INTERIM STUDY REPORT

DATA PROGRESS REPORT OF THE RIGHT OF WAY ACQUISITION EFFECTS ON THE REMAINING RURAL FARMS AND RANCHES ALONG IS 35E IN ELLIS COUNTY

by

Hugo G. Meuth

Study No. 2-15-63-58

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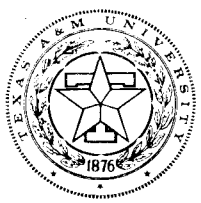
JANUARY 1967



TEXAS TRANSPORTATION INSTITUTE

Texas A&M University

College Station, Texas

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FOREWORD

This subject matter progress report has been prepared to fulfill one of the objectives of the project for the 1965-66 fiscal year. This report is tentative in nature and covers the research methodology, background information and preliminary findings in the Ellis County area. This area is the second of three areas selected in Texas to study the effects of right of way acquisition on remaining rural farms and ranches.

Since this report covers only the "before" and "during" phases of the study for Ellis County, the findings and analyses are not conclusive and should not be used or referred to as final results.

DATA PROGRESS REPORT OF THE RIGHT OF WAY ACQUISITION EFFECTS ON THE REMAINING RURAL FARMS AND RANCHES ALONG IS 35E IN ELLIS COUNTY

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 of background information developed from personal interviews with the control area operators and operators of land affected by right of way acquisition for Interstate 35E in Ellis County. Information gathered from the operators pertained to their 1963 and 1965 operations. The 1963 data represent the period prior to acquisition which will be referred to as the "before" period. The 1965 data represent the period of construction. This period will be referred to as the "during" period.

Statement of the 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. 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 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 operations 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 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 operations. Increased knowledge of values, potential damages, and economic consequences should permit more thorough appraisals for right of way purposes and should also be of considerable assistance in right of way negotiation.

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.

In view of information already obtained 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 emphasize 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 units, tenure and intensity of operations,
3. Cost of adjustments to new farm and ranch operating conditions, and
4. Changes in farm income caused by decreasing farm acreage and division of units into separate tracts.

Methodology

Library Research

Before field work was planned, a review of material pertaining to land acquisition developed in previous 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 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 deal with "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, 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 agricultural 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.

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 plan.

Those areas found suitable for study were further examined with officials in the district offices. If the district approved the selected areas, 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 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 practices include 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 may 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

The first area selected for study is situated along Interstate 45 in Madison County. A preliminary report covering the "before" and "during" periods on this area was furnished the contracting agencies in 1965. Further information will be gathered from the operators during the spring of 1967 and the final report prepared by September 1967.

The second study area is located along Interstate 35E in Ellis County and was selected in order to represent an intensive farming area. This area will be discussed in more detail later in this report.

The third area, selected in 1965, is a ten mile section along Interstate 10 in Colorado and Fayette Counties. The area extends eastward from a point about three miles east of Schulenburg, Texas, to a point about six miles east of Weimar. This area was selected to represent the diversified farm and ranch operations of Texas. The new

route of Interstate 10 is parallel to, and south of U. S. Highway 90. It intersects Highway 90 at the study area's west boundary and again on the east boundary. Operators in this area are considered diversified operators, but in the last few years they have been gradually shifting to various kinds of livestock enterprises for the major part of their income. A few of the operators plant cash crops, but, generally, the crops produced are feed crops used in their livestock operations.

Background and production information covering 1964 operations was obtained from the operators in the study and control areas by personal interview in 1965. This information should provide a good picture of each operator's agricultural practice prior to the acquisition of land for the new highway. The information gathered from these operators reveals that most of the farms in the area can be classified as family size units. There are a few rather large operators in the areas and a small number of part-time farmers that have full-time off the farm jobs.

ELLIS COUNTY AREA

Ellis County is located about 20 miles south of Dallas, Texas. This area lies in the Blackland Belt which is commonly called the Blackland Prairie of Texas. The general location of the area is shown in Figure 1.

The terrain of this county is generally rolling with some level or flat land. The many small streams cutting through the area create soil erosion problems during heavy rains. Therefore, most of the landowners in the area have constructed terraces and sodded water ways to help prevent soil erosion.

