

Estimating Setback Value

by David M. Champagne

An article in the December, 1993 issue of *Right of Way* outlined some ideas relating to the documentation of severance damages. Feedback from colleagues seem to indicate that further development and explanation of the mathematical techniques relating to setback adjustments might be helpful to some readers. The following example illustrates before-and-after grid development and the attendant data analyses and presentation.

In this illustration, which involves a hypothetical strip-taking from a residential property, the structure enjoyed 60 feet of setback from the highway right-of-way line in the "before" situation, and this setback of the structure has been reduced to 30 feet in the "after" valuation.

No change in highest and best use is involved, and the effects are not severe enough to facilitate different sets of comparable sales in the two sections of the appraisal. The same four comparable sales are utilized in both the before and the after analysis. Adjustments for site area are based on a constant unit value of \$2 per square foot for sites in the subject neighborhood, and setback adjustments are based on a study of the amenity value of setback in that neighborhood. The problem is estimating just compensation for this taking.

For purposes of illustration, this hypothetical compensation will be

restricted to two items: one, the value of the strip acquired in fee (direct take); and two, indirect damages to the residence, resulting from loss of setback from the highway right of way. It is assumed that the unit values of the site will be the same before and after, thereby eliminating the complication of indirect damages or benefits to the site (as opposed to indirect damages to the structure, related to setback reduction).

In regard to setback, a value scale is presented illustrating typical expectations of the contributory or amenity value of setback. The expectations are that, within a range,

other areas will have different standards.

As with most "textbook" examples, this presentation is simplified to emphasize particular procedures and ideas. For instance, the number of adjustments are minimized, to better focus specifically on the setback factor. It should be stressed that, as with other adjustment factors, a market derived data base is the only appropriate way to support any specific applications. The assumptions for this article are referred to in the preceding paragraph as "typical" expectations because they are the types of assumptions generally

inherent in many appraisals involving setback reductions. Unfortunately, these assumptions seem to be based, in most instances, largely on intuition, rather than empirical data.

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more setback is better. Within a fairly narrow range, a straight line relationship is probably a reasonable approximation. Over a wider range, it would be expected that the marginal amenity value of setback would decrease as setback increases, and that, at some point, further increases in setback would no longer add measurable value (and might even represent a negative), due to increased maintenance, snow removal, general nonconformity, etc. This latter relationship is depicted in table form (Figure 1). The model is purely hypothetical. There may be streets or neighborhoods that this model would approximate reasonably well, while

Factual information to rectify this situation is needed, and, as pointed out by Marion E. Everhart in the Feb./March issue of *Right of Way*, (The Benefits of Studies), appropriate studies are not beyond the reach of conscientious practitioners.

Figure 1 is a table of the expected setback amenity values for the subject neighborhood. The data cover the range from 20 feet of setback, which is the base or zero amenity level, to 70 feet of setback, which has an indicated amenity value of \$10,000 more than the base level at 20 feet of setback. The amenity value does not vary as a straight line relationship, however, but decreases on a marginal basis as

setback becomes larger. As setback increases from 20 to 30 feet, a \$3,000-value increase is noted.

The value increase from 30 to 40 feet is \$2,500; from 40 to 50 feet, an increase of \$2,000 is noted, and so on, with the 60- to 70-foot increment at \$1,000.

This information becomes the basis for making setback adjustments in the grids, both before and after the strip acquisition for highway widening.

Looking at Figure 2, "Grid Valuing Subject Before Taking," it can be noted that the illustration is restricted to two adjustments: site size and setback distance. The site size adjustments are based on a straight line contributory value of \$2 per square foot of land.

The setback adjustments are based on the marginal amenity value, relative to the subject's 60 feet of depth from the right-of-way line to the residence. Sale #1 has a residence setback of 70 feet, compared to the subject setback of 60 feet. The neighborhood study indicates that the value of this 10-foot increment (from 60 to 70) is \$1,000, therefore, the adjustment is minus \$1,000.

For another example of the setback adjustment, Sale #4 has 20 feet of setback, compared to the subject's 60 feet; the study indicates a plus \$9,000 adjustment is warranted for this difference (going from 20 feet to 60 feet is a \$9,000 increment). Sales #2 and #3 are adjusted using similar reasoning.

In Figure 3, "Grid Valuing Subject After Taking," the subject now has 30 feet of setback, rather than 60 feet as before. Now the adjustment for setback on Sale #1 reflects the marginal amenity value of setback between 30 feet and 70 feet, which leads to a minus \$7,000 adjustment (\$10,000 at 70 feet, minus \$3,000 at 30 feet, establishes the dollar amount of the adjustment).

Similarly, in comparing the subject to Sale #4, the marginal dollar difference for 30 feet to 20 feet is \$3,000, leading to a plus \$3,000 adjustment. Sales #2 and #3, are derived similarly.

