Symposium on Partial Taking and Severance Damage

Land Economic Studies by the Washington State Highway Department

W.A. BUGGE, Director of Highways, Washington State Highway Commission

● THERE ARE many types and purposes for land economic studies and the State of Washington has embarked upon that type which will be most immediately useful to the Right-of-Way Division in solving appraisal and acquisition problems which arise in the partial taking.

The studies are being made on a parcel-by-parcel basis, investigating the actual values of remainders of properties where a portion was acquired for highway purposes. When the facts have been determined concerning the history of each remainder, they are immediately analyzed and the gain or loss in value compared to the market-value trends in a nearby control area. The study is then reproduced and distributed to all Right-of-Way Division personnel, the Assistant Attorney General, all fee appraisers who do appraisal work for the Department, and any other groups who have expressed an interest in the results of the studies, including the National Land Economic Study Committee of the American Right of Way Association and any State highway department which has expressed a desire to receive copies.

To date, 12 such studies have been completed (Table 1). First attention was given to those properties located at major interchanges on the Interstate Highway System, since studies in other States, notably California, have already indicated that such properties definitely realize tremendous special benefits by reason of their proximity to the interchange. It was felt that placing this knowledge in the hands of those persons responsible for evaluating the just compensation payable to property owners would result in immediate savings in right-of-way costs at similar interchanges.

It is intended to investigate all classes of partial taking and search out sales of the remainders of such takings to determine what actually happened to the after value of the property. Certainly not all cases will disclose an increase in value of the remainder, but a file of cases will be developed which can be consulted by appraisers and right-of-way personnel that will give a clear indication of what degree of benefit or damage may be expected to occur under any given set of conditions. Eventually there will be a mass of evidence to show just what effect is caused by placing a right-of-way line just a few feet from a single family residence, by imposing a 20-ft fill in a back yard, by the proximity of a deep cut—in short, the actual effect on the market of every one of the many types of highway taking situations that can develop from acquiring and constructing a modern type of highway will be documented.

It is believed that this type of individual case study is the most useful of all land economic studies and makes available now when most needed, the information that is vitally needed in order to control intelligently the expenditure of public funds for right-of-way purposes.

The appraisal process is one which has seen constant improvement and especially rapid strides in recent years. The modern fully-documented appraisal report leaves little doubt as to the justification of the values assigned by the appraiser. The Washington State Highway Department and many of the others throughout the nation have made major contributions to the elevation of the professional quality of the modern

appraisal by demanding that all statements of value be fully documented. To give an oversimplified illustration of the point, it is no longer acceptable for an appraiser to merely state in the report that the right-of-way takes "3.5 acres at $500 per acre—total $1750.00." Washington State insists that he include in his report a showing of sales in the area of similar property which will support and prove his statement that this particular piece of property is worth "$500 per acre."

TABLE 1

LAND ECONOMIC STUDIES

Study No.	Location
1	PSH No. 1, Tumwater vicinity, Trosper Road Interchange.
2	PSH No. 1, Tumwater vicinity, Trosper Road Interchange.
3	PSH No. 1, Tumwater vicinity, Trosper Road Interchange.
4	PSH No. 1, Scott Road to Tacoma, Bridgeport Way Interchange.
5	PSH No. 1, Brunt Bridge Creek to Salmon Creek, Northeast 78th Street interchange.
6	PSH No. 1, Jct. SSH no. 12-E to Newaukum River, Parcel No. 16734 (Sept. 1959).
7	SSH No. 1-A, Howey Road to Sedro Woolley, Parcel No. 17013 (Sept. 1959).
8	SSH No. 1-A, Howey Road to Sedro Woolley, Parcel No. 17017 (Sept. 1959).
9	SSH No. 1-A, Howey Road to Sedro Woolley, Parcel No. 17009 (Sept. 1959).
10	SSH No. 1-A, Howey Road to Sedro Woolley, Parcel No. 16997 (Sept. 1959).
11	SSH No, 1-A, Howey Road to Sedro Woolley, Parcel No. 17005 (Sept. 1959).
12	SSH No. 1-A, Howey Road to Sedro Woolley, Parcel Nos. 16993 and 17000 (Sept. 1959).

It is acknowledged that for some years only rare difficulty in the appraisal of the total taking or in the appraisal of the before value of a parcel involved in a partial taking has been experienced. It is in the area of the partial takings, with all of its complications such as reduction in size, change of shape, proximity of the highway, obstruction of view, and restriction of access, that an appraiser is forced to rely upon his opinion as to the probable value of the remainder. By making available to him, factual, individual studies of the actual effect of a partial taking for highway purposes he will be furnished the tool which was formerly completely missing from his professional kit. He can soon say,with authoritative proof behind him, that in a given situation, just what can be expected to happen to the value of the remainder.

Proper classification and filing of the data gathered in these individual studies will produce a wealth of information which can eventually be analyzed and documented into broad conclusions on the basic effects of any particular type of taking. Even though the studies are conducted on an individual basis, the data obtained can easily lead to the preparation of broader, long range studies and provide information for the theoretical or social impact type of studies which are now being conducted by so many of institutes of higher learning.

