

eration, locally and Federally, might be mutually advantageous. The name Highway Research Board obviously suggests investigation and exploration; locally, express highway builders, planning authorities, housing developers, and other interested groups might together turn

out both ideas and accomplishments pointing toward form and order as against potential disorder and confusion in patterns of city growth and expansion. The opportunities seem tremendous; I hope they can be captured.

ESTIMATING DAMAGE CAUSED BY LOSS OF ACCESS RIGHTS

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Estimating damages caused by the loss of access rights presents problems not ordinarily encountered in estimating the value of properties in their entirety.

Evaluation is not an exact science. The economic laws that govern value admit of too numerous exceptions. What is right today may be wrong tomorrow; what applies here does not necessarily apply elsewhere.

It is recognized that value is largely dependent on judgment, but the differences in judgment must not be due to a misunderstanding of the theories that govern value or of the formulas that are used in estimating them.

Much has been written on the theory of appraising but little on the application of these theories. It is practical appraising in which we are interested. However, a knowledge of the theories that govern value is necessary, so it is well that we hastily review some of the more important ones in order that there be no misunderstanding when reference is made thereto.

The purpose of an appraisal is the determination of an action. As the action to be taken by a right-of-way division is most generally

the purchase of a property, the value to be estimated can be based upon but one concept of value, that is, market value or value in exchange, and our courts of equity have so held.

Property is the right of use. Anything that conveys rights and can be held under separate ownership is property. It is these rights which give it value and which we appraise. Destroy these rights and you destroy value; destroy value and you create damage. A damage is, a reparation in money for an injury sustained.

These rights to have value must first have utility. Utility is the capacity to satisfy human wants. However, the number of the wants which a property is capable of satisfying and the importance of these wants do not set value.

Value is determined by the intensity of human desire for unsatisfied wants and is controlled by the relation of the demand to the available supply. When demand exceeds supply you have value and when supply exceeds demand you have no value.

To have the capacity to satisfy human wants, and thus have utility,

a property must have accessibility. Accessibility is a most important attribute in the development of value. In illustration of the point: What will you give for a square mile of the surface of the moon, or what would you pay for a square mile of the bottom of the ocean? There capacity to satisfy human wants is nullified by their inaccessibility. Accessibility is a fundamental right in the creation of value. Totally destroy accessibility and you totally destroy value; impair accessibility and value will be impaired. These conclusions will bear further investigation.

Our courts in rendering decisions in cases of eminent domain have not only stated that market value be used as a basis for estimating value and damage but are almost unanimous in saying that the damage caused by the partial taking of the rights of property can be best calculated by estimating the market value of the property before the taking and then estimating the value after the taking, and by subtracting the latter figure from the former, the difference between these two figures will show the value of the rights acquired and the damage to the remainder.

It is an excellent formula. If you make no mistake in the two estimates there is no question but what you have produced a logical answer. This formula, however, is not as simple to work as it is to state. The first estimate which is the value before the taking is no different from an ordinary appraisal assignment where the entire property is to be appraised. However, this estimate is very important for you cannot estimate damages to a property unless you know the value of the property before the damage occurs.

In reviewing appraisals it is not uncommon to find estimates of damages to remainder lands in excess of the value of the entirety. The

appraisers who are guilty of such conclusions could avoid this error by first estimating the value of the entirety. The axiom in physics "The sum of the parts cannot exceed the whole" applies in appraising too.

The second estimate which is the value of the remainder after the taking is at times difficult, it is true, the reason being our lack of available data. Such data are often most difficult to acquire. There is no question but more research covering the effect of partial taking and the damage caused by loss of access rights on remainder lands would be of untold assistance to appraisers. Before-and-after appraising is an excellent formula but it can cost right-of-way purchasers much money unless properly applied.

