Research into the Value of Landlocked Right-of-Way Parcels

KARL S. ALBRINK and JOSEPH F. COBBS, Ohio Department of Highways

This paper reviews a study of land areas landlocked by the western half of the Ohio Turnpike. The study was made by the Ohio Department of Highways in cooperation with the Bureau of Public Roads and involved 168 agricultural and 51 residential tracts of land. The properties discussed were landlocked in 1953-54, and research on the after situation began in 1958 and extended into 1962. Because of the widely separated interchanges, general benefits affecting adjacent properties are felt to be held to a minimum.

The newly developed schematic diagrams used by the research team to show visually the owner's action pertaining to landlocked lands as it relates to size, shape, and number of abutting owners are presented to establish that a large variance of opinion could be supported and an ultimate "after value" should be determined by experienced appraisers using research information as part of their basic inquiry only.

• A BY-PRODUCT of almost any fully limited-access highway is the isolation of adjacent tracts of land left without legal means of access to a public street or road system. The potential loss in value of these so-called landlocked parcels, both real and theoretical, plays a significant role in determining the location of a highway and the over-all cost of the facility. Inasmuch as the normal basis of payment to a landowner for property taken is the difference between before and after values of the residue of the property, it can readily be seen that both before and after values are equally important. The appraiser in determining these values looks basically to the market for guidance; market data relating to the before values are usually conveniently available. It is the after value of the landlocked parcels that presents the most difficulty. The market here is usually restricted to areas that have had similar highway improvements and where sufficient time has elasped for a bonafide market to be established; that is, a sufficient number of sales that can be relied on for use by the appraiser to predict values of other landlocked areas.

The Ohio Department of Highways has recently completed a land economic study of the areas surrounding the western half of the Ohio Turnpike. The area (Fig. 1) extends along 105 miles of the Turnpike from the Ohio-Indiana State line, traversing six counties, to the Sandusky-Erie county line. There were a total of 537 parcels having remainder tracts after completion of the Turnpike in the fall of 1955. Of this total, there were 168 agricultural and 51 residential tracts of land that were landlocked. Research on the after situation began in 1958 and extended into 1962. Information obtained during the study was recorded in case histories like those in Figures 2 and 3. Data for the preparation of case history information (such as size of the parcel, appraised value of land and improvements, size of tract purchased for right-of-way, size of remainder tracts, and the breakdown of total acres in the various types of land use) were collected from the Ohio Turnpike Commission's records. Property maps were obtained from the County Engineer's Office. Aerial photographs of the subject properties before

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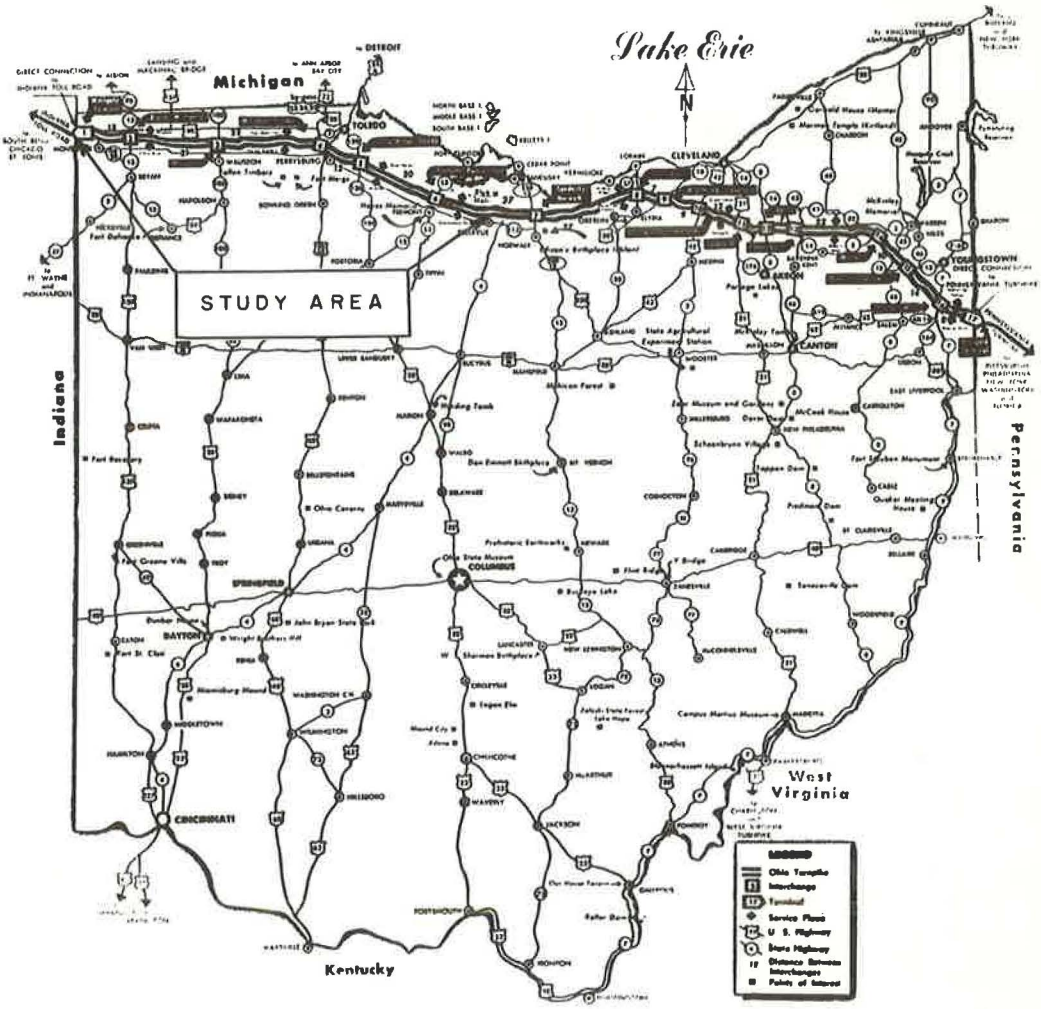


