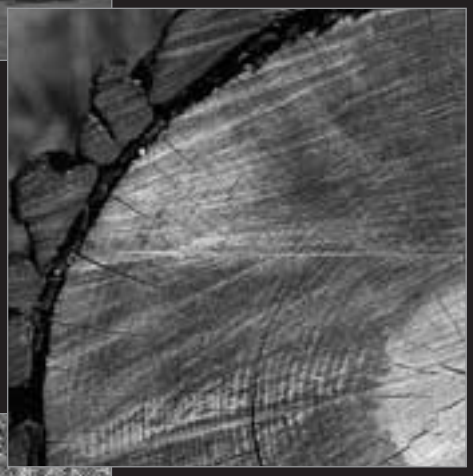
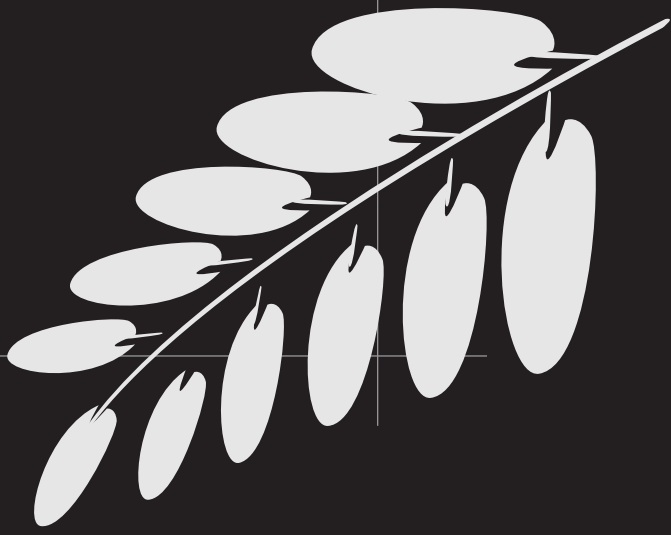
Determining the Value of Trees





By John P. Weber

The Dilemma of Property Acquisition with Landscaping

One of the most common problems encountered in dealing with a partial acquisition is the value of the trees in the area to be acquired and the effect of their removal on the value of the remainder. This subject of trees is unique to each particular property acquisition and can be addressed in a myriad of ways equally unique.

What Are Trees Worth?

The simplest scenario is to have a property wooded with naturally occurring trees where the removal of a strip of them during project construction is minimized by a significant number of trees remaining or the number removed is not necessarily noticeable in the after condition. Under this scenario, the comparable sales used to estimate the value of the property should be similarly treed and therefore the value of the property, on a price per acre or price per square foot, includes the value of the trees.

It may sound simple, but it is seldom easy to sell to a property owner. Consider, for example, a relatively uncomplicated acquisition where one is acquiring rural property covered with native conifers or oaks. Mature pines or cedars on the property may be worth $1,000 apiece as saw logs. The oaks may be nearly as much when valued as firewood or when sold to a hardwood mill.

The value of the trees may easily exceed the value of the land. If your offer includes the value of the trees on a per unit land value, who gets the value for the trees? Is it the agency, the landowner or the contractor? The answer is, it depends. It depends on a particular coordination among all three, but primarily, it depends on the desires of the property owner and the flexibility of the acquiring agency.

If the trees are not naturally occurring species, they probably fall into the category of landscaping. Landscaping can and should have a cost associated with it that is over and above the value of the property and normally will be identified in the appraisal as a cost to cure.

But there are also a number of ways to value these types of ornamental trees and a number of methods to negotiate a settlement to include the value for them. If the trees to be removed fall into the category of ornamentals, several approaches to compensation or replacement may be used to settle with the property owner.

Mitigation for Project Impacts

First, tree removal will have to be forecast and mitigation for that removal identified, usually in the environmental clearance stage of the project. The options for mitigation will vary depending upon the jurisdiction, but typically they would be one or a combination of the following:

1. Inch for inch replacement of the removed trees, with a minimum of 15 gallon size trees
2. Total of replacement trees required to have a combined diameter of the trees removed
3. A minimum of 50 percent of replacement trees being of a similar native tree
4. Replacement trees may be planted either on-site or in other approved areas
5. Implementation of a revegetation plan
6. Payment into something like a “tree preservation fund” the value of the replacement trees, including cost of installation, as established by an arborist, forester, or registered landscape architect

The environmental document will detail what type of mitigation will be performed for the removal of trees in the project. If it specifies replanting trees on site and/or paying the value of replacement trees into a mitigation bank, any compensation to the landowner for the lost trees, not identified as a severance damage, is double indemnity, double jeopardy and double payment. This can be a very sticky negotiating point.