In a recent condemnation trial covering the taking of a small amount of acreage and some access rights, a witness who appeared for the owner of the property, a rather homespun type of character with a high degree of the common touch (and this is said in the most complimentary way), was on cross examination asked if in making his estimate of the damage caused by the taking, he had used a before-and-after approach to value. He replied that he did. When asked to explain the procedure and how he arrived at his estimate, in his most inimitable manner, his words were to this effect:

"The place was worth \$5000 before you took some of the land and the road that went with it. When you take the road the place is worthless because you cannot get to it. Deduct zero from \$5000 and you still have \$5000. Therefore the damage is \$5000."

There was no question but what this appraiser had fairly estimated the value of the property. There was no question but what he had used a before-and-after method of approach, and he was logical in his

deduction as far as it went. The award of the jury was well below \$5000. The Government proved that a new access could be established that was as serviceable as the one destroyed for about \$1000.

The statement was made that to totally destroy access is to totally destroy value, but fortunately for economy's sake in the building of highways seldom is access totally destroyed and, when it is, it most often can be re-established at some other point. From the verdict of the jury in the case just recited, are we not safe in concluding that the cost of re-establishing an access at some other point tends to set an upper limit where the new access is as acceptable as the one destroyed?

Your attention is called to the fact that there are times when the cost of establishing a new access exceeds the value of the remainder land. In such an event it would certainly be erroneous to use such cost figures in estimating the damages. The following case is offered in point:

A parkway of limited access was to be built. The taking isolated some 10 acres on one side of a right-of-way. No outlet was to be provided for this 10 acres. The isolated area was contiguous only to large tracts which had access to other roads, but these roads were at a great distance from the isolated 10 acres. To have purchased an easement across the adjoining lands and constructed a roadway across same would have cost \$4500. This would have been most impractical as the total value of the area being isolated before the severance was but \$2000. The upper limit of damages in all cases is the value before the taking.

It is not conclusive that because an area of land has been isolated the damage equals the value of the property before the isolation.

In the case previously recited

it was not necessary to pay \$2000 for the 10 acres in question. This remainder still had a market value. Though not as great as before the taking, although its utility as farm land had not been impaired other than by accessibility, the fact that the owners of the contiguous lands were willing to purchase it and give it an outlet restored a portion of the damage that was caused by the isolation. The damage was estimated from the highest price these owners of the adjoining lands offered to pay for it. This amount, which was \$1000, was subtracted from the value before the taking, left a remainder of \$1000, which is the damage caused by the loss of the original access right.

The loss of an access right is not conclusive evidence of damage. It is necessary that such access right lend value to the property.

During the period of the War an appraisal was made of a property which was located some 20 miles from one of our large cities. It consisted of 500 acres. About 50 percent of this land was in cultivation, the balance woodlands. It fronted some 1500 feet along a modern highway and extended southerly to the right-of-way of a railroad. It was bisected at about the center by an all weather stream running from north to south. The cultivated lands, dwelling, dairy barns and stables were on the easterly side of the stream. At a point along the southerly border of the property contiguous with the railroad right-of-way and some distance to the west of the stream was a large sign marking a flag stop for the railroad. Starting at a point near this sign was a woodland road or trail leading through the westerly portion of the property across the stream to the easterly and improved side of the property. It was necessary that the water supply for a nearby Army camp be materially increased. A dam was constructed

across the stream at the most southerly line of the property. A reservoir covering some hundred acres or more was formed, extending from the southerly to the northerly lines and was from 300 to 500 ft. wide. It was necessary that the Government acquire title to the inundated area. When the right-of-way for the railroad was acquired in 1870 from the subject property, the railroad agreed to maintain into perpetuity a flag stop at the point mentioned, and had agreed that all passenger trains other than express could be stopped at this point on request. When the reservoir was formed the access road leading from the flag stop was made useless. Along with the claim for the area inundated was a claim for damages caused by this loss of access. On inspection of the property it was found that this roadway had evidently not been used for some period of time. The iron gateway at the entrance from the property into the right-of-way had almost rusted away; the roadway had largely grown up in brush; fallen trees in a high degree of decay lay across it at intervals; the manager of the farm stated that in the 17 years he had been in charge of the place this flagstop had not been used; this was confirmed by the railroad. There was no question but the right of access existed, but any value that it might have lent to this property at one time was not destroyed by the reservoir but rather by the development of the automobile and the modern highway. This case was settled but without payment for this portion of the claim.

