and death.
- Make sure that the grade is not changed within the identified tree protection zone.
- You may want to inspect and restore changes in grade that result from normal road maintenance activities, such as snow removal and road re-grading.



ADDITIONAL RESOURCES:

Fite, Kelby and E. Thomas Smiley. 2016. [Best Management Practices - Managing Trees During Construction](#). 2nd ed. ISA.

Penn State Extension. 2017. [A Guide to Preserving Trees in Development Projects](#).

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