

EXAMPLE TREE INVENTORY TABLE



Tree Inventory Tables should include the following information at a minimum:

Tree ID	Scientific Name	Common Name	DBH (in)	Health Condition	Structural Condition	Combined Viability	Dripline Radius (avg radial ft)	TPZ (Radial ft)				Landmark (Yes/No)	Grove (Yes/No)	Approved Conifer (1.5 X TDC)	Proposed Action	Tree Density Credits (TDC)	Notes
								N	E	S	W						
1	<i>Pseudotsuga menziesii</i>	Douglas-fir	32	Good	Good	Viable	20	15	12	18	15	Yes	Yes	Yes	Retain	11	Over-extended branches; old branch tear out (3")
2	<i>Thuja plicata</i>	Western redcedar	15	Good	Fair	Viable	15	15	15	15	15	No	Yes	Yes	Retain	4.5	Multiple trunks at 40 feet
3	<i>Acer macrophyllum</i>	Bigleaf maple	26	Good	Fair	Viable	25	25	30	25	20	Yes	Yes	No	Retain	9	Minimal dieback; ivy growing up trunk
4	<i>Tsuga heterophylla</i>	Western hemlock	19	Poor	Fair	Not Viable	13	10	12	15	15	No	No	Yes	Remove	0	30% canopy decline; chlorotic foliage; appears stressed

Notes on Tree Density Credits (TDC) per KZC 95.34(2)

Tree Density Credits are used to determine replanting requirements for sites undergoing development. The following apply when determining TDC:

- Native conifer trees or other conifers listed in the [Approved Conifer Tree List](#) shall receive 1.5 X tree credits (max 11 credits per tree)
- Maximum number of TDC awarded to a single tree is 11 credits
- Trees determined as Not Viable or trees proposed for removal shall not receive TDC
- Trees located on public property (right-of-way or dedicated right-of-way and vehicular access easements) shall not receive TDC
- Trees shared with neighboring properties shall receive half (0.5) TDC
- For all trees that fall between size categories, credits shall be rounded down (EX: 15" tree = 3 TDC)
- For short plats or subdivisions, TDC shall be calculated for each individual lot

Tree Credits for Existing Regulated Trees

DBH:	Regulated Tree											Landmark Tree	
	3"-5"	6"-10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30+"	
Tree Credits:	0.5	1	2	3	4	5	6	7	8	9	10	11	

Applicable Definitions per KZC 95.10

Diameter at Breast Height (DBH) – The diameter or thickness of a tree trunk measured at 4.5 feet above average grade. For trees with multiple trunks at 4.5 feet height, only trunks 3” DBH or greater shall be included. Where a tree splits into several trunks close to ground level, the DBH for the tree is the square root of the sum of the DBH for each individual stem squared (example with 3 trunks: $DBH = \text{square root} [(stem1)^2 + (stem2)^2 + (stem3)^2]$). If a tree has been removed and only the stump remains that is below 4.5 feet tall, the size of the tree shall be the diameter of the top of the stump.

Health and Structural Condition – See Table 1 on Page 3 below

Combined Viability – See Table 2 on Page 3 below

Dripline – The distance from the tree trunk that is equal to the furthest extent of the tree’s crown. For trees with asymmetrical crowns, the dripline shall be measured in all four cardinal directions (North, South, East, West).

Tree Protection Zone (TPZ) – A defined area within and including an outer boundary, as determined by a Qualified Professional Arborist, in which certain activities are prohibited or restricted to prevent or minimize potential impacts from construction or development, applicable to individual trees or groups of tree trunks, roots and soil. TPZ is measured in feet from the face of the trunk and may be determined using Critical Root Zone, dripline, exploratory root excavations or other methodologies. The TPZ is variable depending on species, age and health of the tree, soil conditions and proposed construction. TPZ denotes the location of tree protection fencing.

Landmark Tree – A regulated tree with a minimum 26-inch DBH.

Grove – A group of three or more viable regulated trees with overlapping or touching crowns that are located on a proposed development site; one of which is located in a required yard.

Recommendations for Calculating the Tree Protection Zone (TPZ)

The TPZ is the area beneath and around a tree where roots are essential to tree viability and stability. The TPZ is defined by the Qualified Professional Arborist and is the area surrounding the trunk designated to protect roots and soil. There are many methods for determining the TPZ; two of the most common methods are the tree’s dripline or an area of one (1) foot for every one (1) inch of trunk diameter. The Qualified Professional Arborist should apply their experience and observations of site conditions and existing tree condition when determining the TPZ.