The individual, practical and immediately useful studies, such as those in Washington, are most logically conducted by members of the right-of-way division of the state highway department. Of necessity, the studies involve the use of highway department maps, the history of the original highway acquisition and a working knowledge of legal descriptions, highway construction details, county records and the appraisal process.

To outline briefly the methods used by Washington's Land Economic Study Section, it should first be pointed out that this section was initiated in August 1959. The study began by checking the recorded facts surrounding a few isolated and dramatic situations that had reached the office as rumors. These rumors proved to be true and the first few studies, all located at major interchanges, showed special benefits to the remainder

of the parcel ranging from a low of 295 percent to the incredible high of 64,000 percent (Land Economic Study No. 6, Table 1).

Having disposed of these few isolated cases, the section began a systematic study of the history of all cases involving a partial taking on a given highway project. The highway map quickly disclosed all of the properties on the project from which only a portion was acquired. A copy of the title report of each of these parcels was made and a search made at the county court house for any and all subsequent transfers of the remainder. After all such sales on a given project are found and tabulated, one more important step is taken. The surrounding area is examined to establish the local trend of real estate values for lands similar to the ones involved in the study, but located outside the zone of influence of the highway. It should be obvious that such a yardstick must be carefully established if the change in value of the study parcel is to have any meaning. If, for instance, a given remainder jumped 200 percent in value, the jump means nothing if the whole area is one which was in a real estate "boom" zone where all values were rising in a similar degree. If, on the other hand, the local values were rising at only, say 2 percent per year, then certainly the difference between the general trend and the change in value of the subject property must be due primarily to the influence of the new highway. The facts which have been gathered are then analyzed and made into a graphic, comparative study of the sales history of the subject parcel compared to the sales trend in the control area. It is usually possible to isolate quite conclusively the effect of the highway upon the value of the remaining parcel. There is considerable difficulty with studies involving projects where the right-of-way was acquired more than five years ago, when a firm pre-appraisal policy was begun. The lack of a competent appraisal of the property made at the time of acquisition makes any comparison with the present value very difficult.

The section will move from project to project until it has blanketed the state with factual data disclosing the effects of highways on adjacent land values. It may be that by that time the broader studies, which have proven to be so useful in other states may be begun. For example, in the by-passed community what happens to land values and business activities in a municipality which has been by-passed by a new freeway? Conversely, what does it do to a community when the route is laid out through its geographic center? There is also the tax-base study, showing what has happened to assessed valuation levels in a given area. Did the freeway really wipe out several million dollars of taxable properties, or did it stimulate the area to a higher assessed valuation level?

In the completed land economic studies, the diagram has been kept as simple as possible, showing only those elements which are important to an understanding of the case, because the study attains its greatest utility if readily grasped by a property owner or juror, who is unversed in highway map reading and technical appraisal terminology. Each study incorporates the following facts:

1. Project title and parcel number, and land economic study number.
2. Diagram of original property and highway taking.
3. Land use prior to the taking.
4. Size of original parcel, the taken area, and the remainder.
5. Exact nature of the taking, including such physical details as the height of fill, access restrictions, and fencing erected.
6. Complete breakdown of right-of-way settlement showing amounts paid for land, improvements and damages and offsetting benefits, if any.
7. Legal description of original parcel.
8. Complete deed references on all sales of remainders and control parcels.
9. Land use after the taking.
10. Comparison of land values before and after the highway.
11. Photographs.
12. Control data, showing local land value trends during the study period.
13. Vicinity sketch, showing relationship of property to nearest metropolitan area.

The studies are already producing the very results which were anticipated. Apprai-

sers being used by the state are already becoming convinced that the data in the studies is a source of proof of their estimate of the "after value." This has the result of giving appraisals which are most convincing, especially in their treatment of damages or benefits to a remainder in the formerly difficult partial taking cases.

The studies are highly usable in the acquisition of right-of-way in at least three areas. First, and perhaps the most successful, the appraiser uses the sales appearing in the studies as comparable sales supporting his estimate of the after value. It was in anticipation of this use that the inclusion of full documentation of all sales was required in the studies. The appraiser can personally confirm the facts by examination of the records, and if the local courts require it, by confirming the facts with the parties themselves.

The second method involves qualifying research men as experts in this field (and it is certainly ture that in a few months they will have learned more about the field than anyone else in the area) so that they may testify in condemnation cases as to the known effect of a given set of highway taking conditions on the remaining value.

Finally, a folio of the studies also becomes an extremely useful tool in the hands of right-of-way agent who can dramatically show to the property owner just what happened to other property owners under similar circumstances.

Oregon Land Economic Study

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●THE OREGON program, inaugurated in 1958, encompassed a 32-mi section of the Baldock Freeway, which is to be a section of Interstate 5. This highway is a completely access controlled facility, built to Interstate Standards.

The area traversed is predominantly agricultural, although small suburban areas are encountered at the extreme terminus of this 32-mi section, as a result of the influence of Portland on the north and Salem on the south.

The study involves 28 parcels of land, the sales of which, in whole or in part, have occurred after the construction and opening of the highway. The purpose of this probing and analysis was to secure such data as were available that would indicate the relative influence of freeway construction upon the value of the abutting properties.

In determining whether or not the particular property had suffered or increased in value as a result of the highway construction, the following formula was used.