Figure 1. Study area along Ohio Turnpike.

construction of the Turnpike were obtained through the Agricultural Stabilization Committee, Washington, D. C. The Aerial Engineering Section of the Ohio Department of Highways photographed the completed Turnpike to show the after situation. The before aerials were taken in 1950 and the after in 1960. Information for present situation was obtained through a personal interview with the present owner and a review of the title and sale information available at local county courthouses.

Factual information obtained on properties sold after the building of the Turnpike is the basis on which the after values of landlocked areas were established. Comparison of the values developed was done through computation of a "percent of recovery." The percent of recovery is the proportion of the before value that the land regained as evidenced by later sale, expressed as a percentage. It is computed by dividing the selling price, multiplied by 100 by the before value of the landlocked area. The after value used in this comparison was generally considered to be the dollar amount received when a tract was sold. The appraised value of the entire parcel, adjusted for time differential and changes in real estate values to the sale year, was used as a basis for arriving at the adjusted before value. Agricultural parcels were adjusted by use of the

Before Construction		Land	After Construction			Type	Sold	Bought	Present Situation				
Land Use	Acres	Taken	Sev.	Isol.	Lkd.	Acc.			Sev.	Isol.	Lkd.	Other	Total
Cultivated	70	8	23		39		39		23				23
Pasture													
Woods	8				8		8						
Waste													
Other													
Homesite	2		2						2				2
Totals	80	8	25		47		47		25				25

Appraised "Before" Value (19 52)		Computation Of Percent Of Recovery					
		Category	Sales			Adjusted	Percent
			Acres	Price	Year	Appraised Value	Recovery
Land	21,650	Severed					
Buildings	17,184	Isolated					
Total	38,834	Landlocked	47	13,000	1955	19,360	67.1

Influencing Factors:

A. **The owner is retired. He rented-out the land "before", but lived on the farm.**

B. **The landlocked parcel was sold to an abutting owner of which there were three.**

C. **The severed land continues to be tenant operated. The buildings are vacant.**

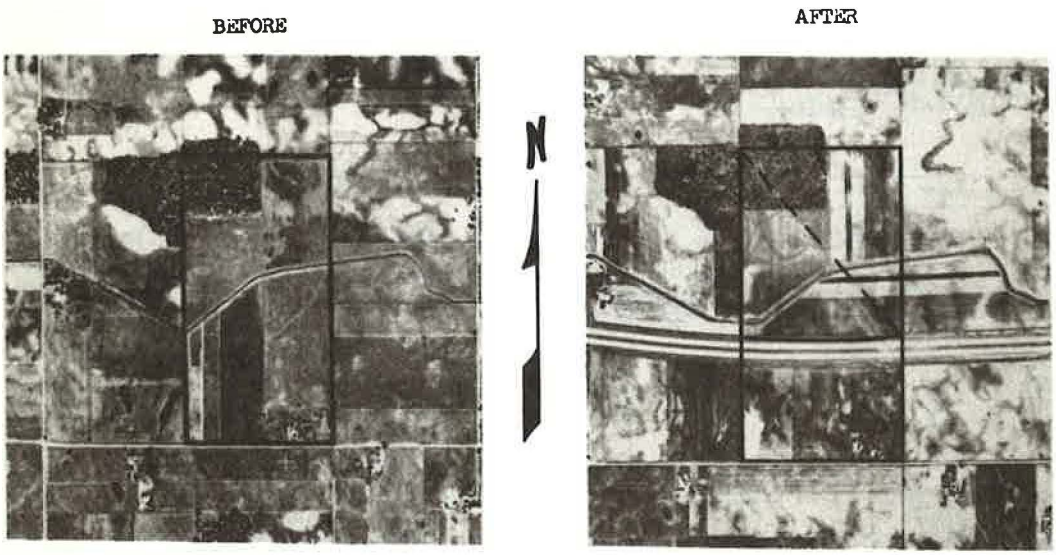
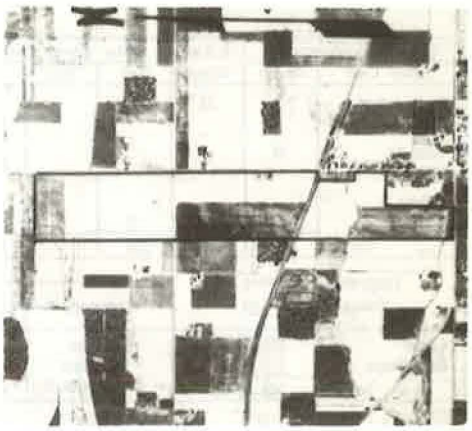
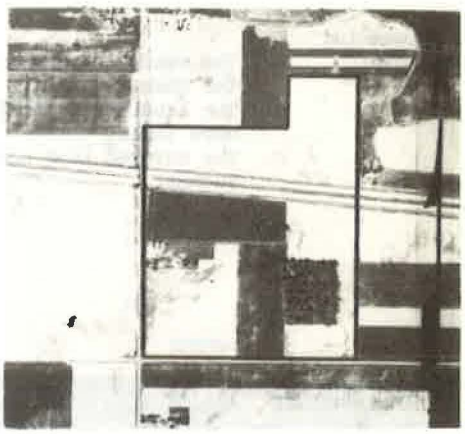


