

Who Knows the Value of a Tree?

By Marty Shaw, RCA #470

Simply defined, to value something is to hold that thing in high regard. This may sound easy to understand when taken plainly on its surface. In practice, however, the question of value can be elusive, especially if the concept of value is not clearly defined in terms of context. Let's look at a couple of examples: How do you put a price on someone or something you love dearly? What type of exchange could you give to have something like the deep and abiding love and companionship that 50 years of marriage encompasses? What price could you pay to take someone's memories or the emotions that a prized photograph conjures? These are things that cannot be easily bought or sold at any price in light of the esoteric value that individuals might place on them (Appraisal Institute 2010).

Recently, the Andrew Jackson Magnolia, which has adorned the White House's South Lawn since 1829, had some major stems removed. There arose some lively discussions about its worth among some of the country's leading plant appraisal experts. This tree has some unique characteristics that evoke strong emotions in people. What is it worth? What price can we place on obscure things like trees and landscaping when they mean so much to so many people? Value problems that arise from an emotional standpoint bring about serious philosophical questions that can go well beyond the scope of serious and sober plant appraisal work. Our abilities as professional amenity plant appraisers are somewhat limited to boiling things

down into dollars and cents via the course of work that we are routinely expected to perform (Shaw 2018).

Plant appraisers are called upon to answer a specific question of monetary value and to form opinions and conclusions that are supported by facts, evidence, and analysis of reliable and relevant data. Those questions of esoteric value that tend to evoke unfounded judgments based solely on a kneejerk reaction are probably best left to jurisdictional authorities rather than plant appraisers. Certainly, the courts of jurisdiction may be sympathetic to people's feelings and the intangible realities that those feelings conjure, but it is almost always the case that the best the courts can do is provide relief in the form of money in their place. And, there are specific judicial remedies to affect that kind of relief when it is warranted (Detty 2007).

Inevitably, the evaluation process for plant appraisers ultimately comes down to a professional, fact-based opinion of monetary value hedged on the dispassionate realities of each assignment. The appraisal problem must be boiled down to economics. While simple in concept, the plant appraisal task is not easy in practice, nor can it rely solely on simple arithmetic calculations. Preparing a credible, reliable, and quantifiable answer to the plant appraisal problem requires sound judgments based on years of special education, training, and experience in the various professional and scientific disciplines



that special appraisal problems demand. When the subject of the special appraisal problem is the functional and aesthetic characteristics and benefits that a tree or landscape element portrays to its rightful owner, the special skills and competencies of the plant appraiser may be brought to bear. The scope of work needed to thoroughly analyze those rightfully enjoyed benefits and the plant/site characteristics that produce them is not always quickly realized without careful and thoughtful contemplation. While not an easy question to answer, it is a question for which Plant appraisers are supremely qualified and equipped to provide an unambiguous answer (Coleman 2016; Shaw 2018).

The Abstract Concept of Value in Appraisal

The concept of "value," or worth of a property, is necessarily abstract. In plant appraisal, the concept and perception of value must always be considered in the context or circumstances of the appraisal problem and the question of worth that needs to be answered. Let's use the example of oxygen. To the average American, atmospheric oxygen is plentiful, and it flows freely everywhere. Oxygen (in air) cannot be controlled significantly, and it is available to all people, all the time, in roughly the same amounts. While oxygen is important and critical to life, it is also abundant enough that there is generally no need to pay money for it. Oxygen does not hold an emotional attachment or specially attract someone's opinion with high regard because it is always there.

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However, that broad perception of oxygen is not the same for everyone, everywhere, all the time. Anyone who has been deprived of oxygen for any period can tell you that oxygen is quite tangible and is neither abstract nor the need for it ephemeral. In another perspective, any chemist can tell you that oxygen is not difficult to qualify and quantify. Having served as a member of the crew aboard the USS Shark (SSN 591, a submarine), I was keenly aware of the need for oxygen in the air we breathed. I was also aware of the incredible engineering that was necessary to provide oxygen to the crew. I can also confirm that being able to breathe fresh air is something that, for those of us who live out in the country, we tend to take for granted.