For example, in a relatively minor strip take, four mature oak trees will need to be removed, with an average diameter breast height (dbh - the diameter of a tree measured at four and a half feet above the ground) of 30 inches. A 30-inch oak may well be 75 feet high. However, your mitigation would be to plant 60 two-inch oaks (15 gallon @ $50), or to pay into a

mitigation bank the cost of the replacement trees (60 x $50=$3,000).

If for some reason it is not possible to plant the replacement trees on the property, what will the property owner get? Even if it is possible to plant them on the property, that oftentimes is a poor substitute in the landowner's eyes for 100-year-old trees. It is common to have to mitigate the loss of trees, plus compensate the property owner for their loss in the form of cost to cure items, severance damages or proximity damages. The question comes down, as is usually the case, to what is fair to the property and to the public paying the bill.

Although every situation seems to be different, there are a couple approaches to try.

1. Can the trees be moved? Depending on the species and size, it might work to hire a tree spade to move the tree from the acquisition area to the remainder property. Tree spades can move certain specimens up to 35 feet tall and larger ones can be craned on to a flat bed truck. But the expense is considerable and goes up in proportion to the size of the tree. Also, the bigger the tree being moved, the less its chance of survival. This move should probably be accompanied by a maintenance agreement to periodically maintain the tree for about a year to insure its survival. This option may be cost effective when considering the other options, one of which might be condemnation.

2. Would it be acceptable to the property owner to have the contractor remove the stump and the slash, leaving the useable wood for the property owner's benefit, or variations on this theme? Once in dealing with an older couple who heated their house with wood, I had a very large pine tree cut, split and stacked at their house for their use as firewood. I've also had a large oak sawn into planks for a furniture maker. As we acquisition agents know, sometimes we have to get creative. Sometimes it may be appropriate to allow the property owner to dispose of a mature tree, or assist them in doing so. A mature pine, cedar or fir may be worth a $1,000 apiece as a saw log delivered at the mill. If it's an elderly owner, as in the example above, it may be necessary to arrange removal and delivery of that tree for them. The same with a mature oak to a hardwood mill or as firewood, depending on the desires of the property owner.

3. If the appraisal did not identify a cost for replacement trees or landscaping as a cost to cure item, one could ask them to do so. This may have occurred in the negotiations with the property owner and been unanticipated at the time of the initial appraisal. Sometimes it is faster, less expensive and easier to visit a nursery and get a written cost estimate for what it is that will need to be replaced. For example, a 24-inch Monterey pine, four 12-foot fruitless mulberry trees and two 10-foot liquid ambers. Estimate $650. If one presents the property owner with a written estimate from a reputable nursery, preferably a local one that they are familiar with, they may very well accept this additional compensation and settle. Whether they use this money to replace in kind what is removed, replace with something else, or not replace at all is up to the landowners.

4. If the first three options don't work, it may come to the hiring of an arborist or forester to value the trees. I would recommend caution in hiring an arborist and would use this only as a last resort. The arborist's valuation will invariably be quite high often up to 15 times what a replacement tree from a nursery would cost.

Valuation Methodology

So, how do these professionals go about valuing a tree? Arborists typically will use a formula known as the CTLA or ISA formula. Sanctioned by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture, the formula is called the **trunk formula method.** It values a tree by determining its basic value and then adjusting it by the tree's condition and location. The basic value is the sum of the replacement cost of the largest locally available tree of the same species, plus the increase in value due to the differences in size of the appraised tree and the replacement one.

It must be emphasized that the trunk formula method is only one of several methods of tree appraisal and is not always appropriate to use, for example in the appraisal of fruit and nut trees and trees utilized for timber. But more often than not, if a situation calls for an arborist's valuation, they will use the trunk formula, which looks like chart on the next page.