Figure 2. Case history, parcel 50, Fulton County.

Parcel № 12			County	Fulton		
Appraised Value Before (1953)			Land	24,200		
			Buildings	3,200		
			Total	27,400		
Before Construction		Land	After Construction			Type
Land Use	Acres	Taken	Sev.	Isol.	Liked.	Acc.
Cultivated	222.0	8.9	192.3	20.8		
Pasture						
Woods						
Waste						
Other						
Home Sites	1.0		1.0			
Totals	223.0	8.9	193.3	20.8		
Owner Opr'd. Rented Out	X		X	X		
Remarks: Appraised value is for 80 ac. only. No major changes other than fence changes.						



Parcel № 13			County	Fulton		
Appraised Value Before (1952)			Land	31,400		
			Buildings	19,246		
			Total	50,646		
Before Construction		Land	After Construction			Type
Land Use	Acres	Taken	Sev.	Isol.	Liked.	Acc.
Cultivated	96.0	11.8	58.2		26.0	T
Pasture						
Woods	7.0		7.0			
Waste						
Other						
Home Sites	2.0		2.0			
Totals	105.0	11.8	67.2		26.0	T
Owner Opr'd. Rented Out	X		X		X	
Remarks: Owner has retired. Also owns Parcel 15 (272.7 ac.). Son does farming. No livestock raised now.						



Parcel № 14			County	Fulton		
Appraised Value Before (1952)			Land	35,200		
			Buildings	17,029		
			Total	52,229		
Before Construction		Land	After Construction			Type
Land Use	Acres	Taken	Sev.	Isol.	Liked.	Acc.
Cultivated	100.0	12.5	51.2		24.0	T
Pasture						
Woods	18.0	5.0	7.0		6.0	T
Waste						
Other					12.3	T
Home Sites	2.0		2.0			
Totals	120.0	17.5	60.2		42.3	T
Owner Opr'd. Rented Out	X		X			
Remarks: Temporary access through neighbor to landlocked tract. Rents-in 80 acres since turnpike. Some soil sold for fill.						

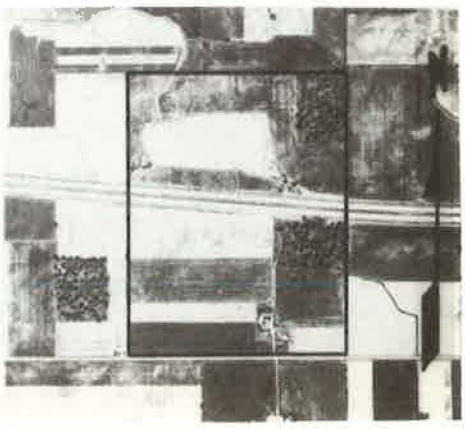


Figure 3. Case histories, three parcels, Fulton County.

Ohio Farm Real Estate Price Index calculated by the U. S. Department of Agriculture. Residential properties were adjusted using Boeckh's Building Costs Index. Further adjustment became necessary when buildings remained on the residue.

As an example, the case when only a portion of the property is sold and further adjustments are required is given. If the property had buildings and a portion was sold separately, the question arose as to what portion of the building values should be allotted to the land to determine the before value of the area sold. If the building remained on the unsold residue and a large portion of the original farm was being sold, it would not be realistic to allocate all the building value to the land, for this would leave too low a valuation on the buildings left. By the same line of reasoning, allotting none of the building value to the land would leave a high valuation on the buildings.

Case histories were reviewed and it was found that 48 owners, or 11 percent, of the original farms either had sold the residence and homesite separately from the productive land or were cash renting the dwelling to one tenant and crop renting the land and service buildings to another. There were 12 farms on which the homesite was sold, and 36 farms where the homesite was rented separately. Table 1 gives the average percent of recovery in the subject counties. These counties have been grouped as to relative distance from the employment center. The rate of return from the dwelling appeared to vary with the proximity to the center of employment.