Damages caused by the loss of access rights are largely dependent on the utility of the property. Let us take a particular example:

The street is one block long. Access is from only one direction. Three houses have recently sold in this block at prices comparable to sales of other comparable properties

on adjacent streets that can be reached from four directions. The lots in the modern subdivision are most often reached by circuitous routes and cul de sacs are the common thing. These subdivisions are developed for the purpose of making profit and if cul de sacs and circuitous access were damaging, do you think these subdividers would have deviated from the old rectangular form of dividing land?

It is not meant to say that residential land cannot be damaged by the establishing of cul de sacs and circuitous routes. The effect of circuitous routes on dwelling properties depends largely on just how circuitous the routes may be.

Isolate a dwelling house of the better type from a neighborhood to which it is suited by the change of access and place it, figuratively speaking, on the wrong side of the railroad tracks and there is no question but what you will damage it. As to whether this damage is compensable will depend largely on the jurisdiction in which you are appraising. Our courts are by no means in agreement as to what is compensable.

The effect of the cul de sacs causes little damage to agricultural and other rural lands provided they do not create a too circuitous approach to the property.

However, the effect on commercial properties is another thing entirely. Commercial properties derive their value from their productive capacity which is dependent largely on their accessibility to the general public. Build a better mousetrap than your neighbor and the world will beat a pathway to your door may be true, but the fact remains that few can build the better mouse trap, and they are forced to compete for their share of business not only by price and service, but location, which is accessibility. Impair the accessibility of commercial properties to

TABLE 1. ESTIMATE BEFORE THE TAKING

INCOME		
Ground rental, 480,000 gallons at 1½¢		\$7,200
Rental on improvements, \$20,000 at 12%		<u>2,400</u>
Total gross annual return		\$9,600
EXPENSES		
Taxes, \$45,000 assessment at \$30 per thousand	\$1,350	
Insurance:		
Fire, \$20,000 at 50¢ per hundred	\$100	
Liability	<u>115</u>	215
Management, 5% gross rent		<u>480</u>
Total expense before depreciation		<u>\$2,045</u>
NET INCOME BEFORE CHARGES FOR DEPRECIATION		\$7,555
Charge for depreciation,		
5% on building \$15,000	\$750	
Charge for depreciation,		
10% on equipment \$5,000	<u>500</u>	
Total		<u>1,250</u>
EFFECTIVE NET INCOME		<u>\$6,305</u>
\$6,305 capitalized at 8%		\$78,812

the public on which they are dependent and unquestionably you impair their value.

Now, as to the yardsticks for measuring these damages. It is with regret that it must be admitted that on certain types of properties we are dependent largely on judgment. Some help can be had, however, by the study of the effect of such losses on other comparable properties, and by a process of analogy reach a reasonable conclusion. There is definitely a great need for a study of actual cases where partial rights of properties have been taken for right-of-way purposes to determine if, when, and how damages they are.

As before stated, the cost of restoring a lost access can be used as control in making the estimate of such damages, such cost tending to set an upper limit of such damages where the access restored is as acceptable as the one destroyed.

Such damages to properties that derive their value from their rental income can be estimated with a high degree of plausibility by calculating the probable loss of rental and capitalizing it. The following is an interesting calculation along this line:

This property is located in the immediate southeasterly area of two intersecting streets; one running north and south which we will call "A" and one running east and west which we will call "B". It is a level tract of land containing an area of 10,000 sq. ft. with a one hundred foot frontage on each street. This corner is about five miles from the commercial center of a large city. Street "A" running north and south is the main artery from the center of the city north. It is largely used by transients and serves a large residential area to the north. This street carries a volume of traffic amounting to about