Any gas distributor the world over can tell you that the packaging of elemental oxygen gas is a straightforward process and that it may be exchanged for the money it costs to produce and profit in any saleable form. Any patient with certain kinds of lung disease can tell you what it means to them to be able to breathe freely with the aid of additional oxygen. Depending on the unique circumstances of each person, the value of oxygen may vary. There are no right or wrong values when it comes to oxygen, or any type of property. When it comes to the appraised value of anything, value is simply an opinion that is based, in part, on the relevant characteristics of the subject of the appraisal problem. The relevant characteristics are those elements on which the rightful owner's anticipation of future benefits rests. Since the owner of the property is entitled to the full, unencumbered enjoyment and use of the property's future benefits, it is those anticipated benefits that equal value and must be evaluated. You could also say that there are no right or wrong appraised value opinions, only credible and incredible opinions of value (Appraisal Institute 2010).

Let's consider that there are only three different types or approaches to appraised

value. They are Market, Cost, and Income approaches. In this article, we will carefully examine the Market and Cost approaches to value and consider their application in the amenity plant appraisal process in practice. First is **Market** approach to value. The market venue contains both the industry of supply and the desire of demand. It provides the means of exchange in monetary terms. In a free and open market venue, the buyer and seller participants are compelled to transact only by their willingness to freely engage in an exchange transaction while serving their own best self-interests. Of course, not all transactions of property occur at arm's length. There are a variety of forces and many situations that can cause exchange to occur outside the bounds of a completely free, open, and arm's-length marketplace venue (Appraisal Standards Board 2015).

Trees as Contributory Real Estate Market Value or Tree and Landscape CREMV

Market approach to value can inform a credible appraisal result in a broad variety of appraisal problems. Market is the exclusive approach used in the appraisal of noncommercial land (dirt) because the comparative sales data on dirt is usually very plentiful, current, local, and reliable. Market approach is also the most common approach used in assignments involving various kinds of real property where the subject of the appraisal is an improvement. So, for most real estate appraisal problems, Market approach to value is the most appropriate, and that is what is normally used. The assumption that most appraisers make is that because trees are part of real estate, Market approach is the most appropriate means to a credible result, but as we will see, that assumption is false (Detty 2011; Report of the Commission in *United States v Lorraine* 2013).

It seems intuitive that trees produce benefits that people desire and that trees add value to real estate. A 2015 Harris Survey

conducted for the National Association of Landscape Professionals indicated that 75% of Americans felt having a home with a yard was important and that for 90% of those who have a yard, it is important to keep that yard well maintained. Beyond this encouraging number, fully 91% of Americans felt it was important that their home be near trees, grass, or nice landscapes. The same survey said that 84% of homebuyer decisions would be affected by the quality of the landscaping of a home. In my own experience, trees can often be the single most important element in the decision to buy a home. I cannot count all the times where a client has told me "we bought this house because of that tree" or "my wife loved this tree, so we decided on this house" or "I had a tree like that in my yard growing up, so I bought this property." (Miller 2015)

According to the USDA Agriculture Statistics Board's September 2007 report, Americans spent nearly \$4.65 billion on nursery plants alone in 2006. Of course, this only includes the plants themselves and does not include the labor, other materials, equipment, transportation costs, and profits involved in putting those plants into the landscape. These costs and profits would add another 2 to 7 times the plant costs, bringing the total to somewhere between ~\$9 and 23.5 billion spent annually on installing plants alone. Americans also spent around \$40 billion on turf maintenance and care, bringing the total annual American landscaping bill to approximately \$60 billion—and that was over 10 years ago. That figure would likely eclipse \$100 billion today.

There are presently 321.4 million people living in 117 million households. Eighty percent of these households had landscaping, and they spend about \$1,028 annually per household on it. Americans invest about 2% of their annual income into their landscaping (that actually increases to about 4% if they own the

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Americans spend more money on turfgrass maintenance than all other landscape elements combined.

land), and their trees represent a large portion of that expenditure. The numbers are far greater than most people think—I know because I’ve asked them. People are constantly surprised by how much time and money they spend on something they care about, but they are not necessarily conscious of the costs. I think this is why people are sometimes surprised at how much they regard trees when they are gone, and they are even more surprised at the actual costs to replace them when they are lost.