Table 2 gives for those farms where the homesite was rented out the percent of return based on the appraised value. This table shows where the percent of return is

TABLE 1

PERCENT OF RECOVERY OF STRUCTURES AND HOMESITES WHEN SOLD SEPARATELY FROM THE LAND, OHIO TURNPIKE, 1961

Counties	Number of Sales	Sale Price ($)	Appraised Value ($)	Recovery (%)
Lucas-Summit	3	50,672	33,581	151
Wood-Sandusky	6	35,781	41,197	87
Williams-Fulton	3	24,787	41,739	59
Total	12	111,240	116,517	95

TABLE 2

ACTUAL RATE OF RETURN IN RELATION TO FRACTIONS OF APPRAISED VALUE

County	Rate of Return (%) to Appraised Value of					
	100	90	80	70	60	50
Williams	4.8	5.3	6.0	6.9	8.0	9.7
Fulton	5.4	6.0	6.8	7.7	9.0	10.8
Wood (Lucas)	9.6	10.6	12.0	13.7	16.0	19.2
Ottawa	7.1	7.8	8.8	10.1	11.8	14.2
Sandusky	6.2	6.8	7.7	8.8	10.3	12.4
Avg.	6.1	6.9	7.7	8.8	10.3	12.3

equal to the net income before depreciation, divided by the appraised value (adjusted to 1961), multiplied by 100. Tables 1 and 2 together show the full value of the farm residence should not be deducted from the appraised value of the farm before arriving at a value per acre for the land. It was concluded that the percent of the appraised value which should be allotted to the productive land varied with the counties. In Williams and Fulton Counties, 50 percent of the appraised value of the residence and homesite was allotted to the productive land, 40 percent was allotted in Ottawa and Sandusky Counties, and 10 percent in Lucas and Wood Counties. In other words, 50, 60, and 90 percent, respectively, of the appraised value of the residence was allotted

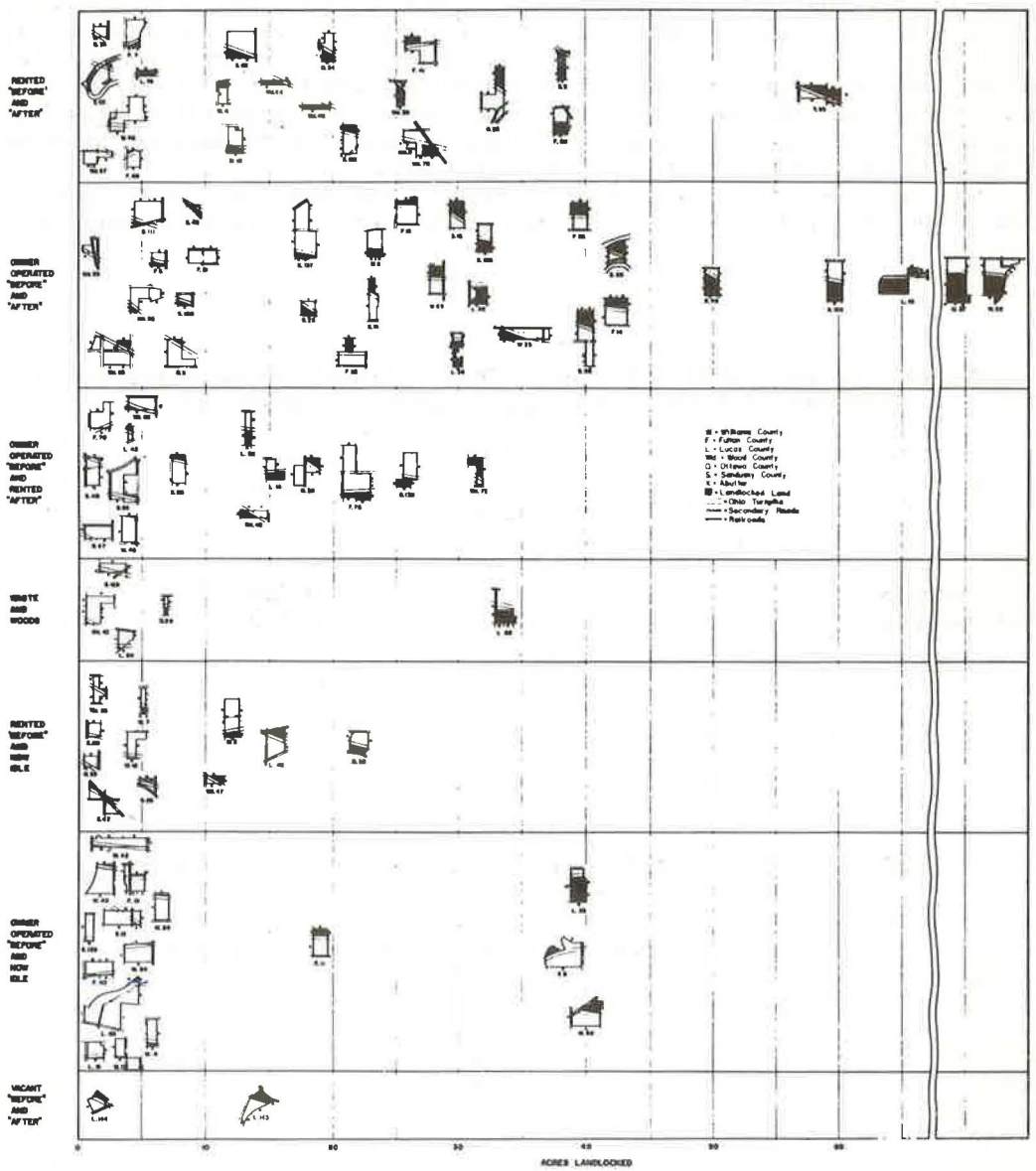


Figure 4. Before and after uses of landlocked tracts not sold and their corresponding size to entire parcel, for all parcels 10 acres and over.