The first two factors can vary greatly because of their subjective nature. Does an arborist give greater weight to a tree in your yard as opposed to a similar tree in the forest? How does one compare a tree that is simply near your house to one that is a focal point in your landscape? The site, placement and contribution of a tree makeup the Location factor. Also, adjustments up and down (usually up) can be made for special circumstances, such as trees with historical, cultural, or size considerations. Will the loss of shade limit your family's use of your yard for years to come? Are the trees in questions providing erosion control benefits (hillside stability), noise reduction from the street, lower energy bills due to shade in the summer and wind reduction in the winter? Are they providing a natural fence, screening out unpleasant sights, security or aesthetic value? Is there sentimental value to the trees? An arborist can put a value on all of these factors.

The health benefits from improved air quality may also be an argument. Trees can remove pollutants such as carbon monoxide and sulfur dioxide. Improved air quality will reduce damage to buildings and add up to further savings. Studies have shown that hospital patients with a view of trees out of their windows recover much faster and with fewer complications than do similar patients without such a view. If your project impacted a hospital or similar medical recovery facility in such a way, is there a quantifiable way to estimate damage to the remaining property?

Orchards and Timber

Special consideration must be given to trees that produce income, the two most

prevalent types being orchards and timber. If there are many of these types of trees to be removed in a project, the best course of action is to have these trees appraised by someone who specializes in this type of appraisal, i.e., an agricultural appraiser and a registered forester. But just a few words about the processes involved.

The appraisal of orchard trees of the fruit or nut varieties is the process of valuing permanent plantings generally considered to be a wasting asset and the three approaches to value still can be used, i.e., the sales comparison, income and cost approaches. As is typical in agency property acquisition or condemnation, the sales comparison approach is most frequently used.

There are so many factors to consider in appraising orchards that a local specialist, with an existing sales database, is almost a requirement to the valuation of fruit producing trees.

Sample factors in sales comparisons include the age and productive life of the trees; the variety, bud and rootstock of the particular trees; tree size, physical condition, soil type; irrigation system; climate, frost control system; time of maturity and tree spacing.

Based on all these factors, the agricultural appraiser can prepare a sales grid which will produce a value per acre, including land and trees. But the properties used for comparables must be similar in fruit variety, age and condition. Because so many differences may exist even for neighboring properties, the appraiser needs to analyze carefully - with sufficient horticultural information - the similarities and dissimilarities of the properties. To find a local agricultural appraiser with expertise in orchards, try the American Society of Farm Managers and Rural Appraisers.

If there were a significant amount of timber on the property, it would probably be best to hire a professional to appraise the land and the lumber. A registered forester can perform one or sometimes both, functions. Obtain a referral through the local chapter of the Society of American Foresters, or other

Appraised Value = Basic Value x Condition x Location
Basic Value = Replacement Cost + (Basic Price x [TA(A) - TA(R)] x Species)

Where:

Condition - A rating of the tree's structure and health and based on 100 percent.

Location - the average for the tree's site, contribution and placement and based on 100 percent.

Replacement Cost - the cost to purchase and install the largest locally available and transportable tree in the area.

Basic Price - the cost per square inch of trunk area of a replacement tree measured at the height prescribed by the American Nursery Standards.

TA(A) - Trunk Area at 4.5 feet above the ground of the appraised tree.

TA(A) - Trunk Area at 6 inches or 12 inches above the ground of the replacement tree.

Species - the rating for a particular species and based on 100 percent.

forestry associations. Sometimes an appraiser can perform both functions.

Sometimes it will be necessary to hire both, depending on the circumstances of the acquisition. In valuing timberland, one may want the forester or appraiser to provide a value of the total property, including both land and timber. Sometimes an estimate of value for land and timber must be done separately.

Standing timber is measured by board feet when saw timber is the merchantable commodity. A board foot equals the volume of a board 12 x 12 x 1 inches. A forester will undertake a timber cruise to estimate the value of the standing timber, or stumpage value. This cruise is a sampling of a percentage of the trees within a stand of timber and then using statistical methods to project the total volume of the stand.

Valuing the land and timber together is done, carefully, by comparable sales using the sales comparison approach. Special attention must be paid (along with the more typical indicators of comparability like parcel size and location) to tree species identification, quantity and quality of timber, site characteristics, location and access of the timber and market demand for that timber. In this case, the offer to purchase includes the timber. The question is who wants it? Usually, it is done just so the contractor can cut it down and sells it. Does the contractor's bid price reflect a credit to the agency for the value of the timber? Often, this credit is not itemized in the bid and the agency's credit does not equal the market value of the timber.

