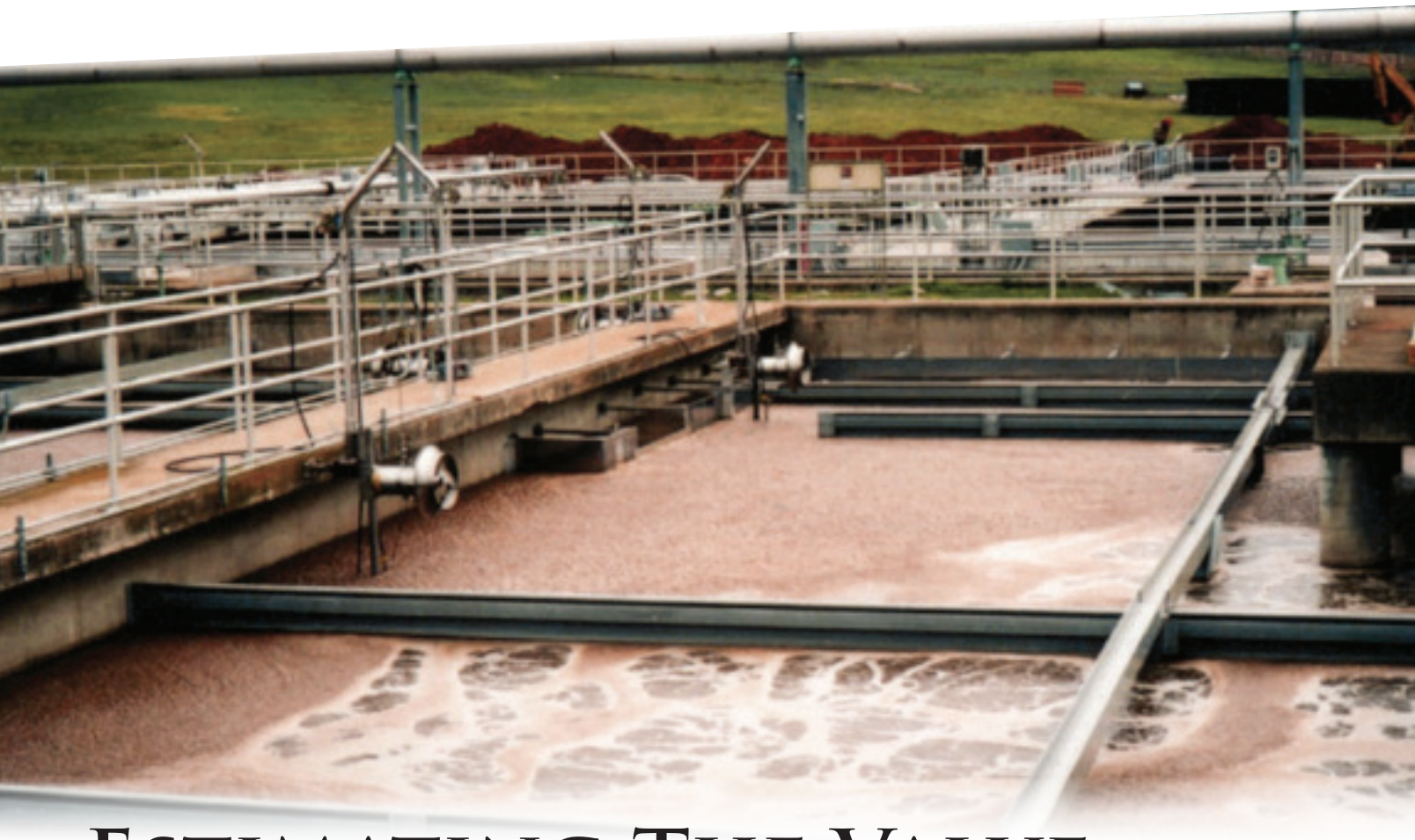

Estimating The Value of an Odor and Noise Easement

When comparables are not available, creative thinking can go a long way…

BY MICHAEL WOLFF

Appraisers are often asked to value pieces of a property, like a narrow strip needed for a roadway widening project or an easement for utilities. Often the value contribution of such pieces is very small, and market extractions via comparable sales are not possible. So how can an appraiser estimate the market value contribution in such situations?