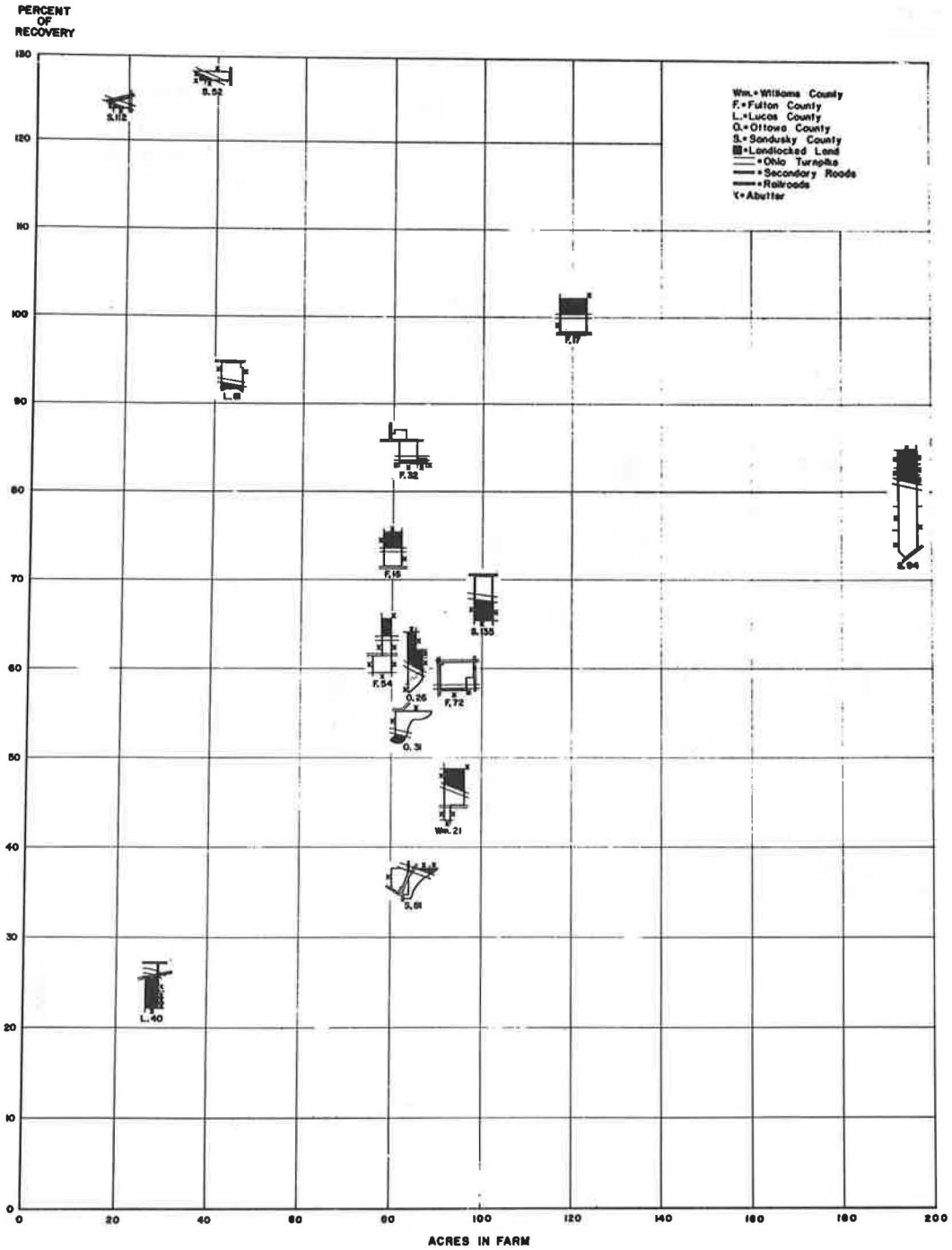


Figure 5. Percent of recovery relative to size of farm with landlocked acreage when farm sold as a unit.