To determine the after value, the value of the property at the time of taking, as indicated by staff appraisal, fee appraisal, or both was used. From this figure was deducted the just compensation paid to the landowner, as indicated by the settlement, or the jury verdict. Of the 28 cases reported in this study, only four reached the trial stage and were submitted to a jury.

In determination of the total benefit or damage, the subsequent sale price was used as indicative of market value and from this amount was deducted the after value, if less than the sale price. If more than the sale price, the sale price was then deducted from the after value to show the damage. In those instances in which the subsequent sale by the landowner was for just a portion of the remaining property, the after value was pro-rated by the usual appraisal methods.

From the total gain, the increase in land value not shown to be influenced by the highway construction was then subtracted. In determination of this normal increase (there was no evidence of a decrease indicated in the area under study), there was a little difficulty. There was not enough sales in this agricultural district to permit establishing a reliable control area in which sales could be examined to determine the percentage of normal increase of land values. There were but few sales of agricultural properties to begin with, and all of these were influenced, to a greater or lesser extent, by the highway improvement. The sales which occurred in localities not influenced by the highway facility were too distant to be used as a fair comparison.

As a consequence, an arbitrary 5 percent per year yardstick was used to ascertain the normal appreciation of all properties in the area. This percentage figure was derived from information published by the United States Department of Agriculture, which indicated an inflation of 50 percent in property values in the State of Oregon for the past 10 years.

As a result of this study, it was found, and this was a long-suspected fact, that damages were paid to the landowner in 65 percent of the cases studied although they were warranted in only 10 percent and the amounts paid in the latter instances were 15 times greater than justified.

TYPICAL CASES

The following are some typical cases showing the effects on the properties brought about by the change in the highway facility.

Hayesville Interchange (Case Study No. 6)

Before value	
5.09 acres (restaurant) at $1000 per acre rounded to	$ 5,000.00
Old restaurant building	10,000.00
New restaurant and equipment	28,500.00
	$43,500.00
Value of taking	
654 sq ft along frontage on existing highway	$ 50.00
After value	
Same as above less 654 sq ft	$ 5,000.00
Old building	10,000.00
Restaurant and equipment	28,500.00
	$43,500.00
Subsequent sale of property	$37,500.00
Loss	$ 6,000.00

The subsequent sale of this property, after the opening of the new highway facility in November 1955, was for $37,500, or an indicated loss of $6,000. The owner at that time, claimed that the dust, noise, confusion and restricted use of his frontage on the old highway was responsible for the failure of his business and the loss of $6,000. Poor management may also have been a factor. Since the sale, the new owner has re-opened a specialty restaurant, which has been succeeding. However, it is believed that no informed person would deny that the highway construction damaged this business location, though such damage, under Oregon Law, was consequential and non-compensable.

Hayesville Interchange (Case Study No. 5)

Before value	
38.75 acres farm at $750.00 per acre average	$24,500.00
Improvements (house, barn and sheds)	10,500.00
	$35,000.00
Value of taking	
13.05 acres at $652 per acre	$ 8,780.00
Timber at $3200—Fence at $720	3,920.00
Damages to remainder (irrigation and pasture)	3,700.00
	$16,400.00
After value	
25.71 acres at $315 per acre	$ 8,100.00
Improvements (same)	10,500.00
	$18,600.00
Subsequent sale of remaining property	$50,000.00
Benefit	$31,400.00

This farm was originally purchased, part in 1926 and part in 1932, for a total sum of $6,400. Informed appraisers estimate the increase (some 450 percent) in value to 1953 to be $28,600, or a total of $35,000 at the time of taking. After completion of the highway facility in 1955, the owner sold all of the remaining property in 1956 for the sum of $50,000 pointing out that remaining property had not been damaged, but benefited by highway construction.

Quinaby Overcrossing (Case Study No. 4)

Before value	
180 acre farm at $238 per acre average	$42,900.00
Improvements (buildings)	4,800.00
	$47,700.00
Value of taking	
11 acres at $400	$ 4,658.00
Fence	496.00
Temporary construction easement	868.00
	$ 6,022.00
After value	
169.36 acres at $218	$38,242.00
Improvements (buildings)	4,800.00
	$41,678.00
Subsequent sale of 125 acres in 1957 at $350	$35,000.00
Remaining 42 acres and buildings	19,000.00
	$54,500.00
Benefit	$12,822.00

Of this farm, 125 acres including improvements, were purchased in 1943 for $20,000. In 1944 an additional 55.78 acres was purchased for $5,000. This property has no access to the freeway.

St. Louis Road Overcrossing (Case Study No. 10)

Before value	
104 acre farm at $125 per acre average	$13,000.00
Buildings	2,000.00
	$15,000.00
Value of taking 1953	
23.02 acres at $140 per acre	$ 3,222.80
Fence and timber	922.00
Damage to remainder (irregular shape)	1,455.20
	$ 5,600.00
After value	
80 acres at $90	$ 7,400.00
Improvements (same)	2,000.00
	$ 9,400.00
Subsequent Sales	
Easement to Bonneville Power	$ 1,080.00
Entire remainder in 1957	12,000.00
	$13,880.00
Normal increase on after value $1,480	
after value 9,400 5 percent per year for 4 years	
$10,880	
Benefit	$ 2,200.00

Property purchased in 1925 at $90 per acre. Poorly drained. Overpass made possible to farm both sides with minimum of travel.