To show how this might be done, a specific case study demonstrates how a different kind of strategic methodology can be used. Although the project discussed below involved appraisal work performed under Arizona eminent domain law and, as such, included relevant discussion regarding the part taken, severance damages and special benefits, only analysis caused by the imposition of the easement into private property is taken into consideration.

Appraisal Assignment

Not long ago, I was engaged by a city to estimate the value impact of a proposed odor/noise easement into private property caused by the expansion of an existing sewer treatment plant. Needless to say, this is not a typical appraisal assignment, and some pretty creative thinking was required.

The city has two sewer treatment facilities. One is an older plant near the center of the community. The other is newer and located near a busy municipal airport in a remote area farther northeast. The newer facility would eventually be expanded to take on the effluent from the older facility, which would be closed. It was the planned expansion of the newer facility that caused the need for the odor/noise easement, which was the focus of my appraisal work.

Property Description

The subject whole property, the area before imposition of the odor/noise easement, consists of 925 acres of open range land, typical of the region. The terrain is primarily flat to rolling, and the vegetation is sparse and consists mainly of grasses and small annuals. Approximately 353 acres (38%) of it is Federal Emergency Management Agency floodplain, which can periodically flow heavily with water and even overflow creek

banks. A few bushes and trees exist along the creek edges. The land is vacant and undeveloped, except for perimeter barbed wire fencing. Current use of the property consists of periodic gravel quarrying, which occurs in the creek and floodplain areas, and cattle grazing. Grazing is done only to support an agricultural property tax classification, which results in a significant property tax reduction. There is not enough plant life or water to support any cattle naturally.

The proposed odor/noise easement area consists of 34.8 acres at the whole property's south end, of which approximately 26.1 acres are within the floodplain, and 8.7 acres of buildable area are outside the floodplain. Its character is typical of the whole property. To the north and east of the easement is an open range land, to the south is the sewer treatment facility, and to the west is an industrial subdivision and airport.

Highest and Best Use

The buildable area is likely to develop industrially in the long run. However, the floodplain area is likely to remain undeveloped, so near term development is not likely. It was estimated that potential buyers are likely to be investors looking for long term value appreciation and/or investors/developers looking for value appreciation and development in the future. Highest and best use was concluded to be "hold for investment."

It was estimated that the imposition of the odor/noise easement would not alter the highest and best use for the following reasons:

1) Surrounding uses will remain unaffected by the proposed easement
2) Drainage patterns and quantities will not change, including the floodplain
3) Infrastructure will remain the same
4) Access will remain the same
5) Industrial/commercial character will not change
6) Vegetation will not be impacted
7) No physical changes will occur in the remainder property or in the odor/noise easement area
8) Splitting and subdivision potential will remain the same
9) Easement will not affect zoning
10) Typical buyers will not likely change
11) Airport noise and activity will not change

Easement Impact Theory

Ideally, appraisers extract property component values from the market place via comparable sales. Appraisers attempting to find the market value equivalence of a particular property feature (good, bad or indifferent), will look for sales of similar properties with the particular feature in question and compare these to similar sales without this feature. The difference, at least in theory, will represent the market value equivalence of the particular component. The primary difficulty of this process is isolating one value element from possibly many hundreds simultaneously at play at the same time. The smaller a feature, the more difficult it is to measure its value contribution.

In this case, it was not possible to find sales of properties with and without odor/noise easements, so alternative methods were needed. To this end, a two-tiered process was used. First, I conducted a series of interviews, the purpose being to elicit views about the proposed odor/noise easement and its market effects. Second, I compared sales of properties near sewer treatment facilities with sales of those that were further away for proximity analysis.

Property Evaluations

For the subject whole property valuation, 22 vacant comparable sales were identified that would useful. From these, an underlying value of $1,300 per acre was estimated. As the proposed easement area has character that is considered typical of the whole property, its value is represented by this amount also.

A total of 15 interviews were conducted, consisting of 14 realtors and one appraiser. Two interviews were conducted over the phone, while the rest were done in person. All interviewees have been in practice for many years. The in-person interviews were conducted at the office of each interviewee, and everyone proved to be helpful and cooperative.

