

A Visual Tree Assessment Wrap-Up

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In the last few issues we have discussed **Visual Tree Assessment (VTA)**. Green industry workers need to be aware of how a tree failure can jeopardize public safety. The intent of these articles has not been to lead to mass removal of trees, but instead to raise public awareness and understanding of risk evaluation for trees.

Trees are an asset to a community. They help to filter the air, slow silt runoff into waterways, add amenities to the community, attract birds, establish a new neighborhood, and provide necessary shade to homes and play areas. These amenities save a community's money and increase value to subdivisions and individual lots.

If a tree is structurally weak, it can be a liability. VTA is a process to help determine when trees may present a potential for liability. The previous series of articles has discussed each step of VTA. To recap the VTA process, a technician needs to assess an individual tree part by part.

The VTA Process: Part by Part

1 First, the technician should look for a leaning trunk that corresponds to a raised area of ground around the base of the tree. Roots that push up on the ground above them may signify that the tree may be ready to fall. The technician should also assess destabilizing erosion and extensive fungal growths growing from areas of soil with roots below them.

2 Next, the root flare itself should be investigated. The root flare is the area where the roots join the trunk of the tree, often resembling the foot of an elephant. To assess the root flares, the technician should count the number of flares with decay and raise a red flag if more than 30 percent have decay. Other areas of concern are cracks in the root flares and extensive insect activity. Roots that raise sections of concrete can create a trip hazard as is seen in the photo to the right. The root flare is part of the stabilization system for a tree; without roots and healthy root flares, the tree may become unstable.



Sidewalks raised by roots create hazards.

3 After examining the root flare, the technician should examine the trunk. Any areas of decay should be investigated. A drill test may be necessary to determine the thickness of sound wood for the cylinder of the trunk. This procedure may require the services of a Consulting Arborist who is trained in hazard tree assessment. Trunk cavities should be investigated to determine their size and depth. Cracks emanating from the sides of the cavity should be identified. Any of these serious weaknesses can lead to failure of the tree.

4 The limb junctions should be examined for cracks in the junctions. Low-hanging limbs over sidewalks may be a hazard to bicyclists. Also, is there decay that could weaken the connection between the limb and the trunk? Is there vegetation growing out of the junction? Are there animals living in a cavity in the junction? It may be necessary to have an Arborist climb into the tree to investigate these potential weaknesses.

When looking at the scaffold limbs, loose areas of bark and cross grain cracks can be cause for alarm. Ice, snow and



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About the Author

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Wrap-up (continued)

high winds can leave a limb with a crack that is often undetectable to a technician on the ground. When these limbs fail, it can be a surprise. The VTA technician should look for callous wood (it may look like a crease) that extends horizontally and that can be seen on both sides of the limb. Other conditions calling for closer inspection are fungal growths and large dead limbs. A technician may need to carry a set of binoculars to make it easier to see flaws and potential weaknesses high up in a tree.

5 The final area that should be assessed is how the tree interacts with its environment. Some trees are not right for some spaces. Tall growing trees should not be planted underneath power lines, because limbs that rub against lines can expose people to electric shock if they touch the tree. Thorns and play areas, and low-hanging limbs and sidewalks, can be bad combinations. All these areas should be assessed to keep the public safe from hazardous trees.

Assessing the Target

For a tree to present a potential for risk there must be a target, something nearby that can be damaged. What will the tree or tree part hit if it falls? Common thought says “if there is no target there is no risk.” Ideally, if a tree is out in the middle of nowhere and falls, there will be no damage and therefore no risk. Caution should be taken when assessing the target. What is the likelihood of tree failure, and what damage will it cause? All trees present some potential for failure; given certain climatic events, even the healthiest of trees could fail. A seasoned VTA technician needs to assess the likelihood of failure.



To make this determination, the previous steps of VTA should be assessed. When the potential for failure is determined, then it must be assessed—What will the tree or tree part hit and what damage will it cause? If the part which will fail is a branch and it will hit a concrete wall, there may not be much to worry about; but if the branch will hit a glass greenhouse or a group of school children on a playground; then there is more need for concern.

The second determination that should be investigated is the value of the target. A limb falling on an old shed is one thing but a limb falling on a brand-new Mazaratti is another. A limb falling onto a back lawn area causes one concern, while a whole tree falling across a newly constructed golf green creates a whole different concern.

When assessing the target, one must look at the frequency of use of the target. If the limb hangs over a very busy roadway, the likelihood for damage is higher. But if the limb is in the middle of a forest where people rarely go, the likelihood is lower. One key for the VTA technician is to ask the client to define their own “threshold of risk.” Are they wanting to remove all possibility of failure (this may be impossible), or are they restricted by budgetary concerns and want to remove the worst-case trees first?

A rating system may need to be set up to assist in prioritizing. A numbering system of 1-5 is often a good way to assess trees. With this system, fives which are deemed “structurally unsound or dead” should be removed immediately, threes and fours may be removed according to the client’s budget and risk tolerance and ones and twos may be left for future pruning and care. A high-end residential client may authorize that all necessary tree care be completed in a calendar year while a municipality or parks department with a limited budget may need to prioritize services.

The most difficult trees for the seasoned VTA technician to assess are the trees with limited flaws in exposed areas with low traffic volume. In these situations it may be impossible to predict all potential for failure. It is necessary to realize that trees are not engineered products that can be tested, but are natural structures that may be put to any number of varied external forces. For this reason a disclaimer should be attached to every VTA report explaining that the VTA technician has used “the best of his/her knowledge and training to take into account every possibility, but that trees and failure are not totally predictable due to the many combinations of external forces which affect trees.”

A Visual Tree Assessment (VTA) program is a necessity for any municipality, parks department, homeowners association, school system, and for development or building groups. Reducing risk is a sign of good stewardship as well as good business. This series of articles is not intended to be all-inclusive and should not be seen as an exhaustive training course, but instead as an introductory primer. Further studies are necessary, and remember: when in doubt call an Arborist! The American Society of Consulting Arborists (www.asca-consultants.org) is a good source for competent arboricultural consultants. If you cannot find a Consulting Arborist in your area, feel free to contact the author.

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	Age	Per 100	Per 1000
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6-12"	2-0	37.00	145.00
12-18"	2-2	84.00	600.00
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4-8"	2-0	43.00	170.00
6-12"	2-0	45.00	200.00
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6-12"	1-0	60.00	380.00
12-18"	2-0	70.00	450.00

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Please Call or Write for a Complete List