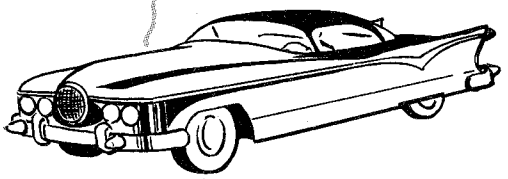
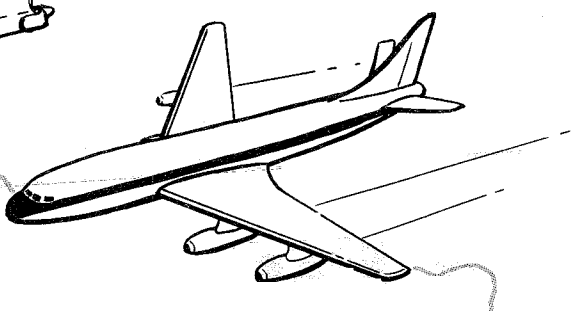
RIGHT OF WAY ACQUISITION EFFECTS ON THE REMAINING RURAL FARMS AND RANCHES IN MADISON COUNTY

AN INTERIM PROGRESS REPORT





BY HUGO G. MEUTH

HPR-1(5), RESEARCH PROJECT 2-15-63-58

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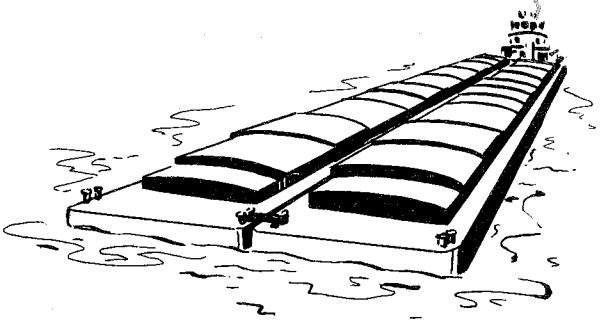
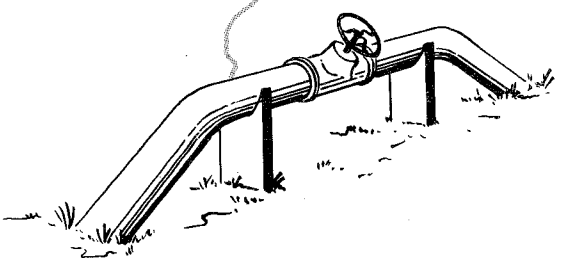




FOREWORD

This interim report has been prepared to fulfill the objectives of the project for the 1964-65 fiscal year. The report is tentative in nature and is confined primarily to the research methodology, background information, and preliminary findings covering the "before" and "during" periods of a study for which final data will not be completed for an additional year.

Since this report covers only the first and second phases of the study, the findings and analyses are not conclusive and should not be used or referred to as final results.

INTERIM REPORT OF THE RIGHT OF WAY ACQUISITION EFFECTS ON THE REMAINING RURAL FARMS AND RANCHES IN MADISON COUNTY

SECTION I

Introduction

A study was begun in 1963 on the effects of right of way acquisition on the remaining portions of rural farms and ranches in Texas.

The study was under the direction of William C. Cunningham from June, 1963, to March of 1964. From March, 1964, until August, 1964, the project did not have a full-time supervisor, but field work was conducted by other members of the Transportation Economics Department of TTI. Since September 1, 1964, Hugo G. Meuth has been assigned as project leader.

This report presents some preliminary findings developed from personal interviews with operators of land affected by right of way acquisition for Interstate 45 in Madison County. Information gathered from the operators was in regard to their 1962 and 1964 operations. The 1962 data represent the period prior to acquisition and will be referred to as the "before" period. The 1964 data represent the period of construction. This period will be referred to as the "during" period.

Statement of Problem

When highways are constructed on new locations, the right of way in most instances is purchased from private owners. In rural areas these tracts of land are usually being operated as farms or ranches either by the owner or by some other person leasing or renting the tract. The

right of way tract may be all or part of a farm or ranch operating unit. The taking of land for right of way purposes may affect these operating units in a number of ways. It may reduce the physical size of the individual operation by the amount of land taken, or it may divide original property in such a manner that the effective operating size of the unit is reduced by an amount greater than the portion taken. The right of way taking may also cause recombinations of existing operating units into new units of different sizes and with different levels of efficiency. By providing extra capital, acquisition may stimulate efficiency of farm and ranch operators and increase production. The new highway also may cause a change in the highest and best use of the land and thus change its overall value.

Since the Texas Highway Department is responsible for appraising and acquiring right of way, it is in the best interest of the Department to understand better the probable effects of right of way acquisition on farm and ranch operators. Increased knowledge of values, potential damages, and economic consequences would permit a more thorough value analysis of right of way acquisition and should also be of considerable assistance in the actual right of way negotiation process.

Objectives

When completed, the objectives of this study will furnish specific information for appraisers to use in evaluating the potential effects of the right of way acquisition on owners and operators of farms and ranches.

After obtaining information from land owners, and operators of land affected by right of way acquisition in three different areas in Texas, the following objectives appear to be the most logical to pursue in this study. To determine the effects of right of way acquisition on:

1. Changes in kind and intensity of rural land use,
2. Changes in number of farm and ranch operating units, tenure and intensity of operation,
3. Costs of adjustments to new farm and ranch operating conditions, and
4. Changes in farm income caused by decreasing farm acreage and division of the unit into separate tracts.

Methodology

Library Research

Before field work was planned, a search of material pertaining to land acquisition and similar studies was conducted. The Texas Highway Department's "Right of Way Manual" was studied to determine right of way procurement procedures used by the Highway Department.

All available bibliographies were researched for titles or other indications of previous studies similar to this study. These bibliographies were screened and all closely related works were either located in the Texas Transportation Institute library or in the A&M University library. Articles not in the local libraries were requested from individuals and organizations responsible for publishing the articles.