Fargo Road Underpass (Case Study No. 16)

Before value	
100 acre farm, grain and pasture at $150 per acre average	$15,000.00
Improvements (house, barn, garage, sheds)	15,800.00
	$30,800.00
Value of taking	
12.31 acres at $325	$ 4,000.00
House, barn, garage, well, trees, sheds	16,000.00
Severance	3,000.00
	$23,000.00
After value	
87.69 acres at $90	$ 7,800.00
Subsequent sale 77.69 acres lying east of freeway at $255	$20,000.00
10 acres remaining west of freeway at $200	2,000.00
	$22,000.00
Benefit	$14,200.00

Farm was not cleared of stumps and brush. Three miles to nearest freeway access. Study indicative that value of buildings too high and severance damage unjustified.

Butteville Road Underpass (Case Study No. 14)

Before value	
75 acre dairy farm at $200 per acre average	$15,000.00
House, barn and dairy buildings	11,500.00
	$26,500.00
Value of taking	
32.57 acres at $325	$10,585.00
Fence	576.00
Damage to remainder, irregular shape, over improvement	4,339.00
	$15,500.00
After value	
42.47 acres at $145	$ 6,000.00
Improvements (reduced—now over improvement)	5,000.00
	$11,000.00
Subsequent sale	
Land at $332 per acre	$14,000.00
Improvements (no cattle)	10,000.00
	$24,000.00
Benefit	$11,350.00

This farm purchased in 1952 for $28,000, including 22 head of cattle. Stock then worth $150 to $200 a head. For this report, a figure of $137, was used making cattle value $3,000 and farm value $25,000. Five percent, $1,250, allowed as inflationary increase, making total value of $26,500 at time of taking. Award of damages unwarranted. No access to freeway.

Freeway and Willamette River (Case Study No. 18)

Before value	
130 acre farm (filberts and pasture) at $265 acre average	$27,000.00
House, barn, fence and well	8,000.00
	$35,000.00
Value of Taking	
38.348 acres at $380	$14,563.30
After value	
65+ acres at $193	$12,436.70
Improvements	8,000.00
	$20,436.70
Subsequent sale	
54 acres at $193 per acre	$19,000.00
Minimum value of remaining acres and buildings	13,000.00
	$32,000.00
Benefit	$11,563.30

4 years between sales. No access to freeways.

Wilsonville Interchange (Case Study No. 17)

Before value	
26.6 acre farm (grain and filberts) at $375 acre average	$10,000.00
Home, garage, shop and woodshed	12,000.00
	$22,000.00
Value of taking	
6.66 acres at $633	$ 4,190.00
Moving house	8,400.00
Damages for severance and reduction of size	3,563.00
	$16,153.00
After value	
20 acres at $250	$ 5,247.00
Improvements	9,000.00
	$14,247.00
Subsequent sales	
½ acre adjacent to off leg on east	$ 1,000.00
5½ acres on west	8,000.00
	$ 9,000.00
Remaining 8 acres of filberts $4,000, and 5 acres and house $10,000	$14,000.00
	$23,000.00
Benefit	$ 8,753.00

Indicated damage factor unjustified when property abuts an interchange.

Wilsonville Interchange (Case Study No. 21)

Before value	
4.45 acres in filberts and berries at $900 average	$ 4,000.00
Value of Taking	
0.32 acre at $1000	$ 320.00
Fence	80.00
	$ 400.00
After value	
4.13 acres at $870	$ 3,600.00
Subsequent sale	
4.13 acres to Standard Oil at $159.32 per month, capitalized at 6 percent	$14,000.00
Value remaining land	2,000.00
	$16,000.00
Benefit	$12,400.00

Increase due to interchange location. Sight value of land abutting an interchange often increases in value many hundred fold, due to easy access to highway traffic for catering service. Another service station, one block away in the small community of Wilsonville, is now out of business.

Stafford Road Interchange (Case Study No. 20)

Before value	
80 acre farm at $150 acre average	$12,000.00
Value of taking	
6.83 acres at $230	$ 1,580.00
Fence	437.50
	$ 2,017.50
After value	
73 acres at $137	$ 9,982.50
Subsequent sale of remainder	$16,000.00
Benefit	$ 6,017.50

Construction of new State Hospital at Wilsonville, a short distance to south, may also have been a contributing factor.

Tualatin Interchange (Case Study No. 26)

Before value	
134 acre farm (grain-stock) at $460 acre average	$61,700.00
Two homes and several old buildings.	42,500.00
	$104,200.00
Value of taking	
23.5 acres at $823 per acre	$19,356.00
Improvements—1 home, sheds, fence, farm buildings	11,873.00
Damages allotted for severance into two parcels, etc.	11,751.00
	$42,980.00
After value	
110 acres at $375 per acre	$42,344.00
Improvements	18,876.00
	$61,220.00

Subsequent Sales	
¾ acre to Texaco at $325 per month, capitalized at 6 percent	$28,700.00
Estimated value of three remaining corners on interchange at $10,000	30,000.00
	$58,700.00
Value of farm still remaining estimated	$55,000.00
	$113,300.00
Benefit	$52,080.00

CONCLUSIONS

If there is any one major conclusion to be drawn it is that all future appraisals should reflect special benefits. Serious thought must be given by appraisers to this consideration. In Oregon, special benefits may be used to offset damages caused to remaining property brought about by virtue of the acquisition for highway use. Oregon has been very fortunate in having had its Supreme Court hand down an excellent definitive decision on this subject. One of their pronouncements is that special benefits need not be made a part of the pleadings in the case, but can be reflected in the opinion witness's appraisal.

