



DWR – NPDES-SOP – G – 16 –Erosion Prevention and Sediment Control Handbook–06202025

Erosion Prevention and Sediment Control Handbook

3.3.3.4 Tree Preservation



Source: TDEC

Definition and Purpose

Tree preservation includes practices to protect desirable trees from damage during construction activities. Trees can have present or future value, as healthy, mature trees enhance property values, improve aesthetics, promote soil stability, and filter air pollutants (NCDEQ, 2013; City of Albany, 2024).

Appropriate Applications

These practices can be applied on any construction site with existing trees.

Limitations and Maintenance

In spite of precautions, some damage to protected trees may occur. If damages to existing trees occurs, repair the damages by the following maintenance specifications (NCDEQ, 2013):

- Repair roots by cutting off the damaged areas and painting them with tree paint. Spread peat moss or moist topsoil over any exposed roots;
- Repair damage to bark by trimming around the damaged area, taper the cut to provide drainage, and paint with tree paint; and
- Cut off all damaged tree limbs above the tree collar at the trunk or main branch. Use three separate cuts to avoid peeling bark from healthy areas of the tree.



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Planning and Design Criteria

During the site evaluation, note where valuable trees and other natural landscape features are to be preserved, then consider these trees and plants when determining the location of roads, buildings, or other structures. When marking trees to protect, be sure to install practices around the drip line of tree branches as opposed to solely around the trunk (Figure 3.3.3.4-A).

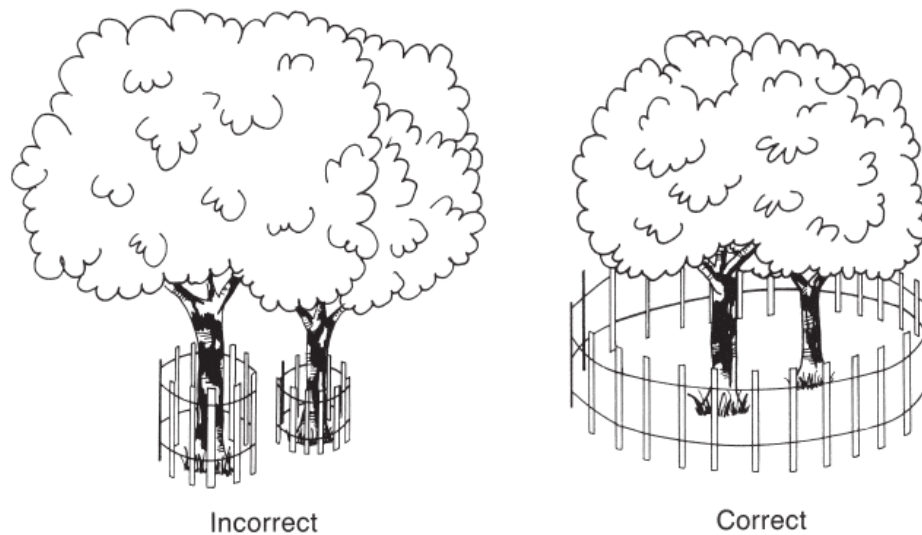


Figure 3.3.3.4-A: Construction barriers should be installed at the drip line of the tree branches. Source: NCDEQ (2013).

Construction activities can significantly injure or kill trees unless protective measures are taken. Trees are considered for preservation for the following benefits:

- They stabilize the soil and prevent erosion;
- They reduce stormwater runoff by intercepting rainfall, promoting infiltration, and lowering the water tables through transpiration;
- They moderate temperature changes, promote shade, and reduce the force of wind;
- They provide buffers and screens against noise and visual disturbances, providing a degree of privacy;
- They filter pollutants from the air and produce oxygen;
- They provide a habitat for animals and birds; and
- They increase property values and improve site aesthetics.

Consider the following characteristics when selecting trees to be preserved and protected (NCDEQ, 2013):



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- Tree vigor – Preserve healthy trees. A tree of low vigor is susceptible to damage by environmental changes that occur during site development. Healthy trees are less susceptible to insects and disease. Indications of poor vigor include dead tips of branches, small annual twig growth, stunted leaf size, sparse foliage, and pale foliage. Hollow or rotten trees, cracked, split or leaning trees, or trees with broken tips have less chance for survival;
- Tree age – Old, picturesque trees may be more aesthetically valuable than smaller, younger trees, but they may require more extensive protection;
- Tree species – Preserve those species that are the most suitable for site conditions and landscape design. Trees that are short-lived, brittle, or are susceptible to attack by insects and disease may be poor choices for preservation;
- Tree aesthetics – Choose trees that are aesthetically pleasing, shapely, large, and colorful. Avoid trees that are leaner and in danger of falling. Occasionally, an odd-shaped tree or one of unusual form may add interest to the landscape if strategically located. However, be sure the tree is healthy; and
- Wildlife benefits – Choose trees that are preferred by wildlife for food, cover, or nesting. A mixture of evergreens and hardwoods may be beneficial. Evergreen trees are important cover during winter months, whereas hardwoods are more valuable for food.

Although direct contact by equipment is an obvious means of damaging trees, most serious damage is caused by root zone stress from compacting, filling, or excavating within close proximity to trees. Clearly mark boundaries to maintain sufficient undisturbed areas around the trees. The following general criteria should be considered when developing in a wooded area:

- Leave critical areas (such as floodplains, steep slopes, and wetlands) with desirable trees in their natural condition or only partially cleared;
- Locate roadways, storage areas, and parking pads away from valuable tree stands. Follow natural contours, where feasible, to minimize cutting and filling in the vicinity of trees;
- Select trees to be preserved before constructing roads, buildings and other structures;
- Minimize trenching in areas with trees. Place several utilities in the same trench;
- Designate groups of trees and individual trees to be saved on the EPSC plan sheets and in the SWPPP; and
- Do not excavate, traverse, or fill closer than the drip line, or perimeter of the canopy, of trees to be preserved.

Use the following guidelines at all times throughout the construction process:



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- Do not nail boards to trees during building operations;
- Do not cut tree roots inside the drip line;
- Do not place equipment, construction materials, topsoil, or fill dirt within the limit of the drip line of trees to be preserved;
- If a tree marked for preservation is damaged, remove it and replace it with a tree of the same or similar species, two inch caliper or larger, and from a balled and burlap nursery stock when activity in the area is complete; and
- During final site cleanup, remove barriers from around trees.

Example Application

No formal design or quantities are required for this measure and therefore are not presented here.

References

City of Albany. (2024). *Erosion Prevention and Sediment Control Manual*.
NCDEQ. (2013). *Erosion and Sediment Control Planning and Design Manual*.