Method of Approach to Study

It was decided to use a modified "before" and "after" approach along with the comparative control method in developing the desired information. In this approach, farm management information would be gathered from the operators covering a full year's operation before the highway affected them in any way; this information would represent the "before" period conditions. Information obtained later would represent the period of construction, referred to as the "during" period. Following a full year of operation under the influence of the completed highway, information would again be collected; this information would represent the "after" period.

Information to be gathered from operators affected by the right of way acquisition would be compared with data collected from operators in a similar or "control" area. This procedure involves the selection of a control group of operating units in the vicinity of each study group area but outside the direct influence of the new highway.

The farm management approach involves a personal interview with each unit operator and the completion of a detailed questionnaire pertaining to each operator's entire operation. For operators having more than one tract, data were to be gathered on each tract in his operation. In the final analysis, it is hoped that an accurate measure of the operational changes or adjustments and the corresponding costs of adjustments from year to year will be obtained. The information may possibly be used to compare different study areas involving different types of agricultural operations. At this stage of the study, however, it appears that much of the data

collected are more applicable for use in paired case studies of similar operations in the study and control areas.

Selection of Study Sites

In the selection of study sites for this project, it was necessary to establish certain criteria in order to make the various sites suitable for both area and combined-area analyses. These criteria are as follows: The highway must have a design equivalent to Interstate standards relative to control of access, intervals of more than a mile between interchanges, and rights of way of similar widths; highway segments must be constructed on new rights of way or newly aligned highways; and in areas that are likely to remain in agribultural use; agriculture along these study segments should be fairly uniform as to type, size, and quality of farms; and segments should be long enough to permit observations of a fairly large number of farms.

An attempt then was made to identify locations or areas meeting the above criteria. With the aid of the "District Monthly Right of Way Status Report" and the "District Control Sections Maps," provided by the Highway Department, a number of these locations were chosen for consideration. During the same time, conferences with the staff of the Right of Way Division of the Texas Highway Department yielded various suggestions and recommendations as to potential study areas. In this manner, it was possible to identify several locations that might be suitable for study. After these areas were identified, each highway district office was visited to obtain additional information about the segments that were being considered for study. In many cases the possible study sites were not acceptable because the construction planning did not meet the time schedule set up in the research methodology.

Those areas found suitable for study were further examined with officials in the district offices. If the district approved of the selected area, strip maps were obtained to determine the number of parcels, size of area, size of taking, and other facts pertaining to the right of way acquisition.

Before the final selection was made, information was gathered from both the local Agricultural Stabilization and Conservation county office and the Soil Conservation Service office in the area relative to the type of agriculture, production practices, and soil in the area. A determination was also made of the availability of a suitable area nearby, sufficiently comparable to the study area, to serve as a control area.

An inspection trip was made of the proposed study and control areas in order to check out agricultural practices and physical properties of the land in each area. After studying all information gathered through the above sources and agencies, three specific study areas and their respective control areas were selected.

Map Collection

Maps were needed to identify the land owners and operators in study and control areas. The identity of operators to be included in the study area was determined from right of way strip maps furnished by the Highway Department. In order to select a group of operators for the control area, ownership maps were obtained from county officials in each county. Aerial maps were acquired from each county's Agricultural Stabilization and Conservation Office. These maps proved to be valuable for determining land use, and also were helpful when conferring with operators regarding their farm or ranch operations.

Agricultural Records

Farm records of the Agricultural Stabilization and Conservation Offices in each county were useful in determining the nature of a given farmer's operation. ASC records contain such information as the number of tracts rented or owned, total acres, amount of cropland, and number of acres planted or allotted to crops under government control. Additional information is available as to certain agricultural practices carried out each year. These include such things as the construction of farm ponds, planting grasses, fertilizing pastures, or planting soil-building crops. In many cases, an operator in the study or control areas operated several tracts. In these instances the ASC records provided the location and land use of each tract. With this background information on each farm, personal contacts with each operator were begun.

Personal Interviews

Before being interviewed, each farmer or operator in the study and control areas had been mailed a letter informing him of the study and asking for his cooperation. Concurrently, an article was released to the local papers explaining the purpose of the study.

Interviewing followed the normal procedure of contacting each operator and, if possible, completing a questionnaire at that time. However, many operators preferred to postpone the interview until a more convenient time to avoid interference with their daily work routine. In most cases, it was found that the operators were glad to discuss the proposed highway and its many effects on their operations; however, when questioned regarding the purchasing of supplies or the sales of farm produce, they were more

reluctant to respond. After they were assured that the information given would be held in confidence, complete cooperation was usually achieved.

General Information

Three study areas have been selected for this project. The first, an area through Madison County, was selected to represent a ranching type agriculture. This area will be discussed in more detail later in this report.

A second area in Ellis County was selected in order to represent an intensive type farming area. This area covers the southern part of Ellis County, beginning on the north at the southern city limits of Waxahachie and extending south to the Hill County line. This section of the county is excellent farmland and is practically all in cultivation. It is located in what is commonly called the Blackland Prairie of Texas. The study area is located along Interstate Highway 35E and is approximately 20 miles in length. Most of the operators in the area depend largely on the income they derive from farming. There were approximately 45 operators in each of the study and control areas. Information was gathered from each operator covering the 1963 operations, to represent the period before construction. The completion date for the highway is sometime in 1966. Another interview will be made during the 1965-66 fiscal year and an interim report furnished the contracting agencies.

The third area, which was selected in 1965, covers an area of about 10 miles in length and is located in Colorado and Fayette Counties. The area extends eastward from a point about three miles east of Schulenburg to a point about six miles east of Weimar, Texas. This area is located

along Interstate Highway 10 and was selected to represent a diversified farm and ranch area. The new route is parallel to and south of U.S. Highway 90. It intersects Highway 90 at the study area's west boundary and again at the east boundary. In many cases the operators do some farming, but depend heavily on various kinds of livestock and dairying enterprises for the major part of their income. Most of the crops that are produced are used as feed in the livestock enterprises.