These studies can be used in a court trial in two ways. One is to furnish the appraiser with copies of the studies for his use and edification. Then, when qualifying the witness in a given case, show that in preparation of his appraisal of the property under consideration, he reviewed this study, examined the pertinent properties involved and related them, or considered them, in arriving at his value of the property involved in the case before the court.

In order to make a valid use of these findings throughout the state, studies will have to be made in every area of the state. They are well worthwhile and in the end will bring savings that might stagger the imagination.

Partial Taking and Severance Damage Studies in Ohio

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● POPULATION increase and economic growth in Ohio in recent years have created an ever increasing demand for more and better highways to serve national, state and local needs. To meet these needs, highway programs have expanded and the pace of construction of new highways and improvement of existing state roads have been accelerated. Undoubtedly, the vast highway construction program will be further expanded and extended in the future.

Concurrently, with the increase in highway construction, highway engineering concepts have undergone certain developments designed to improve the efficiency and safety of highways and to protect the great investment of public funds represented in these roads by preserving their traffic-carrying capacity. Significant among these engineering developments has been the trend to by-pass communities, to construct on new location or to relocate highways without access to abutting properties or, in certain instances, to restrict the access to existing highways.

The effects of these two factors, the greatly expanded highway program and the altered characteristics of many of the more important routes, have had important economic and social ramifications of significance in future highway planning and right-of-way acquisition. Right-of-way costs, for example, are of particular concern. The relatively large amounts of land required by these new highways have aggravated an already

competitive land-use situation, and have contributed to the progressive increase in right-of-way costs. Reliable yardsticks and standards of value are needed to guide the highway appraiser and others concerned in arriving at just compensation for land taken and in evaluating properly the resultant damages, particularly those stemming from severance, landlocking and access restrictions.

Equally important is the need for factual information on the general, social and economic aspects of the larger highway program, particularly the effects of relocation and access restrictions on local communities as well as individual properties. It is essential that these effects be understood and properly considered by the highway designer, the right-of-way appraiser and the right-of-way buyer.

The basic objective of economic research is to develop, through investigation and study, a body of fundamental knowledge essential to a proper understanding of the economic and social factors associated with the construction and improvement of highways.

The availability of such information for the use and guidance of highway planners, appraisers and right-of-way buyers insures consideration of social and economic factors in highway location and design, promotes more realistic and professional appraisals of property acquired for road purposes, and assists the right-of-way buyer and right-of-way management in dealing with land owners and the public.

The principal areas of investigation in the Ohio research project fall into the following general classifications:

1. Social and economic changes that may occur in the vicinity of highway projects, particularly those relating to community effects, population shifts, business and industrial trends, over-all property values, and general desirability of affected areas.
2. Cost of lands required for highways of different types in various locations, with particular attention to the effect of development trends and probable future land-use changes, as these may affect current market values.
3. Damages to the residues of properties of which a part is taken, with special emphasis on damages attributable to severance isolation, landlocking and limitation of access.
4. Benefits and advantages accruing to property owners, communities and the public at large from the construction of new and improved highways, with particular emphasis on increases in property values, expanded commercial and industrial growth, community development and safety and efficiency of highway travel.

For the purposes of economic research, state highways are classified as to type, according to the degree and nature of the economic effects and character of damages resulting from the improvement. Any given study may be confined to one or more classes of improvement. In any event, the basic procedure and approach to the investigation and analysis are the same. The four basic classifications of highway improvement projects are as follows:

1. Limited-access freeways constructed on new locations.
2. Community by-passes or traffic relief routes.
3. Partial limitation of access on relocations or on existing locations.
4. Non-limited access roads on existing locations.

All investigations relate conditions before the highway improvement with those observed after the improvements are in service and sufficient time has elapsed for changes to have developed into identifiable patterns. The time lapse between the before and after investigations vary according to the specific factor or factors under consideration.

To provide a base on which to measure the degree of changes that may occur, and to allow identification of and adjustment for influences not related to the highway improvement, the control area technique is used. An area is selected in which there has been no recent highway improvement project and which has, as nearly as possible, the same general economic character as the area under investigation. Control areas are not necessarily adjacent or even in the same county, but they do exhibit comparable characteristics.

Collection of pertinent data is accomplished primarily by search of public records. Where the facts required are not of public record, the researchers obtain the data by means of interview. In the case of certain factors which are subjective in nature, primary reliance must be placed on interviews.

Ohio, feels so strongly on this particular subject that a separate section has been established in the Division of Right-of-Way for economic research only. The staff, for most part, are recent graduates from one of the large universities, and are ideal material for fact finding. They are supervised by a staff right-of-way engineer, but are given full latitude in their research efforts.

Ohio believes the facts collected and uncovered are of industry-wide interest, and to that end, has been happy to cooperate with the various universities and research organizations that have seen fit to make contact. Some of the statistical material has also been made available to the American Right-of-Way Association and other service organizations for discussion by their membership.

