

## PROTECTING TREES FROM CONSTRUCTION DAMAGE\*

Are you planning to build or remodel a home? Are you going to expand or pave your driveway? Are your city's streets, curbs, sidewalks, and buried utilities about to be widened, modernized, or replaced? Before construction begins, consider the impact on trees.

Careful tree protection will help you avoid the expense and heartache of later repairing or removing trees that were located too close to construction activities (see "How Close Is Too Close?" below). Depending on the type of construction and proximity to trees, you may be able to protect the trees yourself, or it may be best to consult with an arborist to design, implement, and enforce a tree protection plan.

**☞ Start planning early.** To minimize costs and increase the likelihood of successful tree preservation, start tree protection planning as soon as possible.

### How Close Is Too Close? Defining The Protected Root Zone (PRZ)

The tree's Protected Root Zone (PRZ) can be identified as follows:

1. Measure the diameter (width) of the trunk at chest height, to the nearest inch. To do this, either wrap a tape measure around the trunk and divide that number by 3 or hold a yard stick up to the trunk and approximate the distance.
2. Multiply that number by 1.5 for mature or stressed trees or by 1.0 for young, healthy trees. Express the result in feet.
3. Measure that distance from the trunk of the tree. The area within this radius is the Protected Root Zone (PRZ).



\*Adapted, with permission, from Johnson, G. 1999. Protecting trees from construction damage: a homeowner's guide. St. Paul, MN: University of Minnesota Extension. 21 p.

The activities listed below all negatively impact tree roots. To protect your trees, define the Protected Root Zone (PRZ), and keep these activities away from this area, at a minimum.

#### Storing Materials and Moving Equipment

Soil compaction is one of the main killers of urban trees. Stockpiling building materials, using heavy machinery, and excessive foot traffic all compact the soil. To minimize damage, install orange polypropylene or chain link fencing and post "Off Limits" signs around the PRZ of the trees you plan to save. Check the fence often to be sure that it is still intact and serving as a barrier.



#### Changing the Grade

Adding or removing as little as 2 inches of soil in the PRZ can kill a tree. To minimize damage, consult an arborist about methods to protect the roots if fill needs to be added or soil needs to be removed within the PRZ.

#### Excavating

If utility or irrigation lines cannot be relocated outside the tree's PRZ, reduce root damage by requiring tunneling under the tree's root system (instead of trenching through it). Specialized equipment that blows soil away from the roots using compressed air allows utilities to be placed with very little root damage. Otherwise soil tunneling equipment can be used, reducing root damage by up to 25 percent compared with trenching.

For all digging operations, insist that exposed roots be cut cleanly to promote quick wound closure and regeneration. Vibratory plows, chain trenchers, stump grinders, and hand tools do a better job at this than bulldozers and backhoes.

Avoid excavating during hot, dry weather; keep the plants well watered before and after digging; and cover exposed roots with soil, mulch, or damp burlap as soon as possible.

#### Paving

To minimize damage, keep walkways at least 3 feet from the anticipated mature trunk.