Since construction in this area began in January, 1965, the year 1964 will represent the "before" period. Operators in both the study and control areas were interviewed in 1965, with about 20 operators in each area cooperating in the study.

SECTION II

MADISON COUNTY AREA

This area is located in Madison County which is about 100 miles north of Houston on Interstate 45. It is principally in the Post Oak Belt of East Texas with slightly rolling surfaces sloping to the Trinity River on the east and Navasota River on the west. Most of the county has a sandy-loam soil, best adaptable for grazing. Soils in the Trinity and Navasota River bottoms provide an area of good farm land. Both study and control areas are located primarily in the sandy-loam area. In its native state, much of the sandy-loam section of the county was covered with post oak and other hardwood timber; however, considerable quantities have now been cleared.

In the past 10 or 15 years, the farm operators in the area have been gradually shifting from a combination of cash crop and livestock farming to strictly livestock operations. In the livestock operations of today, most operators try to raise enough hay for wintering the cattle, and a few raise a small amount of grain for use in fattening their calves. A common practice that is being expanded is the production of hay, such as coastal bermuda grass, from improved pastures. With this improved grass, operators can cut two hay crops a year and still have a number of months of grazing before winter.

To obtain a general picture of the agricultural operations and trends in Madison County, information was gathered from the Agricultural Census for years 1950, 1954, and 1959, the latest year available at this time. The most significant information relating to agriculture is presented in

Table 1. From the data, the county appears to be following the national trend of fewer and larger farms. Operators in this county are also using more cropland for grazing and less for cash crop production. For example, cotton acreages have been reduced from 8,961 acres in 1950 to 4,760 acres in 1959. The amount of land planted in corn was also reduced from 11,198 acres in 1954 to 5,435 acres in 1959. The production of hay has shifted from planted row-type hay crops to perennial grasses, such as coastal bermuda or other permanent-type grasses that do not require cultivation each year.

The census data show that from 1950 to 1959 there was a 31 percent increase in the amount of land being used for pasturage in Madison County. Operators throughout the county cleared woodland and converted much of it to improved pastures. This is pointed out in Table 1, which shows nearly 80 percent more improved pasture in 1959 than in 1954 and 13 percent less woodland acreage. Since 1959, the trend of pasture improvements in the area has probably been accelerated.

Residents of Madison County like to publicize the county's cattle population. According to them, Madison County has more cattle per acre than any other Texas county. Table 2 tends to support their contention. The number of livestock in the county has increased sharply since 1950, with the exception of dairy cows which have decreased in number. Livestock operators in the area are primarily engaged in cow and calf operations, which call for year round herds of female cattle producing calves for the stocker, feeder, and slaughter markets. Census data show that the cow and heifer population nearly doubled from 1950 to 1959. The number of calves sold in 1959 was barely short of twice the number sold in 1950, and brought almost three times the value.

TABLE 1

NUMBER AND SIZE OF FARMS AMOUNT OF CROPLAND, PASTURELAND, AND CROPS HARVESTED IN MADISON COUNTY IN 1949, 1954 AND 1959 BASED ON AGRICULTURAL CENSUS

	1949	1954	1959
Number of Farms Reporting	1,214	1,145	874
Average Size in Acres	216	255	347
CROPLAND HARVESTED ACRES	28,524	29,867	18,110
Corn			
Acres	10,169	11,198	5,435
Bushels	168,220	206,123	105,645
Hay			
Total Acres	1,816	5,093	4,054
Total Tons	2,656	3,104	4,453
Small Grain Acres	53	1,590	746
Small Grain Tons	66	1,029	579
Wild Hay Acres	294	1,188	2,150
Wild Hay Tons	373	718	2,320
Other Hay Acres	1,469	2,315	1,158
Other Hay Tons	2,217	1,357	1,554
Cotton			
Farms Reporting	432	429	180
Acres	8,961	8,862	4,760
Bales	4,695	3,137	2,435
Cropland Pastured Acres	NA	30,889	35,308
PASTURELAND TOTAL ACRES	222,032	252,000	291,000
Woodland Pastured Acres	NA	97,687	84,622
Improved Pasture Acres	NA	30,604	54,432
Other Pasture Acres	NA	123,782	151,946

TABLE 2

INVENTORY OF MADISON COUNTY LIVESTOCK WITH NUMBER AND VALUE OF LIVESTOCK SOLD IN 1950, 1954, AND 1959 ACCORDING TO AGRICULTURAL CENSUS

	1950	1954	1959
Number of farms with livestock	1,065	1,033	834
Number of cattle and calves	27,144	38,368	41,728
Number of milk cows	3,596	2,517	2,484
Number of cows and heifers	15,931	25,148	27,277
Value of all livestock on farm	919,722	932,307	2,263,087
Number of cattle and calves sold	10,687	16,603	19,590
Number of cattle sold	2,195	2,902	3,091
Number of calves sold	8,492	13,701	16,499
Value of cattle and calves sold	842,023	879,463	2,136,463
Value of cattle sold	258,526	215,197	458,531
Value of calves sold	583,497	644,266	1,677,932

