

Some of the defects that put trees at risk include:

Cracks result when wood tissue separates and develops a noticeable split. Not all cracks are equal. A horizontal crack occurs across the wood grain, or perpendicular to the tree trunk length. When this less commonly seen crack develops, the tree is in the process of failing sooner rather than later. A vertical crack goes with the grain of the tree. As additional wood grows, it may roll into the tree trunk or grow outward as a ribbed crack from trunk tissue attempting to seal the crack. Some trees recover from cracks, but they are more susceptible to failure during storms.

Dead Trees and Parts occur from a variety of causes, and given time these trees and parts will fail. Where damage or injury to people or property is unlikely, consider leaving dead trees and parts for wildlife. Removing dead trees or parts should occur as soon as possible, once the decision has been made for their removal. However, they should be removed immediately or considered a priority when major property damage and/or human injury are eminent outcomes.

Decay is the loss of wood structure, and results in rot or total wood loss. In general, a tree can tolerate a portion of wood with decay. As 1/2 to 2/3rds of the stem diameter becomes decayed, the tree progressively becomes more prone to failing during a storm. Trees with only 1/3 of stem diameter remaining are at risk of failure in moderate to severe storms. Tree decay associated with other defects such as cracks, poor architecture, or weak branch unions may increase the chance of failure.

Poor Architecture of trees occurs when the growth is unbalanced. This defect may occur throughout the tree, in the roots, stem, and branches. Leaning trees are an example, but having a lean may not necessarily mean a tree is at high risk to fail. A lean associated with recent soil movement, however, is an indicator of greater threat.

Root Problems occur through many ways and result in inadequate anchoring. Severing roots during construction is one cause. Planting trees too deep may result in stem girdling roots. Placing excessive fill or removing soil can damage roots and lead to anchoring issues. A telltale sign of root issues is often the dieback of the tree canopy. However, not all root severing will show symptoms over time. The loss of 30% to 50% and more will make trees prone to toppling.

Weak Branch Unions result when a branch or two adjoining stems are poorly attached to the tree or each other. A classic example called “included bark” results from bark tissue between a branch and the trunk or two similar sized branches at a forking juncture. Another poor attachment occurs when a shoot forms as the result of injury or environmental stress. This branch type can be especially prone to failure when associated with decay.

Cankers are dead tissue of the bark and wood. They develop into wounds from equipment hitting the tree stem, animals, insects, and disease. When a canker becomes large or when several small cankers join, a tree becomes more likely to fail during storms. Cracks or decay may interact with the canker and exacerbate the problem.

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