As a real estate investment, professional landscaping consistently ranks among the top five on returns for your money. *USA Today*, *Forbes*, and *Money* have all published articles that speak to this. Professionally designed and executed landscaping is one of the best investments you can make in your home, and a variety of research studies have consistently shown that it can produce up to 20% greater equity in a home property value on the open market. I have personally experienced this in my own home, where I spent about \$5,000 on the planning and execution, and then received another \$15,000 in equity—albeit I did much of the work

myself. There is significant value in trees, and that value can be quantified, calculated, and priced appropriately. There is plenty of evidence to suggest that a large pool of buyers and sellers exists in the real estate markets and that they place a high value on properties that contain trees and landscaping as elements of property value. There is also plenty of evidence to suggest that homes with large mature trees and landscaping bring far greater value to a property than homes with new landscaping and smaller, younger trees. Dozens of scientific research papers exist that attribute added value to landscaping and trees on real estate. Apparently, there is a large pool of buyers who anticipate certain types of enjoyment from owning trees and well-maintained landscaping.

So, economists, real estate appraisers, real estate brokers, the real estate market participants, and the scientific community all agree: trees and landscaping improve property value. Ask the question simply, and you will get a simple and unanimous “Yes, trees and landscaping make a positive difference.” But ask the same question a little differently, and you will get another answer altogether. Ask

how much the trees and landscaping are worth in terms of monetary value from real estate appraisers, and you will get a look of bewilderment.

Real estate appraisers often get uncomfortable with a question like that. You can see their eyes gloss over and their hands begin to twitch—they begin to side-step the question in various ways. The reason is simple. Most residential real estate appraisal problems are performed for government-backed mortgages and other similar financial instruments. These appraisal subjects and the types and definitions of value that pertain to them do not require a thorough evaluation and analysis of the benefits that trees produce. While buyers and sellers may personally be aware of the importance and relevance of trees and landscaping characteristics when considering a residential property, those characteristics are generally ignored and not considered monetizable by the real estate appraisal profession. The evidence for this supposition can be found in the absence of relevant sales data that describes and quantifies tree and landscaping characteristics in the vast reservoir of real estate sales data—namely, the size, species, placement, and conditions of trees and landscaping are missing.

How Does Market Data Work to Inform CREMV?

Data service bureaus are private information services comprising a huge network of real estate professionals. The real estate appraisal community cooperatively amasses a vast reservoir of real estate market sales and real estate appraisal subject characteristics sales data. Each professional subscribes to the service so that they can access the subject characteristics sales data that has been accumulated by other real estate professionals. All real estate data service members have access to the same sales characteristic information that has been gathered by all the others. This voluminous data

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is very handy when you are looking for sales comparisons among multiple properties with similar characteristics. Each relevant characteristic can be paired and analyzed with many similar characteristics from similar properties listed on the real estate market. The service bureau data system works great if the focus of your subject's value is land or structures where the details and amount of relevant data are abundant, local, recent, and reliable.

A problem arises, however, when you try to employ this same comparative sales data to qualify and quantify appraisal subjects with dissimilar characteristics. The normal, credible Market approach principles and practices that apply to data-rich appraisal problems simply break down when you attempt to apply them to the CREMV of trees and landscaping. This is because the relevant data points required to perform a comparative sales analysis of tree and landscaping characteristics is neither current, abundant, local, or reliable. If that data has ever been captured by the real estate professional community, it cannot be verified or proven reliable. That is a remarkable condition of the existing real estate appraisal data sources that cannot be overlooked.

So how do you perform a credible comparative sales analysis if there is no subject characteristic data from which to draw an opinion? The short answer is you can't. If the repository of ready, relevant, and reliable comparative sales data points pertaining to tree and landscaping characteristics does not exist, you cannot perform the necessary paired data analysis. If the comparative sales data analysis does not exist, you must use another approach to value.