Madison County Study and Control Area

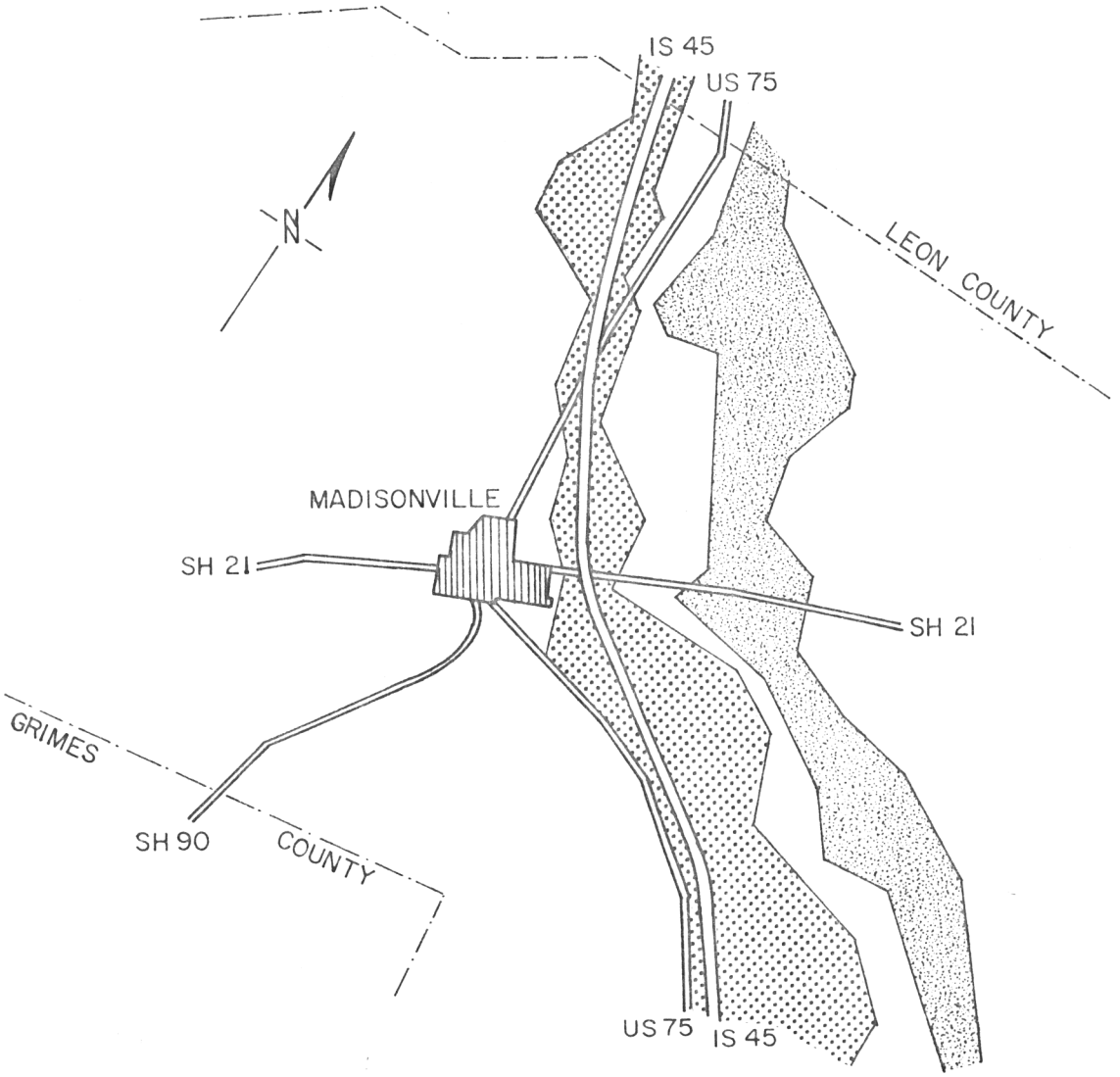
General Description

The study and control areas are approximately 18 miles in length, extending north and south through the county. The general location of the two areas is shown in Figure 1. These areas were very similar in characteristics when the study was begun, but now the control area has a considerable amount of oil and gas activity. The oil activity is gradually moving westward, and in early 1965 land owners in the study area were beginning to receive more favorable oil and gas lease arrangements. At the time the control area was selected, there appeared to be very little difference in the farm operations of the two areas. However, after obtaining production records covering the 1962 operations, it was noticed that the operators in the control area did a little more cash crop farming than the study area operators. The main reason for this is that the control area is nearer the Trinity River and some operators either own or rent additional tracts of land in the better farming area near the river. Since the areas have many other similar characteristics, this one is not considered to be of major importance.

The study and control areas vary considerably in width as a few rather large tracts of land distort each of the areas. Generally, the areas will average about one mile in width.

Study Area Operators

There were 33 operators in the study area who had one or more tracts affected by the right of way acquisition for Interstate 45. Table 3 shows the degree of participation in the study by these operators.



GENERAL LOCATION OF STUDY AND CONTROL AREAS IN MADISON COUNTY

FIGURE 1

TABLE 3

STUDY AREA OPERATORS AND THE DEGREE OF THEIR PARTICIPATION DURING THIS PHASE OF THE STUDY

	1962	1964
Total number of operators that were affected by land acquisition for the highway right of way	33	33
Operators not contacted	9	4
Small operations (not within scope of study)	3	3
Operators not interviewed in 1962[1]	6	--
Contact pending[2]	--	1
Number of operators that were uncooperative	7	9[3]
Number of operators supplying partial information	2	1
Number of operators that furnished complete information	15	19
Number of operators cooperating both years	13	13
Number of operators cooperating only one of the two years	2	6

[1] Right of way negotiations had not been completed at the time of the first interview.

[2] This operator could not be located at the time of the 1964 interview. Information on his operation will be obtained later.

[3] One of the nine operators that cooperated at the time of the first interview refused the second time. One other operator is pending until right of way acquisition has been completed.

After preliminary information on each operator was gathered from various sources in the county, three operators were omitted from the study because their operations were extremely small. In 1962, six additional operators had not completed negotiations with the Highway Department. These owners were not interviewed at that time, but were contacted in 1965 and data gathered on their 1964 operations. In each of these cases, the interviewer tried to obtain information relating to 1962 operations, but found that the operators were unable to document these operations from old records. Therefore, to assure cooperation in 1964, and in the after period, the interviewer did not insist on the operator furnishing data on his 1962 operations.

Seven of the 33 study area operators either refused to participate or furnished only a limited amount of information on their 1962 operations. In the 1965 interviews one operator that cooperated in 1963 refused to cooperate again, and one respondent who cooperated in 1963 was not interviewed pending right of way settlement through the courts.