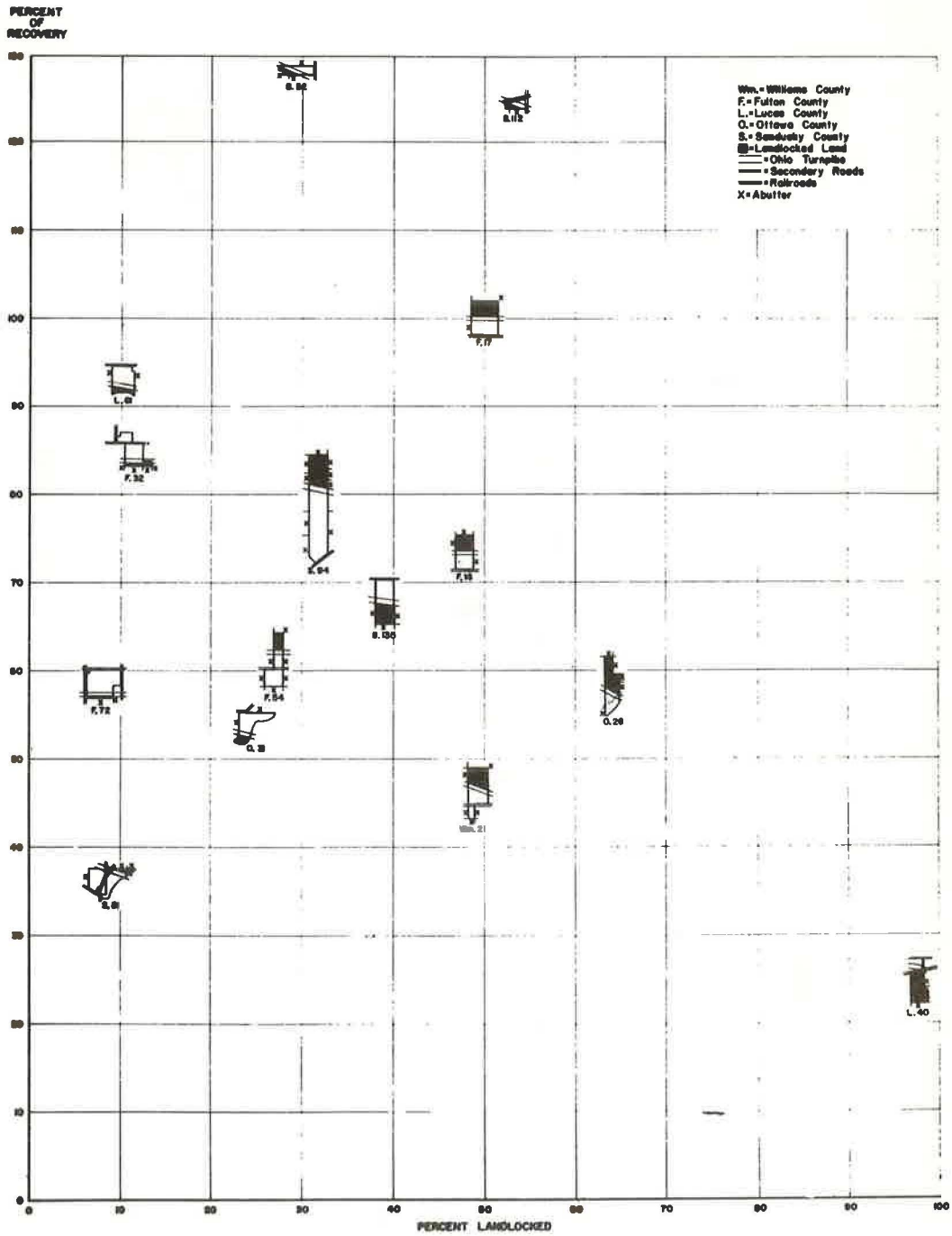


Figure 6. Percent of recovery relative to percentage of farm landlocked when entire farm sold as a unit.

