

## Section 8: Protection of Trees during Construction

Construction damage and development are some of the most common causes of tree death and decline in urban areas. Existing and future trees and shrubs should be conserved and integrated during site planning and construction for a variety of reasons including economic, social, environmental and cultural factors.

Plans should be made to avoid the most common types of injuries to trees including root cutting or damage, soil compaction, mechanical injuries to trunks, major roots or crown and covering the root collar of the tree with fill soil.

### PROTECTION AND PRESERVATION STANDARDS

Tree preservation efforts shall comply with the Boulevard Landscaping and Public Tree Ordinance and as outlined by the following criteria.

1. The Parks and Recreation Director or designee shall review all projects involving tree(s) on public property when the project is conceived and continue through the planning, design, construction and maintenance phases. Decisions to preserve, plant and remove specific trees can be discussed and determined at the same time decisions are made regarding site layout, grading requirements and construction techniques.
2. **General guidelines for construction, excavation, grading or compaction impacts on City owned trees.**
  - a. A standard Critical Root Zone (CRZ) or Tree Protection Zone (TPZ) unless noted otherwise by City Arborist shall be determined with the following equation.  
**(Tree diameter\* in inches)x2, then convert to feet=CRZ/TPZ diameter.**  
Example: (20 inch diameter tree)x2=40 foot diameter CRZ
    - i. Inside ¼ CRZ shall be no impact or root cutting – 100% undisturbed
    - ii. Inside ½ CRZ shall be no cutting of roots 3” or greater or added fill. Grade lowering shall be limited to 2”. All work in this area shall be monitored by an ISA Certified Arborist – 75% undisturbed
    - iii. Outside of ½ CRZ must preserve a minimum of 50% undisturbed root area.
    - iv. Roots inside CRZ may not be torn or broken by mechanical means. Roots must be pruned in accordance with applicable ANSI A300 standards.  
-Failure to comply with (i,ii,and iii)above will be considered willful and negligent damage to city infrastructure unless noted and approved in pre-construction plans by Parks and Recreation Director or designee.  
\*Tree diameter to be measured 4.5 feet from ground level with diameter tape or calipers.
  - b. If requirements in (a) cannot be satisfied, effected trees are considered to be structurally unsound until inspection and approval from City Arborist. It shall be the responsibility of project manager or contractor (responsible party) to mitigate the structurally deficient trees by removal. Removal shall be directed

and monitored by City of Helena. Trees that are removed shall be replaced with Ball and Burlap trees of minimum 2 inch caliper. Species to be determined by City Arborist. All newly planted trees installed as part of this section shall hold a guarantee of a minimum of 3 years from date of acceptance by Parks and Recreation Director or designee. Should project manager or contractor neglect this responsibility the City of Helena may perform necessary remediation and replanting which would be billed to responsible party.

- c. Should project manager or contractor damage tree(s) above ground, they will be held responsible for mitigation and value of trees.
  - d. To the extent possible, these decisions should be made during the planning process.
- ~~2.~~ 3. For specific recommendation consult “Managing Trees During Construction” which is a companion publication to the ANSI A300 Part 5: Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development and Construction). On file at Helena Parks and Recreation Department.