There are those who claim that you can do some very sophisticated hedonic regression analysis by using some far away and scant datasets of disparate subject properties from a very long time

ago to inform subject values in disparate periods of time, geography and character. Unfortunately, this is not a credible appraisal process when it comes to trees. That type of process is not a legitimate comparative sales analysis because it violates several of the fundamental appraisal principles that Market approach relies upon. It also artificially introduces various kind of bias to the appraisal result. The hedonic regression analysis (when applied to trees) forces the appraiser to "tweak" the variables to permit them to arrive at a pre-determined appraisal result. The hedonic regression process applied to trees is the appraisal equivalent of hocus pocus, alakazam and poof—out from the wizard's curtain comes a number that sounds really good (Shaw 2018).

In contrast, credible Market approach to appraisal requires reliable, relevant (local and current), and substantive (many) sales data points of similar subject characteristics to solve comparative sales (market) problems. To perform Market approach problems, plant appraisers must compare the same tree and landscaping characteristics sales data (size, species, placement, and condition) of several comparable properties. If that data does not exist or cannot be reliably parsed, you must use another approach (Appraisal Institute 2010).

Hence, the real reason for real estate appraiser discomfort with forming opinions about the value of trees and landscaping. The gap in understanding becomes clearer when you understand the basic principles of the Uniform Standards of Professional Appraisal Practice (USPAP), by which most real estate appraisals are governed. When appraising real estate, appraisers typically default to the *comparative sales approach*. The points of data that are required for tree CREMV must be limited to a narrow geographic area using a large number of current transactions over a compressed period of time in developing a reliable Market value opinion. If such data exists, the subject

will predictably and reliably sell near the market's sweet spot; that is, where supply meets demand in the market venue.

Notably, some important data points about certain real estate improvements are not readily available through a service bureau, thus requiring the specialized knowledge, training, and experience of specialty appraisal experts who know how to develop opinions of value using approaches alternative to Market. Since there are only three basic approaches to value (Market, Cost, and Income), specialty appraisal experts tend to specialize by evaluating the cost data to produce special improvements, or by evaluating the income data that informs the revenue that may be generated by a specialty improvement. Amenity tree and landscape improvements are one such land element where the service bureau market data is quite scarce and where real estate appraisers are often at an extreme disadvantage (unqualified) to form an opinion of value. So, what can the real estate appraiser do? What data points will lead the appraiser to a credible and reliable appraisal result? According to the USPAP, when no market data is available, Cost is a suitable substitute for developing an opinion of value; Cost is good when Market approach to value cannot be performed credibly. Plant appraisers are specialty appraisers who specialize in the cost or income approach to solving the PAL problem.

This begs the question, what is Cost approach in relation to the Market approach anyway? Cost approach to value is a part of the marketplace. Cost represents the production side or supply side of the market spectrum. If Market approach to appraisal is like searching for the sweet spot of value, where the sales transaction data points to the amount of money that can be exchanged where supply meets demand, the Cost approach to value represents the lower end or supply end of the market. Generally, this is

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because suppliers (producers) stop producing if costs go below a profitable level. It is mostly agreed that cost values can be relied upon as representing the lower end of market value spectrum.

Cost approach is reliable and credible when cost data about the relevant characteristics of special property improvements are plentiful, local, current, and reliable. Since all the real estate rule books instruct real estate appraisers to use cost or income approach when they don't have adequate sales comparison data points (like size, species, placement, and condition of trees), the real estate appraiser may use Income approach or Cost approach. In most PAL assignments, Cost will be used (Miller 2015).

Occasionally, real estate appraisers will attempt to use Income approach to appraise amenity trees by using forest timber (stumpage) value or they will quote an irrelevant research paper that does not apply to the appraisal subject's characteristics or anticipated benefits. These attempts at Income approach simply do not adequately answer the amenity plant appraisal problem or question. The appraisal approach to amenity trees and landscaping using Income is certainly far less reliable, even dubious when you consider the differences in anticipated benefits compared to the reliability and credibility of the Cost approach to the amenity tree and landscape problem. Additionally, when it comes to informing the question of value, the USPAP standard of ethics is very clear. Misleading approaches and methods that do not lead to a reliable appraisal result are not permitted.