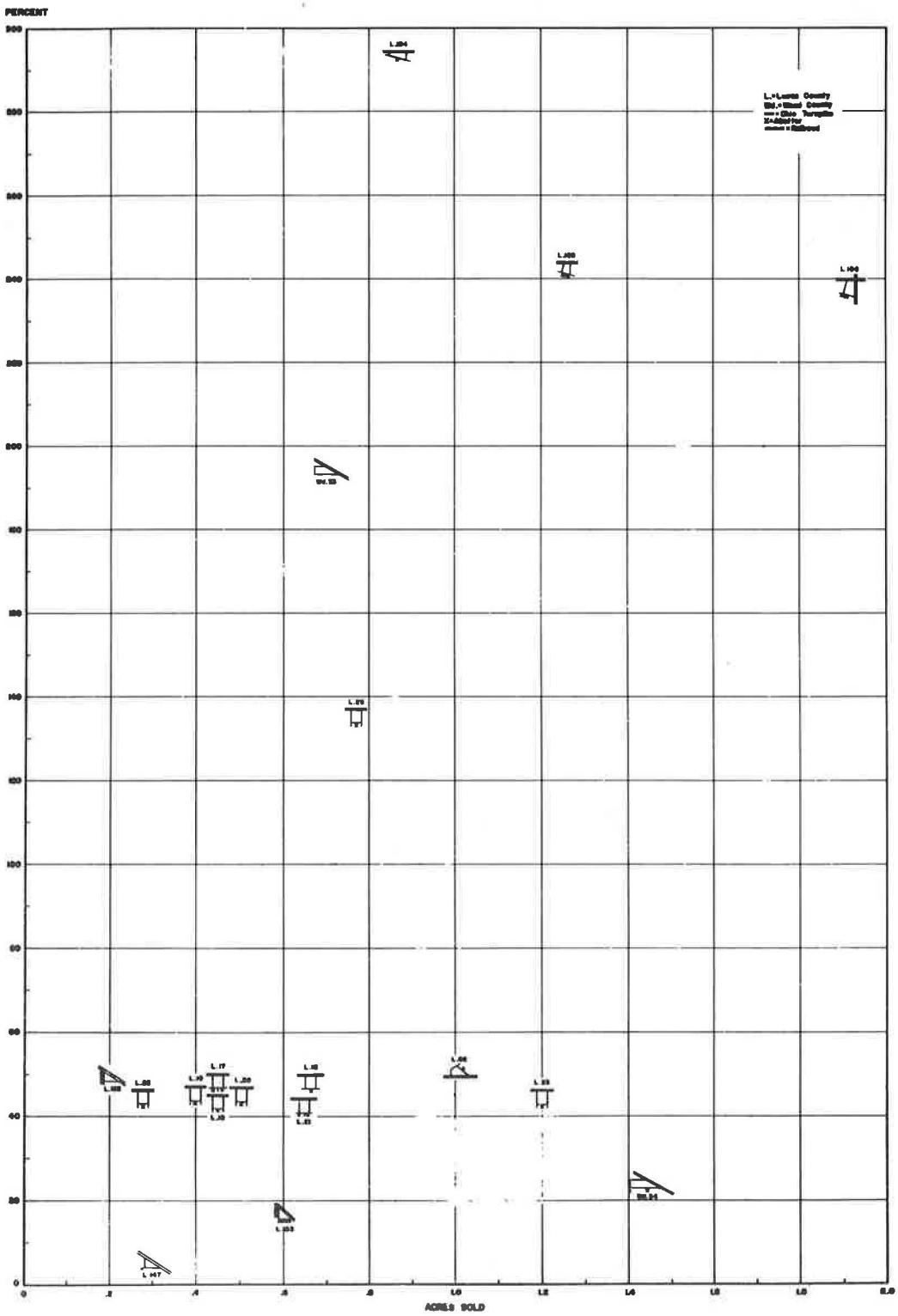


Figure 7. Percent of recovery and corresponding size of landlocked tracts sold from parcels under 10 acres (borrow sales excluded).