What this example illustrates, in "textbook" fashion, is a system to analyze setback enhancement that can be related to the thinking and preferences of market participants, and further, to facilitate a consistent,

reasonable pattern of adjustments among the sales and the two subjects (one before and another after). It requires a basis in factual data, as do all adjustments, and it also typically requires, in real-world activity, a strong judgment component. The result

should be a system to estimate just compensation for setback variances that is credible, internally consistent and fair to all the parties involved. This illustration shows that the property has suffered a total value loss of \$10,800. Of this, \$4,800 is the value of the land

Figure 1
Table of Setback Amenity Values for Subject Neighborhood

<u>Setback</u>	<u>Marginal Amenity Value of Additional 10 feet of setback</u>	<u>Total or Cumulative Setback Amenity Value</u>
20 feet	0 (base)	--
30 feet	+\$3,000	+\$3,000
40 feet	+\$2,500	+\$5,500
50 feet	+\$2,000	+\$7,500
60 feet	+\$1,500	+\$9,000
70 feet	+\$1,000	+\$10,000



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Setback Value

Figure 2
Grid Valuing Subject Before Taking
(Setback of 60 Feet)


Subject	Sale #1	Sale #2	Sale #3	Sale #4
	\$102,300	\$97,200	\$89,300	\$94,400
Lot Size 12,000 sq. ft.	12,000sf no adj	10,000sf +\$4,000	9,000sf +\$6,000	13,000sf -\$2,000
Improvements size & cond 1,500 sq. ft.	1,500sf no adj	1,500sf no adj	1,500sf no adj	1,500sf no adj
Residence Setback from right of way 60 feet	70 feet -\$1,000	60 feet no adj	30 feet +\$6,000	20 feet +\$9,000
Net Adj	-\$1,000	+\$4,000	+\$12,000	+\$7,000
Indicated Value	\$101,300	\$101,200	\$101,300	\$101,400

taken (2,400 square feet x \$2 per square foot), and \$6,000 is due to the loss of the amenity value of 30 feet of setback (the marginal value of going between 30 feet and 60 feet). This \$6,000 is typically characterized as indirect or severance to the structure. Note: for those who enjoy debating appraisal theory, consider whether loss of setback constitutes functional or external obsolescence. In preparing appraisals involving losses in setback, a variety of real-world problems can occur. But, if the appraiser recognizes from the onset of the assignment that investigation of setback is a major concern, this problem should be no more perplexing than many other problems encountered.

A first step is to accurately record the setback of all sales researched as potential comparables. It may be helpful to discuss attitudes on this factor with parties to the


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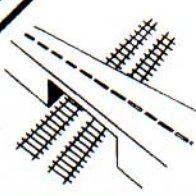
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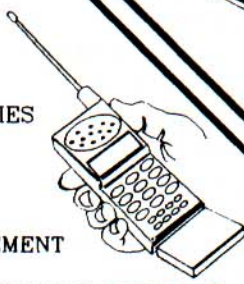
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transactions. Sometimes, only limited data, such as one or two sets of paired sales, will be available, and refinement into marginal increments will be conjectural at best. This defect might eventually be overcome by developing a bank of data with some general application. Converting amenity values from dollar amounts to percentages related to the structure value can help in generalizing the data. Transposing data from one area to another requires suitable caution, however.

For instance, there may be areas or neighborhoods where little or no recognition is given to variance within an acceptable range, with only more extreme differences meriting an adjustment. Other neighborhoods may be quite sensitive.

Occasionally, the effect of setback will be modified by, or related to, other factors such as vegetative screening, topography, and traffic levels and patterns.

As might be imagined, there are many problems of eminent domain acquisition that require creativity in the interpretations and application of raw data. A consistent, orderly relationship among the comparables and the subjects (before and after) should be formulated. A factual data base of the best information reasonably available is the beginning point for valid severance damage estimates. What this article has attempted to illustrate is one possible approach to the problem. □

David Champagne has worked in right-of-way acquisition with the New York state Department of Transportation since 1965. His background includes appraisal and appraisal review functions for highway construction projects. Mr. Champagne is a state-certified appraiser and holds a master's degree from the College of Environmental Science and Forestry in Syracuse, N.Y. He is a member of IRWA Chapter 18.

Figure 3
Grid Valuing Subject After Taking
(Setback of 30 Feet)

Subject	Sale #1	Sale #2	Sale #3	Sale #4
	\$102,300	\$97,200	\$89,300	\$94,400
Lot Size 9,600 sq. ft.	12,000sf -\$4,800	10,000sf -\$800	9,000sf +\$1,200	13,000sf -\$6,800
Improvements size & cond 1,500 sq. ft.	1,500sf no adj	1,500sf no adj	1,500sf no adj	1,500sf no adj
Residence Setback from right of way 30 feet	70 feet -\$7,000	60 feet -\$6,000	30 feet same	20 feet +\$3,000
Net Adj	-\$800	-\$6,800	+\$1,200	-\$3,800
Indicated Value	\$90,500	\$90,400	\$90,500	\$90,600

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