The files contain, at the moment, the case histories of some 400 properties that have been directly affected by approximately 95 mi of highway or turnpike on new location. The file also contains statistical data on some 400 additional properties that are indirectly affected by the highway. As analysts delve into this material, some interesting facts have begun to take form.

As an example of the Ohio studies, a case discussion of the newly-created intersection corners on a section of highway studied outside Toledo is presented.

The subject road was a brand new road at the time of its construction, and it was intended as a by-pass route. It was designed ten years ago and much has happened since then, both in design and the approach to mass handling of traffic.

This was previously an agricultural area, well served by county and township roads and, in general, a completely stable segment of Ohio. There is a clear rurban potential to this area, created by the time and distance factor after completion of the highway and the Toledo Expressway System.

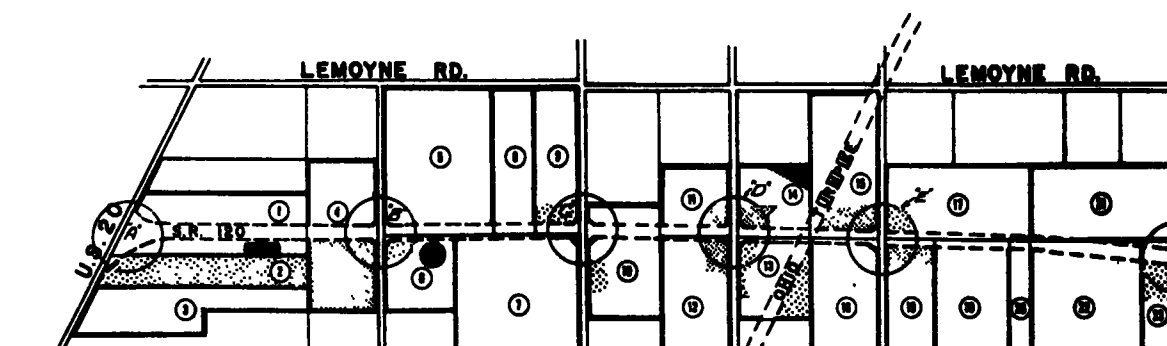


Figure 1. Property ma

Figure 1 shows the boundary of all abutting property of the segment studied and any sales of remaining lands. It is readily apparent that most sales were of lands used for borrow by the highway contractor or commercial corners. This comes as no surprise, of course, as it is customary to pay a premium for lands adaptable for either purpose.

In Figure 1 each intersection has a letter designation. This is for identification, and the intersections are referred to as Intersection A, etc.

Intersections A through C do not have too interesting a history. They all fall south of the intersection of the subject road and the Ohio Turnpike and, consequently, the major traffic movement—yet all are access points on a major throughfare. Their individual status is as follows.

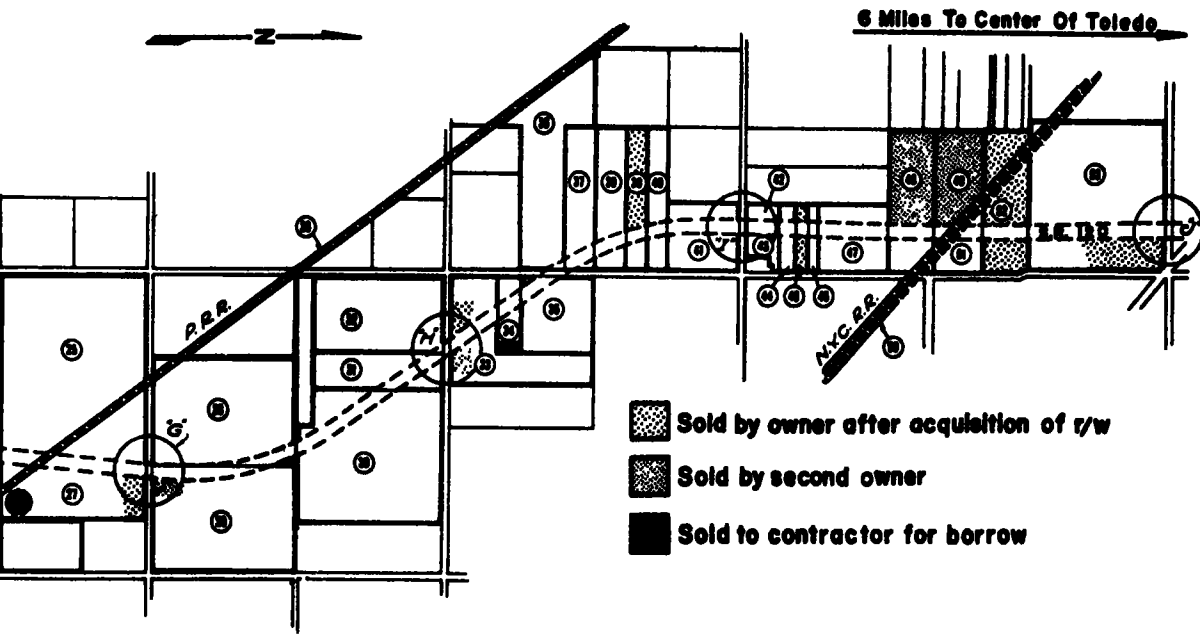
Intersection A has not developed. The basic reason for this is that limitation of access was carried out so far on the northeast corner that the corner influence was nullified. The corner property, shown as sold on the sketch, was actually landlocked and was sold to the son of the adjoining owner. The owner of the northwest corner is elderly, and the land is not for sale.