After all questionnaires covering the 1962 and 1964 operations were edited, it was found that complete and detailed information was obtained from 15 operators in 1962 and 19 operators in 1964. For this interim report, however, only the operations of the 13 operators cooperating in both years will be discussed. In the final report, all operators furnishing information, even if for only one year, will be included in the study. The major part of the analysis, however, will again concern those operators cooperating in each of the three years.

The degree of participation by the control area operators is shown in Table 4. The control area also had 33 prospective operators to be interviewed. In 1963, when the information was gathered for 1962 operations, there were several operators that were not contacted. Two had operations that were considered too small to include in the study, and five others lived in distant cities and could not be reached. In the 1965 interviews, one of the five operators that had been living in a distant city had returned and furnished information covering his 1964 ranching operations.

There were 16 operators furnishing complete data on their 1962 operations and 23 operators cooperating fully in 1964. Of this number, 14 operators furnished detailed information for both their 1962 and 1964 operations. In the final report additional operations will be included and a comparison made of those operators furnishing complete information the last two years of the study.

Characteristics of Operators

The ages of the 13 operators in the study area varied from 31 to 74 years; the 14 control area operators were from 29 to 67 years of age. As shown in Table 5, the average ages of operators in the study and control areas were about the same.

To have a better understanding of the importance of agriculture to each operator, questions were asked pertaining to outside employment and income from sources other than farming or ranching. Study area operators reported that a little less than half of their income was derived from agricultural sources, whereas, the control area operators obtained almost 60 percent of their income from agriculture.

TABLE 4

CONTROL AREA OPERATORS AND THE DEGREE OF THEIR PARTICIPATION DURING 1962 AND 1964 INTERVIEWS

	1962	1964
Total number of operators in the control area having land touching the control line through Madison County	33	33
Number of operators that were not contacted	7	6
Operators living in distant cities	5	4
Small operators (not within the scope of the study)	2	2
Operators that were uncooperative	4	2
Operators supplying partial information	6	2
Operators that furnished complete information	16	23
Operators cooperating both years	14	14
Operators cooperating in only one of the two years	2	9

TABLE 5

CHARACTERISTICS OF THE 13 STUDY AND 14 CONTROL AREA FARM OPERATORS IN MADISON COUNTY

	Study	Control
Average age of the operators (years)	54	51
Percent of income earned from agri. operation	46%	58%
Number of full time operators	7	6
Operators retired	2	1
Operators with part time jobs	1	2
Operators with full time jobs	3	5

Livestock farming as practiced in this area is not as confining as other types of farming. This allows some of the smaller operators an opportunity to supplement their farm income with outside employment. Furthermore, a number of the operators in the areas have full-time jobs, and are using their livestock operations to supplement their incomes. The operators classified in this report as "retired" are those that have retired from industry and are living on small tracts of one or two hundred acres and have a few cattle to occupy their time.

Table 6 presents in detail the acreage and tenure pattern of the 13 study and 14 control area operators. The total acreage in study operations was approximately twice as much as in the control area. Even though the study area ranchers lost land to the right of way acquisition, they acquired additional land between 1962 and 1964 that more than made up the amount sold for highway right of way. However, in both the study and control areas, the acreage owned was less in 1964 than in 1962. The increase in acreage for both areas was due to the operators renting or leasing additional land.

One noticable difference between the two areas is the smaller proportion of rented land operated by the control area ranchers. About one-third of the study area land is classified as rented or leased land as opposed to less than one-fifth in the control area. Some of the lease agreements are for five years, but the common practice is to rent land on a year-to-year basis.

When the operators were first interviewed, there were 35 separate tracts of land being operated by the 13 operators in the study area and

TABLE 6

LAND TENURE OF THE 13 STUDY AND 14 CONTROL AREA OPERATORS FOR THE 1962 AND 64 OPERATIONS IN MADISON COUNTY

	Study Area		Control Area	
	1962	1964	1962	1964
Operators	13	13	14	14
Total Acreage	11,007(35)	11,085(49)	5,684(22)	5,836(25)
Acreage Rented	3,511(9)	3,747(12)	582(4)	1,012(7)
Acreage Owned	7,496(26)	7,338(37)	5,102(18)	4,824(18)
Increased Acreage	---	557(8)	---	508(4)
Acreage Purchased	---	165(4)	---	78(1)
Acreage Rented	---	392(4)	---	430(3)
Reduced Acreage	---	479(22)	---	356(1)
Acreage Sold	---	41(2)	---	356(1)
Rented Acreage Released	---	86(1)	---	---
Acreage Lost to ROW	---	-352(19)	---	---
Number of ROW Tracts	(19)	(32)		
Own	(16)	(27)		
Rent	(3)	(5)		
Other Tracts	(16)	(17)		

22 tracts operated by the 14 control area operators. Tracts of land additional to those located in the study and control areas were scattered throughout the county, with some located in adjoining counties. A few operators had more than one tract of land affected by the highway right of way.

Operators in the study area were faced with the problem of adjusting their operations when the 13 additional tracts were created by the highway route cutting through their operatorships. As shown in Table 6, the 13 study area operators had 19 tracts of land that were affected by the right of way acquisition. Not all of the 19 tracts were severed, but after right of way acquisition there were a total of 32 separate tracts of land, instead of the 19 that existed previously.

There is very little variation between the two areas in acreage totals from 1962 to 1964. However, four tracts were purchased and four rented by the study area operators, while one tract was purchased and three rented by the control area operators. The tracts added to the operations more than offset the decrease in acreage through sales or release of rented land. The 352 acres of land sold for the highway right of way represented the major part of the 479 acres disposed of by the study area operators.