Another Best Management Practice (BMP) for determining the TPZ utilizes a multiplication factor based on the trunk diameter. This method considers the species tolerance to construction damage and relative tree age to calculate the TPZ. Figure 1 shows the information and categories for calculating the TPZ using this method.

Example: A 26” DBH Douglas-fir tree with a high tolerance to construction damages that is of mature age would receive a TPZ as follows:

$$26'' \text{ DBH} \times 8 / 12'' =$$

17' TPZ (rounded down from 17.3)

Species Tolerance to Construction Damage	Relative Tree Age	TPZ Multiplication Factor
High	Young	6
	Mature	8
	Overmature	12
Medium	Young	8
	Mature	12
	Overmature	15
Low	Young	12
	Mature	15
	Overmature	18

Figure 1. Best Management Practices: Managing Trees During Construction 2016 (Kelby Fite & E. Thomas Smiley)

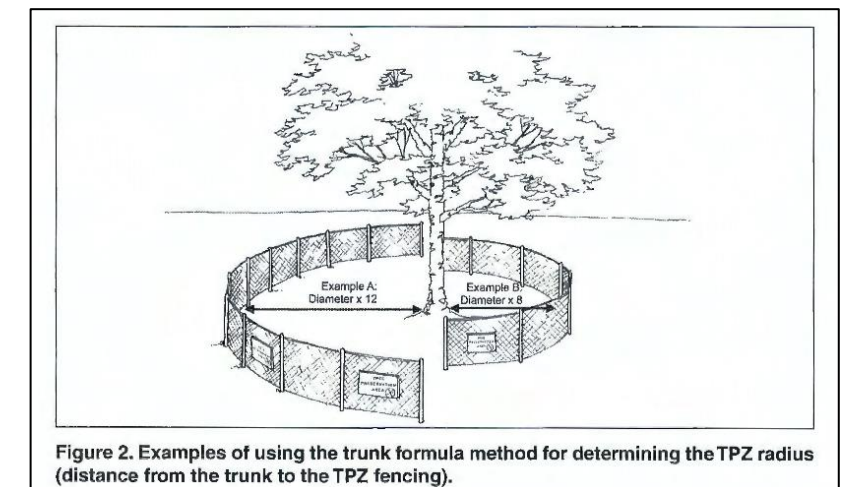


Figure 2. Excerpt from BMP: Managing Trees During Construction 2016 (Kelby Fite & E. Thomas Smiley)

Tree Condition & Viability Ratings per KZC 95.30(3)(c)

Table 1. Tree Condition Ratings

Condition Rating	Tree Health <i>Twig and leaf density, size and growth, pest/pathogen issues</i>	Tree Structure <i>Root flare, trunk condition, branch assembly</i>
Excellent	High or above average vigor with little or no twig dieback, discoloration or defoliation.	Trunk and root flare exhibit no visible defects or cavities. Branch structure and attachments are normal for species and free of defects.
Good	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation or discoloration is minor (up to 10% of the crown).	Well-developed structure. Defects are minor and can be corrected. Codominant stem formation may be present. Trees in groves may have asymmetries/deviations from an open-grown form of the same species.
Fair	Reduced vigor. Twig dieback, defoliation, discoloration, and/or dead branches up to 30% of the crown. Obvious signs of pest problems contribute to a lesser condition but is not likely to be fatal.	Visible evidence of trunk damage or cavities, large girdling roots or branch attachments that require moderate corrections.
Poor	Poor vigor, unhealthy and declining. Low foliage density with extensive (more than 50%) twig and/or branch dieback. Smaller-than-normal leaf size and little evidence of new growth.	Structural problems cannot be corrected, such as recent change in tree orientation, extensive trunk decay or poor branch attachments. Tree/tree part failure may occur at any time

Based on the condition ratings for health and structure in Table 1, the tree's overall viability shall be assessed as follows in Table 2:

Table 2. Tree Viability

		Tree Health			
		Excellent	Good	Fair	Poor
Tree Structure	Excellent	Viable	Viable	Viable	Not viable
	Good	Viable	Viable	Viable	Not viable
	Fair	Viable	Viable	Not viable	Not viable
	Poor	Not viable	Not viable	Not viable	Not viable