At Intersection B the new highway splits 80 acres of farm land on the south side, leaving roughly 40 acres on each side of the new road and followed a property line on the north side with the result that one owner owned the southeast and southwest corners, another the northeast and yet another the northwest corner.

The owner of the southeast and west corners sold the southeast corner (which had 15 acres of crop ground and 25 acres of woods) to a broker for $5,500, or 68 percent of its market value. He (the broker) resold it the same day for $7,500, or over 100 percent of its before market value. It is now the rurban estate of a Toledo professional man. The original owner still retains the southwest corner and is renting it on a share crop basis, as before.

The northwest corner has not sold, but 1.2 acre on the northeast corner sold for $1,000, or 373 percent of its before market value.

The southwest corner of Intersection C sold for a cemetery. The 12.6 acres involved sold for $17,000.00. The remaining three corners are unsold.



t of Toledo Expressway.

Intersection D is vacant at this moment, although all four corners have been sold. The four corners are plainly visible from the interchange connecting the subject road and the Ohio Turnpike, and would appear to have a high potential. The southeast and northwest corners sold as one transaction to a realty company with the 4.39 acres in the northwest corner bringing $7,500 and the 9.15 acres in the southeast corner bringing $21,000. The realty company, two years later, sold to a motel corporation for the same amount.

The southwest corner of 3.79 acres was sold to a down-state man for $10,500 and he, three years later, sold the same lands to the same motel corporation on a land contract basis for $9,000, or a loss of $1,500.

The corporation bought the remaining northeast corner of 4.57 acres on a land contract for $9,000. They now control all four corners, but have developed none.

Intersection E (Fig. 2a), the first access point north of the Turnpike and in the path of travelers going to and from the Turnpike, has had the most intense development. Here lands that were roughly worth $250 an acre before this roadway was constructed are now selling for thousands of dollars an acre.

The 7.8 acres and the 2.2 acres shown in Figure 2a sold by the original property owner as 10 acres for $29,700. His buyer sold the back 7.8 acres for $36,500 and build a filling station on the front 2.2 acres, which he rents to a major oil company for a minimum rental of $275 per month and a maximum of $475 per month. The buyer of the back 7.8 acres built a luxury-type motel on the 7.8 acres and sold the same for $462,000. It is believed some profit was involved.

On the northwest corner, 1.7 acres sold for $12,000 and is now occupied by a luxury-type motel.

The northeast corner of 8.7 acres sold by the original owner for $30,000. Two years later the buyer sold a one-half interest for $40,000; leased a filling station site on the front to a major oil company, and is now building a luxury-type motel on the back.

The southeast corner is still owned by the original owner (he sold the northeast corner) and he still farms it and the adjoining lands.

Intersection F is shown in Figure 2b. All four corners were owned by one owner. He sold three, a total of 20 acres, for $38,500. The buyer built a luxury-type motel on the southeast corner and left the northwest and southwest corners vacant. The original owner still owns the northeast corner and continues to farm it and adjoining lands.

Intersection G (Fig. 2c) is one to challenge the imagination. The northwest and southwest corners have not sold, and the original owners continue to use the land as before.

On the northeast corner a major oil company bought 4.9 acres for $15,000 and subsequently sold 3.7 back acres for $12,000. The remaining 1.2 acre is unused as the oil company leased a site on Intersection E. The buyer of the 3.7 back acres did not use it either. He bought a site on the south side of the side-road off the corner, containing 3 acres for $21,000 and built a motel.

The southeast corner is more orthodox as the original owner sold 4.4 acres for $15,000 and the buyer built a truck stop, which he leases to a major oil company for $435 a month minimum.

Intersection H (Fig. 2d) is the last of the intersections with statistical data. Here, the southeast corner and the southwest corner have not sold and are vacant. The northwest corner was bought by the highway department for a maintenance outpost.

Five acres on the northeast corner were sold for $7,000 and the buyer built a luxury-type motel on the site. This motel sold recently for $320,000.

Intersection I has a patrol post which was built in the middle 1950's, and Intersection J has had no sales at all. Accordingly, there is nothing to be learned at these locations.

To recapitulate, this road was built, entirely new in the early 1950's, on a new right-of-way that cost between $200 and $300 an acre for land plus damages to remaining lands. Some of these lands, presumed to be damaged and paid for as such, have in fact increased in value ten-fold by reason of the improvement. But the total cost for this initial right-of-way was not great. Also, in keeping with the time, no provision in right-of-way was made for expansion of this facility. Then, the rule was to buy more then needed for the present construction.