Summary of Interviews

	Easement Impact on Value		
Interviewee	Noise	Odor on Buildable Areas	Odor on Floodplain Areas
1	0%	as much as -25%	0%
2	0%	as much as -25% to -30%	0%
3	0%	as much as -25% to -30%	0%
4	0%	"big" negative	0%
5	0%	investors -20% to -25%; end users -10% to -15%	0%
6	no comment	no comment	no comment
7	no comment	no comment	no comment
8	0%	pre-existing condition; 0%	0%
9	0%	negative, no specific %	negative, no specific %
10	0%	as much as -10%	0%
11	0%	neutral, unless extreme	0%
12	0%	neutral; no more than -10%	0%
13	0%	as much as -10%	minimal, 0%
14	0%	as much as -5% to -10%	0%
15	0%	0% to -15%	0%

In describing the project and its proposed improvements, copies of aerial imagery were shown on which the easements were outlined. I maintained an objective tone in these presentations, pointing out both the positive and negative issues so that each interviewee would not be biased. After discussing both the project and the easements for several minutes, each interviewee was asked several questions relating to value impact. This discussion was designed to ensure their complete understanding of what was being asked of them. The essence of the questioning revolved around whole property value change caused by the imposition of the easement. All the interviewees attempted to place themselves in the shoes of a typical buyer and seller. They tried to fully understand the situation before forming their conclusions. Figure 1 shows a summary of these interviews.

Because of the existing noise already coming from the airport, the interviewees clearly felt that noise would not be a value issue. It is not likely that noise from a sewer treatment plant would ever exceed the level of noise generated from airport flight activity. It was also clear that the interviewees felt the proposed odor/noise easement would have no value effect on those areas within the floodplain. This is reasonable, given the essentially unbuildable character in this area. Current uses would not be affected.

The observations for noise and the floodplain area are logical and make intuitive sense. But the observations for the odor portion of the proposed easement in the buildable area takes a little more thought. This is where the interview process provided help.

Interview Consensus

	Value Impact	
Interviewee	Low	High
8	0.0%	0.0%
10	0.0%	-10.0%
11	0.0%	0.0%
12	0.0%	-10.0%
13	0.0%	-10.0%
14	-5.0%	-10.0%
15	0.0%	-15.0%
Average	-0.7%	-7.9%
Overall Average	-4.3%	
Rounded to	**-4%**	

Figure 2

The longest interviews were with interviewees 5, 8, 13, 14 and 15, who had diversified real estate experience including commercial, in addition to a general business background. In each of these discussions, we explored the situation from several angles, while keeping in mind highest and best use and typical buyers and sellers and their motivations. Figure 2 summarizes these interviews.

Interviewee 15 also made an interesting observation. He suggested that businesses that generate odor/noise themselves might actually seek out lands encompassed by such an easement in order to mask or partially offset their contribution to odor/noise, even though the proposed easement will not actually include or protect them.

Except for those with no comment and the exceptional scenario suggested by interviewee 15, all interviewees suggested neutral to negative value impact.

After due consideration, seven interviews were concluded to be useful for value estimation. There are several ways the interview consensus data could have been quantified. I chose to average all 14 data points equally (7 low and 7 high), which worked out to -4.3%. This was done to more fully take into account the range of opinions.

Sewer Facility Proximity Comparisons

A search was made for large sewer treatment facilities in the region. Ten facilities were found, and from these, I attempted to evaluate market value impact by comparing sales of properties nearby to similar properties are further away. Figure 3 summarizes these findings.

Five of these facilities, including the subject sewer treatment plant, were in remote locations and had no nearby sales activity. Thus, they provided no market value contrasting data. Three of the facilities did not have enough sales that were both near and far to establish a reliable difference based on proximity and therefore provided no market value contrasting data.

Although the data samplings were somewhat small, Comparables 5 and 6 did provide useful contrasting locational information. Value comparisons were based on sale price per square foot of living area, as this best reflects both size and price. In Comparable 5, the property sales used are residential and consisted of homes that are very uniform in character. Five sales were found near the treatment facility and 35 further away.

It was found that sales near the treatment facility commanded approximately 11.5% less value than those further away. In Comparable 6, the property sales used were residential and fairly similar in character, but not as uniform as those for Comparable 5. Three sales were found nearby and six were further away. It was found that sales near the treatment facility commanded approximately 14% less value than those that were located further away.

Comparable 5 suggests a value reduction of 11.5% and Comparable 6 suggests a 14% reduction in value. Comparable 5, having more sales, was given more weight in proportion to the number of sales used versus Comparable 6. Figure 4 summarizes the weighted average value reduction for these two comparables.