Land Use

Land use by both the study and control area operators in 1962 and 1964 generally followed the same pattern as the whole county as revealed by data from the agricultural census. Table 7 presents a comparison of cropland and pasture land acreage between the study and control area tracts. Only a small amount of the land in the study area was classified

TABLE 7

MAJOR USES OF LAND OPERATED BY THE 13 STUDY AND 14 CONTROL AREA RANCHERS THAT FURNISHED COMPLETE INFORMATION FOR BOTH 1962 AND 1964 OPERATIONS

	Study Area		Control Area	
	1962	1964	1962	1964
Total Acres of Land Operated	11,007(13)	11,085(13)	5,684(14)	5,836(14)
Acres of Land in Cropland	507(5)	691(10)	1,252(12)	1,337(13)
Cropland Harvested (Acres)	172(3)	470(9)	343(7)	250(8)
Cropland Used for Pasture	223(3)	68(3)	865(8)	998(11)
Cropland in Grain or Soil Bank Program	112(1)	153(2)	44(2)	89(4)
Total Acreage in Pasture	10,467(13)	10,363(13)	4,400(14)	4,451(14)
Acres in Improved Pasture	1,162(5)	1,499(7)	1,645(5)	1,439(5)
Acres of Cleared Unimproved Land	7,542(13)	7,095(13)	888(9)	1,028(9)
Acres of Woodland	1,763(13)	1,769(12)	1,867(14)	1,984(13)
Acres of Other Land Idle and in Buildings	33(10)	31(10)	32(13)	48(14)

Numbers in parentheses represent the number of operators reporting the specific item.

as cropland, while about 20 percent of the control area land was so classified.

This does not necessarily mean that a crop was harvested from this land during either of these two years. Land may be classified as cropland even though it has not been farmed for a number of years. If the land has been used in the production of crops, and is still suitable for such use it may be classified as cropland. This is the status of much of the designated cropland in the Madison County area. It was found in the study and control areas that the majority of cropland was being used to graze livestock during various seasons of the year. A common practice was the planting of small grain or permanent grasses on cropland in order to furnish supplementary grazing for livestock.

Small grains are frequently planted in the fall to provide winter grazing for livestock. This same land might be planted the following spring in a summer grazing crop, such as sudan. Also, some cropland is converted to pasture land by planting improved varieties of grasses, such as coastal bermuda. These operators not only benefit from abundant grazing during the year, but also may harvest hay for winter feed. This dual use of cropland in the study area accounts for the increase in the number of acres of cropland harvested in the study area in 1964.

A few of the operators in both areas participated in government programs and had small acreages in the "soil bank" and grain programs. The increased number of participants in the government program in 1964 was the result of a new deferred grain acreage program that was not in effect in 1962. In this program, farmers receive an acreage payment for reducing grain acreage.

At the time the 1964 information was gathered, it was obvious that the operators in both areas were concentrating on improving their pasture land. Table 7 reveals that the study area operators increased the amount of improved pasture from 1962 to 1964, while the control area had fewer acres. However, the control area operators had approximately 25 percent of their land in improved pastures, while the study area operators had only about 13 percent of their total land devoted to this use.

It is too early to conclude that increases in pasture improvement by study area operators might have resulted from the added capital received from the right of way acquisition payments being used to intensify land use.

The trend in the area in 1965 is to clear woodland and to establish improved pastures. This is being done in both areas, but according to Table 7, the amount of acreage in woodland was increased in both areas. This increased woodland acreage is a result of the operators acquiring additional land between 1962 and 1964. In most cases, this was unimproved woodland that probably will be cleared as availability of capital permits.

Livestock Operations in the Study and Control Areas

Table 8 illustrates the relative importance of livestock operations for the study and control areas in Madison County. The full time operators in both areas depend heavily on their livestock enterprises for their income.

The 13 ranchers in the study area reported that they owned 2,042 head of cattle and calves at the end of 1964 compared to 1,727 head

TABLE 8

NUMBER AND VALUE OF LIVESTOCK OWNED, SOLD AND PURCHASED BY
THE 13 STUDY AND 14 CONTROL AREA OPERATORS IN MADISON COUNTY FOR 1962 AND 1964

	Study Area				Control Area			
	1962		1964		1962		1964	
	No.	Value	No.	Value	No.	Value	No.	Value
Number & Value of Cattle & Calves on Farm	1727	$206,910	2042	$169,892	914	$136,925	1050	$125,385
Number & Value of Cows, Bulls & Heifers on Farm	1263	189,360	1493	153,962	743	124,900	871	115,545
Number & Value of Calves on Farm	464	17,550	549	15,930	171	12,025	179	9,840
Number & Value of Cattle & Calves Sold	850	$ 78,810	986	$ 82,404	487	$ 39,450	394	$ 36,377
Number & Value of Cows, Bulls & Heifers Sold	25	5,625	119	13,180	4	800	84	11,228
Number & Value of Calves Sold	825	73,185	867	69,224	483	38,650	310	25,149
Number & Value of Cattle & Calves Purchased	140	$ 24,950	55	$ 6,513	37	$ 4,795	128	$ 12,074
Number & Value of Cows, Bulls & Heifers Purchased	132	24,630	55	6,513	28	4,260	110	10,955
Number & Value of Calves Purchased	8	320	----	--------	9	535	18	1,119

at the end of 1962. The 14 control area ranchers had 1,050 head in 1964 and 914 head in 1962. This amounts to an increase of about 20 head from 1962 to 1964 for each study area rancher and 10 head for each control area rancher. In 1962 study area operatorships averaged 137 head of cattle and calves in 1962, compared to an average of 65 head for control areas. The averages were increased to 157 and 75 head in 1964 for study and control areas respectively. Part of the increases can be explained by the pricing structure in the fall of 1964. Because of low prices, some calves were held over for sale in 1965. Some land owners receiving money for right of way settlement in 1964 also mentioned that they had held over some of their 1964 calves for income tax purposes. This is reflected in the calf inventory shown in Table 8. Study area ranches had about 18 percent more calves on hand at the end of 1964 than they did at the end of 1962.

As a general rule the study area ranchers sold more cattle in 1964 than they did in 1962. In contrast, in the control area fewer livestock were sold in 1964 than in 1962. There is no explanation at this time for the variation in sales activities between the two areas. The value of calves sold was less in 1964, due primarily to the lower cattle prices. The study area ranches averaged around $10 per head less for their calves in 1964 than they did in 1962, while the control area group reported that their calves brought about the same per head each year. Some of the control operators stated that they had fed their calves longer in 1964 in an attempt to offset the cheaper price per pound by selling heavier calves. By doing this the control ranchers were able to hold the average price per head up around the 1962 level.