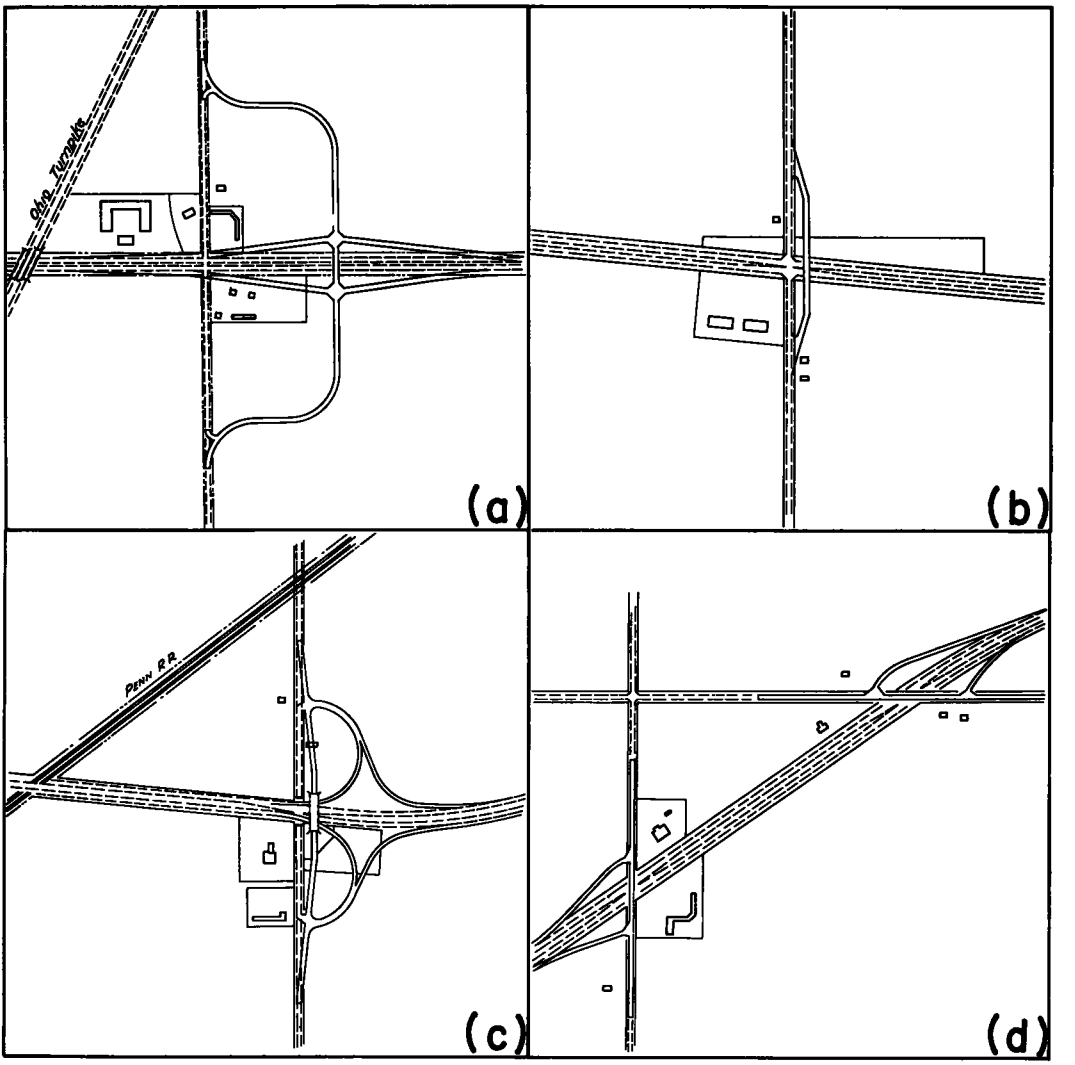


Figure 2.

The subject road, from the Ohio Turnpike north, is to be brought up to Interstate standards. This must be, of course, as the design standard must meet traffic needs. Less than 10 years ago, the present right-of-way was bought for a few hundred dollars an acre and applied damages to farm lands of like value. Now, land will be in the thousands, and damages will be applied to plants running into the hundreds of thousands.

Specifically, this is the work to be done and its manner of accomplishment. There is no proposed work south of the Ohio turnpike. A brief discussion of some of the intersections to be changed north of the Turnpike follows.

At Intersection E (Fig. 2a) on the southwest corner, is the motel that reportedly sold for $462,000, and the filling station under lease for $275 minimum and $475 maximum. On the northwest corner is a large luxury-type motel in full operation. On the northeast corner is the filling station leased by a major oil company in preference to a site owned by them at Intersection G (Fig. 2c). A large luxury-type motel is also in the process of construction on this corner. Their access will be as shown.

Intersection F (Fig 2b) is the right-of-way man's nightmare. Here, the buyer bought three of four corners for $38,000 to protect himself, and has built a motel

worth roughly $300,000 on one. As shown, there will be no means of direct access from the new road to his motel. The best he can hope for is overflow from his competitors on the north and south coming down side roads.

Intersection G (Fig. 2c) is the location where the major oil company owned a site on the northeast corner and did not use it, and where the owner of the motel on the south side of the side-road also owns an unused site on the northeast corner. Access to the motel, as built, and the truck stop on the southeast corner, is as shown.

Figure 2d at Intersection H shows the means of ingress and egress to the motel that recently sold for $320,000.

It is believed that the foregoing clearly established the need for clear thinking on the highway problem and that through the medium of economic research, the industry as a whole will be better equipped to cope with the total problem in the future.