Regional Sewer Treatment Facilities

#	Property Comments	Comparables		Underlying Land Use	
		Useful	Not Useful	Residential	Non-Residential
1	remote location; insufficient sales		x		x
2	remote location; insufficient sales		x		x
3	19 far; 1 near		x	x	
4	insufficient sales nearby		x	x	
5	35 far; 5 near	x		x	
6	6 far; 3 near	x		x	
7	remote location; insufficient sales		x		x
8	insufficient sales nearby		x		x
9	remote location; insufficient sales		x		x
10	remote location; insufficient sales		x		x

Figure 3

For Consideration

During these interviews, it was suggested that a sewer treatment facility and its odors would have a greater impact on residential properties than on industrial use properties. The indication that odor is more significant to residential properties is logical and corresponds with other general findings over the years. Thus, it is reasonable to conclude that the -12% derived from the interviews represents the upper limit of value reduction for all property types including industrial. In other words, the impact on industrial properties will not exceed the impact on residential, and in all likelihood would be much less. Further, this suggests that impact amounts greater than 12%, as indicated by some of the interviewees, would not be realistic.

Average Value Reduction From Proximity To Sewer Treatment Facility

Comparable	Mean Value Reduction	Number Of Sales	Total Percent
5	-11.5%	40	-461.8%
6	-14.4%	9	-130.0%
Totals		49	-591.8%
Weighting Factor			49
Weighted Average Value Reduction (591.8%÷ 49)			-12.1%
Rounded			**12%**

Figure 4

There are several issues to be considered in terms of the odor/value impact.

1. The current sewer treatment plant generates odor. So, the issue here for consideration is not the creation of a new odoriferous situation, but instead only an increase to the existing odor amount. Thus, from this viewpoint, value impact is likely to be very small or minimal.

2. In a typical property sale, many features are argued back and forth between a buyer and seller. The seller will tend to emphasize the good and the buyer the bad, each trying to gain a bargaining advantage and each trying to convince the other. The odor easement will become part of the disclosure requirements and typically the buyer will bring it up as an issue worthy of a price reduction. Thus, there is some likelihood that a price reduction will occur for this issue, assuming normal motivations.

3. Sewer treatment facility odor is much more significant to residential properties than industrial ones. Thus, its impact upon industrial value will be relatively less.

4. The sewer treatment facility will be owned and operated by an incorporated city. As such, it is likely that the city will be assiduous regarding maintenance and odor control. Further, as a governmental entity with a public tax base, it should have the resources to take care of any problems, breakdowns or other issues that could occur in the future. Even if these issues were severe, given those resources, the issue of odor would likely be very small.

5. Over the past several decades, the science and technologies associated with sewage treatment have improved and, into the foreseeable future, this trend is likely to continue. Therefore, the issue of odor would likely remain small.

6. For certain odor/noise generating businesses, the proposed easement could be perceived positively in the market place.

Conclusion of Value Impact

In considering the additional noise that would be created by expanding the existing sewer treatment facility, the value impact would not change. Airport noise will likely exceed any noise generated by the treatment facility. Odor value impact in the floodplain area will likewise have no impact upon value. The existing and potential uses, such as gravel quarrying and cattle grazing, will not change.

Both the interview process and the proximity analysis suggest that the buildable area will be reduced in value by the imposition of the odor easement. The proximity analysis, which used actual sales data rather than opinions, suggests a maximum value reduction of 12%; maximum, because value impact on residential properties is likely to be much larger than upon industrial. The interview process suggests a value reduction of 4%. Figure 5 summarizes the final value impact.

Final Value Impact Summary

Description	Percent Impact	Acres	Value Per Acre	Impact Amount
Noise	0%	34.8	$1,300	-$0
Odor, Floodplain Area	0%	26.1	$1,300	-$0
Odor, Buildable Area	-4%	8.7	$1,300	-$452
Total				-$452
Rounded				**-$450**

Figure 5

I concluded that -4% best represents the impact for the buildable area. Each method supports the other. Industrial use impact, as one might expect, is less than residential use impact. If the proximity analysis, which used residential comparisons, derived a smaller impact amount than the interview process, the methodology would appear illogical and flawed and further data gathering and analysis would be necessary.

Michael Wolff

Michael is a real estate appraiser located in northern Arizona and has been appraising since 1985. He specializes in condemnation appraisal and teaches courses in real estate appraisal and Arizona property tax liens. Contact Michael Wolff Appraisal Services at azvaluations@yahoo.com or visit www.azvaluation.webs.com.