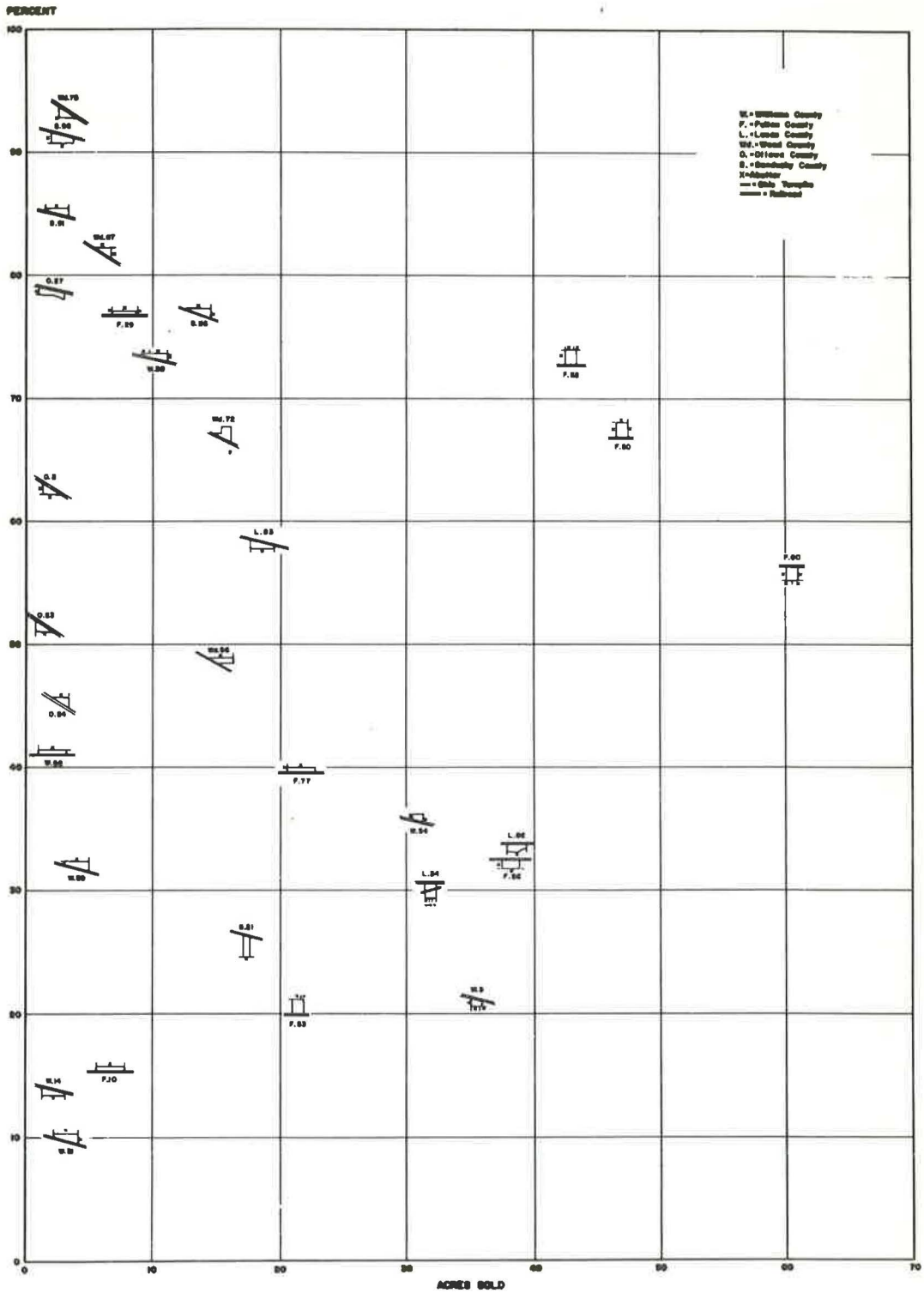


Figure 8. Percent of recovery and corresponding size of landlocked tracts sold from agricultural parcels 10 acres and over (borrow sales excluded).

to the homesite in those counties. This was the basis used in arriving at the before value of a portion of the property sold.

In the Ohio Study, landlocked areas have been conveniently plotted on schematic diagrams to show visually the owner's action in relation to the size, shape, and number of abutting owners. Figures 4 through 8 show the schematic diagrams that pertain to landlocked parcels.

Figure 4, which shows the before and after uses of landlocked tracts that have not been sold for all parcels originally 10 acres or over, can be divided into two primary categories. The upper three groups indicate usable land before and after, and the lower four groups indicate idle land. An examination of the case histories for the larger tracts of idle land (such as O-30, F-11, L-33, and W-50) indicated that these tracts were not useful because of a physical characteristic of the land itself which prevented any normal productivity.

Table 3 gives the various owners' action on the landlocked areas. In the majority of cases, the owner has retained the land. Of the sold tracts, the percent of recovery is shown in Figures 5 through 8. These schematic diagrams serve as an excellent index to the case histories as well as aiding the reader in grouping action taken on various classes of parcels.

One theory of the value of landlocked areas is that their value will vary in accordance with the number of abutting owners. Table 4 shows that the cases reviewed do not support this theory.

It has not been possible here to present all the information obtained in the Ohio Turnpike Economic Study as it relates to landlocked areas, nor has it been possible to cover all the various methods of analysis that were pursued in the attempt to find definite trends that could be useful in predetermining values of landlocked areas. The reward for the

TABLE 3

OWNERS' ACTION ON LANDLOCKED TRACTS, 1961
(Agricultural Parcels)

Use	Tracts		Acres	
	Number	Percent	Number	Percent
Retained by owner:				
Rented to abutter	16	9.5	177.2	5.8
Idle	31[a]	18.5	266.5	8.7
Temporary access	32	19.0	761.8	24.9
Permanent access	16	9.5	472.3	15.5
Subtotal	95	56.5	1,677.8	54.9
Sold by owner:				
To contractor	22[b]	13.1	459.7	15.0
With other land	19	11.3	414.0	16.6
Separately	29	17.3	506.7	13.5
Subtotal	70	41.7	1,380.4	45.1
Combination	3	1.8	--[c]	--[c]
Total	168	100.0	3,058.2	100.0

[a]Includes five tracts from which contractor obtained borrow.
[b]Includes five tracts sold with other land to contractors.
[c]Included in preceding figures.

TABLE 4

PERCENT OF RECOVERY FOR LANDLOCKED TRACTS SOLD, CLASSIFIED BY NUMBER OF ABUTTING OWNERS, 1953-61
(Agricultural Parcels)

Number of Abutting Owners	Number of Tracts Sold[a]	Total Sale Price ($)	Adjusted Appraised Value ($)	Range of Recovery Rates		
				Avg.	High	Low
1	11	15,145	29,227	51.8	93.3	13.9
2	9	19,300	48,694	39.6	91.2	10.1
3 or more	8	45,550	83,282	54.7	76.8	20.9

[a]Excluding borrow sales.

tremendous amount of detailed and time-consuming research effort and analysis is the usefulness of these studies to the appraiser and the negotiator.

To the appraiser, studies of this nature are invaluable. Certainly any attempt on the part of an appraiser or reviewer either to use the case histories as direct comparables or to apply averages in the actual determination of values must be questioned. There are just too many variables involved. The diligent review of project studies such as the Ohio Turnpike Study gives the appraiser a broader experience background with which to approach a problem on landlocked lands better. He must recognize the high recovery possibilities as well as complete loss of usefulness of the land. His conclusion as to value should be more valid under these circumstances.

Information obtained from the studies can be an equally important tool in the hands of a well-informed negotiator. He can lessen the fear of the owner by showing what others have been able to do with areas that might at a first instance appear valueless.

The administrators of the highway program must recognize that the present study represents a relatively small sampling of the problem and that research into the value and usage of landlocked areas should continue. The results of such studies should be made available to all appraisers and to the public for educational purposes.

As more and more information becomes available on landlocked areas, acquiring agencies may want to make recommendations to their legislature for laws that would aid in narrowing this wide range of values, such as providing definite corrective procedures for establishing access to these landlocked areas without burdening the public in their maintenance. So far, the studies have shown that there is a wide variance in recovery and there appears to be no method of analysis of values of landlocked areas that will result in a pattern that can be applied in the determination of value. The good judgment of a competent, informed appraiser is still essential.