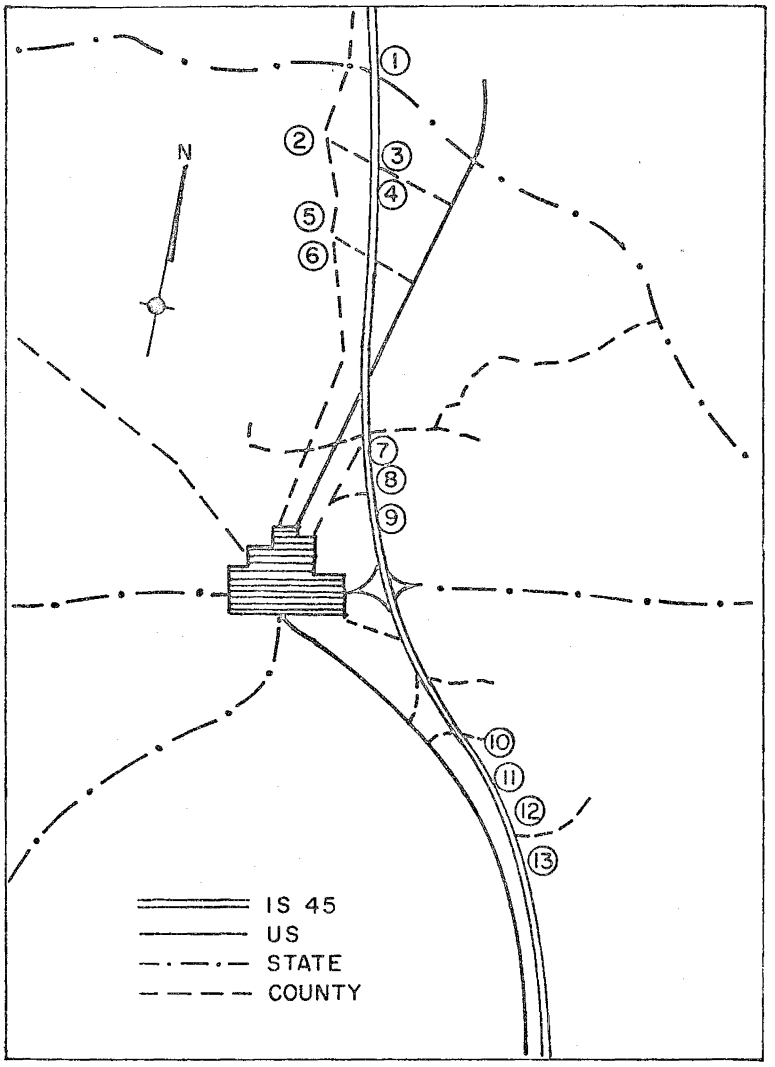
Cattle purchases varied between the two areas from 1962 to 1964. The study group purchased fewer cattle in 1964 then 1962 while the control group purchased more in 1964 than they did in 1962. This possibly could be related to the loss of the right of way land which caused the study group to restrict their purchases of female cattle.

Travel Characteristics to Nearest Town

Since the new Interstate highway has not been completed at this time, distances and routes taken by operators to the nearby shopping center (Madisonville) have been assumed. Distances and routes from headquarters tract to Madisonville were estimated for each study area operator. After analyzing each operator's travel distance and route to Madisonville, it was determined that travel conditions of only 13 were affected. The general location of these 13 operators are shown in Figure 2. The other 20 operators were not affected in any way, as they either lived in town or lived on tracts where their routes to town were not altered.

In general, due to the geographical relationship between Madisonville and Interstate 45, those operators along the northern segment of the new facility experienced a decrease in the distances to Madisonville, while those operators along the central and southern segments experienced an increase.

The effects of the new highway on travel distances to and from Madisonville is shown in Table 9. These distances are classified by the type of road used by each individual "before" and "after" the Interstate is completed. The 13 operators would save only 1.5 miles as a whole, but



GENERAL LOCATION OF THE 13 STUDY AREA OPERATORS IN WHICH THEIR TRAVEL TO MADISONVILLE WAS AFFECTED BY INTERSTATE 45

FIGURE 2

TABLE 9

DISTANCES BY TYPE OF ROAD TO NEAREST SHOPPING CENTER (MADISONVILLE)
FOR THE 13 STUDY AREA OPERATORS THAT WERE AFFECTED BY
THE CONSTRUCTION OF INTERSTATE 45 THROUGH MADISON COUNTY

Operator	Types of Roads											Miles Saved (+) or Lost (-) Due to the Construction of IS 45
	Interstate Highway	U. S. Highway		State Highway		County Road		Private Road		Totals		
	After	B	A	B	A	B	A	B	A	B	A	
1	5.8	9.4	4.3	2.0	0.6			0.3	0.3	11.7	11.0	+ .7
2	4.2	8.5	4.3			3.3	1.6			11.8	10.1	+1.7
3	4.2	8.6	4.3			1.5	0.2			10.1	8.7	+1.4
4	4.2	8.5	4.3			1.3	0.4			9.8	8.9	+0.9
5	2.7	6.9	4.3			1.7	0.4			8.6	7.4	+1.2
6	2.7	6.9	4.3			1.8	0.6			8.7	7.6	+1.1
7	0.7	3.9	4.5			0.3				4.2	5.2	-1.0
8	2.2	1.2			3.2	2.7	0.1			3.9	5.5	-1.6
9	2.2	1.2			3.2	2.6	0.1			3.8	5.5	-1.7
10	3.8	5.2			1.9			0.7	0.4	5.9	6.1	-0.2
11	4.3	5.6			1.9			0.5	0.1	6.1	6.3	-0.2
12	4.7	5.6			1.9			0.3		5.9	6.6	-0.7
13		6.1	6.5		0.3			0.7	0.1	6.8	6.9	-0.1
TOTALS	41.7	77.6	36.8	2.0	13.0	15.2	3.4	2.5	0.9	97.3	95.8	+1.5

The distances shown are assumed ones. They are based on the shortest possible route that a given operator could take to and from Madisonville.

of more significance is the reduction in distances traveled on unpaved roads by utilizing the new facility. Before the facility was built, this group had to travel 17.72 miles on unpaved roads as compared to only 4.16 miles after the completion of the new facility. This is based, however, on the assumption that the individual will use the shortest and best route to town.