In one rural Tennessee trespass damage case study, the facts involved the destruction of 15 mature trees on a beautiful park-like residential littoral site. My assignment in the case called for CTLA Trunk Formula appraisal calculations, and the definition of value involved many

landscape design elements. The opposing party chose to use a forest wood products expert to calculate how much money could be generated by the sale of wood products that could have been made from the wood. The problem, of course, is that the owner of the tree never anticipated wood product benefits from a stumpage sale of the subject trees. In contrast, the owner of the trees anticipated, among other things, that he would enjoy watching his grandkids at play under the canopy of the trees for many years into his retirement. The only way to make my client whole was to replace the trees—and that cost quite a bit more than what the big pile of wood products could have been sold for.

In another trial case, *United States vs. Lorance*, I conducted an investigation that called for Cost to Cure Method in a condemnation. This complex appraisal involved a real estate appraiser who asked me to provide a qualitative Cost to Cure appraisal of trees that were lost to cutting. Effort in the appraisal was made to improve the site to its previous condition or better with regard to tree aesthetics and functions. I needed to ascertain how the pre-existing trees contributed to the appearance and aesthetic value of the land as a whole prior to their removal. In this case, I used aerial photography to determine canopy sizes, and I did a qualitative assessment of tree conditions. I also employed analysis of the tree to site suitability as a form of obsolescence. I used our local species rating guide to calculate species obsolescence, and I used the functional use of the site as my guide in developing a replacement landscape architectural design.

The trees in the proposed design plan served as land improvements that would, in time, create much greater value in the future than could have been provided by the subject trees. The subject trees provided the very benefits to the property that were recreated in the designed cure

(such as function, aesthetics, wildlife habitat, and erosion control) and, although it might take 15 years for the trees to mature, the quality, species, and placement of the trees compensated equally for the loss in size at the time of taking. The opposing party hired a Member of the Appraisal Institute real estate appraiser who developed a value using standard real estate appraisal concepts and tried to argue that cost of cure was not an appropriate approach to tree values. The real estate appraiser's argument was rejected outright by the three-judge federal court, and my opinion became the new precedent for tree value in federal condemnation cases (Report of the Commission in *United States v Lorance* 2013).

In most cases like this, where an authoritative opinion about amenity trees is required, USPAP suggests that real estate appraisers seek out the services of a special subject expert, such as a plant appraisal consultant, to contribute to solving complex real estate appraisal problems. Likewise, when the problem to be solved is a real estate market problem, Plant appraisers may need to seek out the services of an REA. In such a situation, neither the REA nor the plant appraiser is an entity unto themselves; they are simply working on individual components to form a collaborative whole. While the Market or Comparative Sales approach to value is an important indicator of what people think things are worth, it is not always the most appropriate way to inform value. In most of the amenity tree and landscape appraisal problems that exist, Market is not the relevant approach. When the analysis of data that informs the Market type approach to value is not capable of reliably and credibly providing a relevant appraisal result, the appraiser has no choice but to use Income or Cost approach.

Professional amenity plant appraisal practice is a valued opinion of worth, and that opinion always depends on a variety of

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elements that are identified by who, what, why, how, and when the opinion is valid. Fortunately for the real estate appraisal community, there is another community of plant appraisers who are supremely qualified to take on the tasks of identifying the relevant elements of the plant appraisal problem. Plant appraisers are well qualified to identify the relevant characteristics of special tree and landscape appraisal problems, they are capable of mining the relevant cost or income data that informs value, and they are competent in forming and communicating reliable and professional amenity plant appraisal opinions within the subject's perceptual context. When it comes to the need for amenity tree and landscape appraisals, and their CREMV, real estate appraisers need professional help from plant appraisers. As the practice of PAL becomes more widely known and accepted by the real estate appraisal community, the demand for the services of plant appraisers will continue to grow (Shaw 2018). 🌱

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Marty Shaw, RCA #470, BCMA, is the author of the Professional Amenity Plant Appraisal Handbook and is the owner of Green Season Consulting in Franklin, Tennessee. Marty has been engaged in arboricultural consulting for over 30 years and performs workshops, speaking engagements, expert witness litigation assignments, and other assignments helping clients to resolve their tree-related issues. Marty is also a real estate appraisal and real estate broker/agent instructor and has been a guest panelist at the Appraisal Institute's Litigation Conference. For more information or to engage, he can be reached at:

P.O. Box 680716; Franklin, TN 37068
Expert@greenseasonconsulting.com
m: (615) 477-7889 • v: (615) 794-4377