In valuing the land and timber separately, it is usually appropriate to value the timber, use comparable sales of cut over land to value that element and combine the two values into a single indication of value. Sensitivity must be applied in analyzing the cut over comparable land sales considering any residual value in any remaining timber, or the availability of uses for the cut over land not available to the subject property.

But with separate values for the land and timber, its possible to negotiate a settlement with the land owner which allows the agency to acquire and control the property necessary to construct the project and allows the land owner to reap any value from the timber. Depending on how the deal is structured, this can be the best of both worlds. But again, sometimes the timber credit to the agency is a very tenuous thing.

When market value of the property is established using comparable sales that include the value of the timber, an administrative settlement may be reached with allows the property owner to harvest the timber in addition to the payment of just compensation. As an illustration, the appraisal established the value of the property to be acquired, including the timber in this case and that is what the offer is based upon.

If the acquisition is an easement and the landowner retains ownership of the underlying fee title, they may argue that they have the right to remove those trees prior to project construction. Depending on the circumstances of the acquisition, it may be agreeable to allow them to do that.

Severance Damage

The interesting part begins when the property owners contend that the removal of trees causes the remainder property to suffer a reduction in value or severance damage. Some of the more common complaints are increased noise from loss of noise barrier, loss of screening, loss of view amenity, loss of sentimental value (my mother's favorite tree) and loss of privacy and security.

Claims of damage, however, can be as numerous and diverse as the property owners. Are naturally occurring oak trees considered a crop? A rancher contented they were. He maintained he gathered the acorns and leaves and fed them to his pigs and sheep and the trees provided much needed shade to his cattle. His counter-offer included the present worth of multiple years of animal feed and the cost of constructing a shade structure.

Right-of-way professionals are entrusted with taxpayers' dollars and the process is meant to leave a property whole and the owners fairly dealt with.

As we know, damages are a diminution in value to the remainder due to the impact of the acquisition and/or the project. They are generally measured in one of three ways: paired sales analysis, capitalized rent loss, or cost to cure.

Substantiating severance damage through a paired sales analysis may be impossible in some cases and entirely possible in others. It usually takes a much more extensive search for the appropriate market data, but if one can find it, it can be the basis for a most convincing case to support no damage to the remainder. If the appraiser is preparing for a condemnation case, this time spent looking for a paired sales analysis can prove very well spent. One place to look is along the route of similar projects where properties similarly affected have sold.

Capitalized rent loss can be another excellent tool for proving or disproving damage to the remainder due to the removal of trees. If a rental property is affected, are the tenants inclined to move because of the removal of trees? Due they feel a reduction in rent is warranted because of the loss? It may be necessary

to perform a detailed rent survey to find the necessary data to substantiate a loss in rent. This analysis can still be performed if the property is owner occupied.

Cost to cure is probably the most used method. In theory, this method is used when the loss in value to the remainder is greater than the cost to cure the deficiency. More often than not, however, this deficiency is a perceived one on the part of the property owner and the cost to cure it is relatively painless and would facilitate a settlement. More often than not the solution is to replace those trees cut with other trees.

In some cases, with the confirmation of a sound study, one may be replacing the trees cut with a sound wall. This determination of value and estimates of damage to remainders is not an exact science. Right-of-way professionals are entrusted with taxpayers' dollars and the process is meant to leave a property whole and the owners fairly dealt with. The basis for their damage claims may be difficult to support and the emotion behind them difficult to understand. Put yourself in their place.

Finally, a word about temporary easements and permits to enter and construct. If these instruments are used because there is no need for permanent rights and the use requires the cutting of trees (e.g., staging areas, borrow pits). Specify in the document what is to be cut and what you are going to do about it. If it is replanting, describe the details; if it is compensation, state clearly how much and what for. If you've compensated an owner for a temporary easement and there is no mention of cutting trees, you have no right to do that. If you need to remove them, you must spell it out. ■

John Weber is a Right of Way Agent for the Placer County Department of Public Works. Placer County, California extends from Sacramento County on the west to Lake Tahoe and the Nevada border on the east. Mr. Weber is responsible for all property acquisition functions for Placer County, including appraisal, negotiation and property disposal.