TABLE 2. ESTIMATE AFTER THE TAKING

INCOME		
Ground rental, 336,000 gallons at 1½¢		\$5,040
Rental on improvements, \$20,000 at 12%		<u>2,400</u>
Total gross annual return		7,440
EXPENSES		
Taxes, \$40,000 assessment at \$30 per thousand	\$1,200	
Insurance:		
Fire, \$20,000 at 50¢ per hundred	\$100	
Liability	<u>115</u>	215
Management, 5% gross rent		<u>372</u>
Total expense before depreciation		<u>\$1,787</u>
NET INCOME BEFORE CHARGES FOR DEPRECIATION		\$5,653
Charge for depreciation,		
5% on building \$15,000	\$750	
Charge for depreciation,		
10% on equipment \$5,000	<u>500</u>	
Total		<u>1,250</u>
EFFECTIVE NET INCOME		<u>\$4,403</u>
\$4,403 capitalized at 8%		\$55,037

30,000 cars per day. Street "B" running east and west is largely used for commercial purposes and by industrial workers who live in a moderate priced residential area to the west. This street carries a volume of 35,000 cars per day. This corner was developed as a gasoline service station and enjoyed a lucrative business. Just south of this corner at a distance of about 200 ft. was a railroad crossing serving the industrial area to the east. This spur track was at grade level and was heavily used. The congestion that existed in this section at times can readily be seen. It was decided to erect a viaduct running along street "A" across this spur track and across street "B". It was necessary that some 20 ft. be acquired along both sides of street "A" to provide a necessary outlet for those properties that would be left below the

level of the viaduct and to permit a percentage of the traffic moving along street "A" to turn into street "B".

The subject property was developed as a gasoline service station. There was no question but what it was developed to its highest and best use, and it was necessary to base the estimate of value on this utility. The problem is what are the damages caused by the loss of the access rights in this case?

This service station was owner occupied. If this owner charged himself a rent for the property it is not known, nor is it important. The gasoline sales at this station average 40,000 gal. per mo. The rental for service stations is based on the volume of gasoline sold. Other sales tend to keep in ratio to this volume and it is not necessary in estimating a rental of this type to determine the volume of

other products and services sold. Rents on gasoline service stations start at about one cent per gallon of sales and extend to one and one-half cents. You will find this to be largely true in most sections of the country. As the volume of sales increases the rate increases. A

had been provided along the easterly side of street "A." This volume was found to be about 7,000 cars per day. As the volume of traffic was to be cut approximately 30 percent it is reasonable to assume the volume of sales will be cut in like amount.

In conclusion it is wished to

TABLE 3. RECAPITULATION

Value before the taking	\$76,812
Value after the taking	<u>55,037</u>
<i>DAMAGE CAUSED BY THE LOSS OF LAND AND ACCESS RIGHT</i>	\$23,775
Cost of restoring concrete apron and moving certain items of equipment	<u>500</u>
TOTAL DAMAGE OF ALL KINDS	\$24,275

station that can sell 40,000 gal. of gasoline per mo. is classed as a "Grade A" location and will usually rent for the top rate. This is ground rent. Additional rent is dependent largely on the type of improvements with which the property is developed. The improvements to this property, including equipment, cost \$20,000. A fair rental on these improvements, let us say, is a gross return of 12 percent. (See Table 1, p. 40; Table 2, p. 41; Table 3.)

To estimate the damage to the remainder, the before-and-after approach is used, a capitalization approach being used for each estimate.

This service station before the taking enjoyed a sales volume of 40,000 gal. per mo. with a traffic volume moving in four directions of 65,000 cars per day. It is not reasonable to assume that this location could maintain this volume with 21,000 vehicles moving north and south no longer available. It is true that a percentage of the traffic moving north along street "A" which had always turned into street "B", would turn into the access road which

emphasize:

That when accessibility is destroyed it is seldom that it cannot be re-established;

That the cost of re-establishing such access tends to set an upper limit of damages where the re-established access is as acceptable as the one destroyed;

That before a damage can occur to a property because of the loss of an access right it is necessary that the access in question had lent value to the property as a whole;

That because a remainder land has been isolated it is not conclusive that the damage is equal to the value of such area before the taking of the access; it is probable that it has value to owners of contiguous property;

That the best method of estimating damages regardless of cause is the formula known as the before-and after approach to value.