Operators 7 through 13 in Table 9 will be forced to travel an additional 5.41 miles on trips to Madisonville, but they will benefit by having 6.79 miles less of unpaved roads. This may be considered as a substantial savings to the individual in terms of time, comfort, and convenience as well as in the repair and maintenance of equipment. It will particularly benefit one operator served by a county road that was almost impassable during wet weather. He will be required to travel 1.6 miles farther after the completion of the facility, but will have only 0.1 mile of unpaved road compared to 2.7 miles before the new route cut through his land.

The overall quality of roads utilized by the 13 operators was elevated by the introduction of 41.66 miles of Interstate highway for travel to and from Madisonville. We may tentatively conclude, therefore, that despite the increased distances experienced by seven of the operators, the net result of the construction of Interstate 45 may be a net benefit for the entire group in their day-to-day travel, safety, comfort, and economy.

Distances to Severed Right of Way and Non-Right of Way Tracts

Distances from each operator's headquarters to other tracts of land in his operation were determined for both 1962 and 1964. The other tracts of land include both severed and non-right of way tracts. It was found that 15 of the operators listed in Table 10 had tracts in 1964 for which distances from headquarters had been altered by the construction of the Interstate Highway.

After the highway right of way was fenced and construction begun, operators of severed tracts were faced with operating conditions quite different from those that they were accustomed to in 1962. Since most of the severed tracts were being grazed in 1964, extra trips were required to move or care for livestock on the severed parcels. Normal management included either hauling feed to severed tracts on a regular basis during the winter months or the building of feed storage facilities on these tracts. Even with storage facilities the operators was still required to make special trips to feed the livestock. As an alternative to extra trips during the winter months, the cattle could be moved to headquarters; however, this involves additional management decisions concerning alternative costs.

These ranches were operating 25 right of way tracts and 22 non-right of way tracts in 1964 as shown in Table 10. Four additional operators had right of way parcels that were classified as headquarters tracts. Since these tracts were not severed they were not included in this analysis.

Fifteen of the operators along the route experienced increased distances to both severed and other tracts and had to travel 32.8 additional

TABLE 10

CHANGES IN DISTANCES TO SEVERED AND OTHER TRACTS FROM HEADQUARTERS DURING CONSTRUCTION OF IS 45 IN MADISON COUNTY

	Increased Distances to Severed R.O.W. Tracts (Miles)	Distances to R.O.W. Tracts Unchanged (Miles)	Increased Distances Non-R.O.W. to Tracts (Miles)	Distances to Non-R.O.W. Tracts Unchanged (Miles)
1	0.89(1)[1/]			1.1(1)
2	2.07(1)			
3	1.00(3)			
4	1.64(1)	.16(1)		21.3(2)
5	.69(1)			11.9(1)
6	1.58(2)			6.2(2)
7	3.70(1)	.1 (1)		1.0(1)
8	0.40(1)			4.2(1)
9	4.40(2)			4.2(1)
10	1.2 (1)			6.6(3)
11	.3 (1)	3.9 (1)		4.2(1)
12	0.40(1)			0.5(1)
13	0.80(1)		2.0(3)	
14	0.40(1)			21.3(1)
15	13.30(4)			
Totals	32.8 (22)	11.3 (3)	2.0(3)	101.6(19)
Number of Operators	15	3	1	12
Average Distance Per Operator	2.2	1.4	2.0	8.5
Average Distance Per Tract	1.5	1.4	.67	5.4

[1/] Figures in parentheses represent number of tracts involved.

miles to reach the 22 tracts of land created by severance of the original parcels. These distances represent only one way trips from a designated headquarters tract to the severed parcels. It amounts to an average of 2.2 miles of extra driving required for each operator, or 1.5 miles per tract (as shown in Table 10). After the new highway is completed, further increases in distances are anticipated since the operators may cross the Interstate route only at the designated crossovers. During the construction period crossings of the Interstate Highway were much less restricted.

Three operators had other tracts affected by the right of way acquisition but distances from headquarters to these tracts were not changed. Only corners of the parcels were acquired and routes to the tracts were not affected by construction.

Operators of eight additional tracts were not included in Table 10 because they had not experienced any changes in travel due to the construction of Interstate 45.

Table 10 also shows 12 operators with tracts of land in other parts of the county. These parcels were not physically affected by Interstate 45. When the new highway was routed through the county it did affect travel on some county and private roads intersected by Interstate 45. During construction of crossovers, traffic on some of the county routes was detoured to other roads. In most cases, however, the contractor provided grade level crossings at intersections. This enabled the local residents to continue using the county and private roads while the highway was under construction. After the facility is completed, a number of these county and private roads will not have crossovers; the residents will then have to drive additional miles to the nearest overpass in order to cross Interstate 45.

Most of the operators in the study area had other tracts scattered throughout the county. Eleven of these operators did not experience any change in their regular routes to their various non-right of way tracts. The average distance to each of these tracts was 5.4 miles which tends to illustrate the wide dispersion of Madison County operations. Only one rancher experienced a distance change in his operation during the construction of Interstate 45. This operation included three tracts for which the total distance was increased by two miles or .67 miles per tract.

In general, the travel habits of the operators were affected during the construction period. The distances to severed and non-right of way tracts probably will show further increases after Interstate 45 is completed. In many cases the improved quality of roads in the area will help offset the travel inconveniences.