The smoother, deeper soils on the divides between the streams and the well-drained terraces and bottoms along streams are heavily cropped to cotton and grain sorghum. These are the two major cash crops for this area with grain sorghum rapidly gaining in importance. Many operators in the area have added livestock, mainly cattle, to their operations, thereby becoming more diversified. They utilize the water ways for grazing, supplemented with small grain in the winter and sudan, or similar grazing crop, in summer. There is also a trend for the less fertile cropland to be converted into permanent pastures. At this time, coastal bermuda is the most popular grass that is being used in establishing permanent pastures. It provides abundant grazing when properly managed and fertilized.

Definite trends in this area have been noted over the past decade, some of which can be seen in Table 1. In keeping with national trends, the number of farms in Ellis County has decreased, and the average size

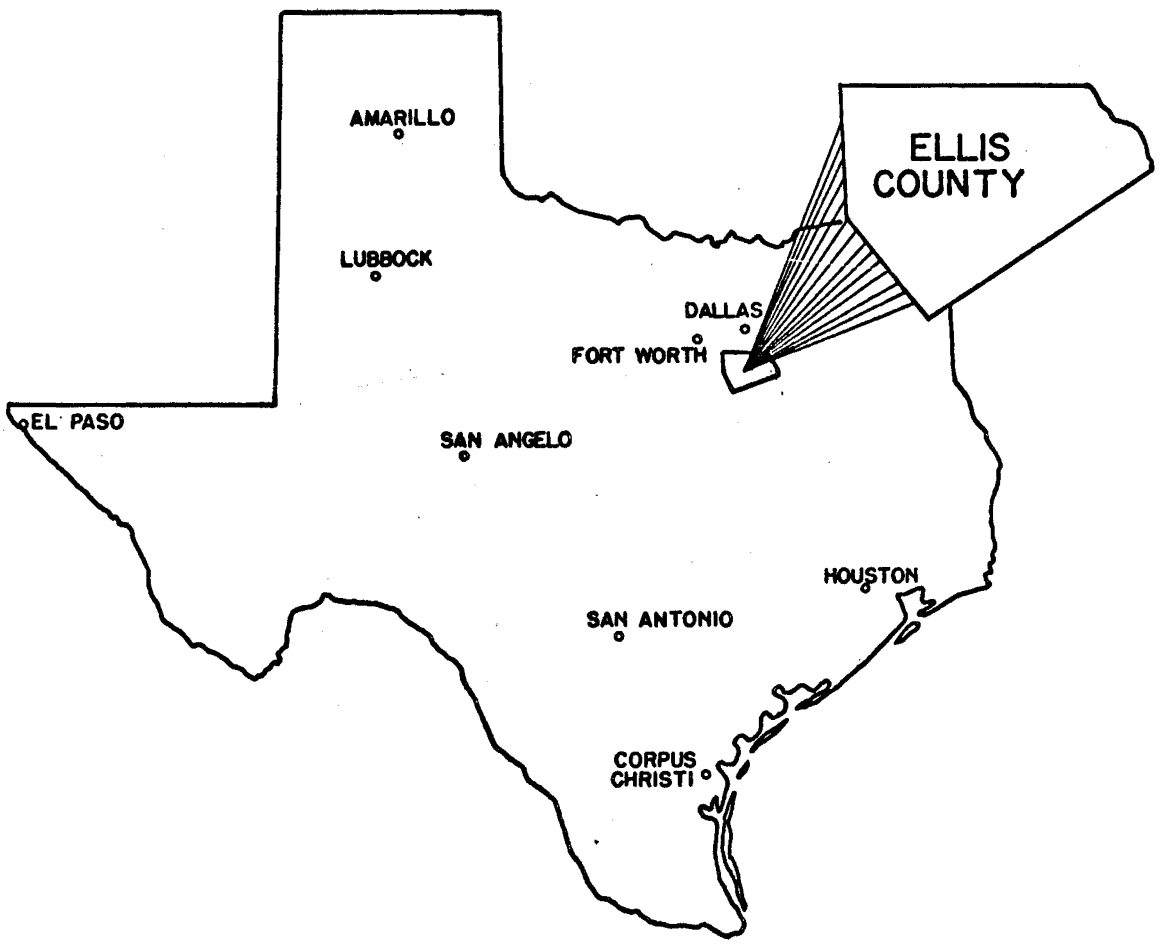

AMARILLO
ELLIS
COUNTY
LUBBOCK
DALLAS
FORT WORTH
EL PASO
SAN ANGELO
HOUSTON
SAN ANTONIO
CORPUS
CHRISTI

FIGURE 1

TABLE 1

NUMBER AND SIZE OF FARMS, AMOUNT OF CROPLAND, PASTURELAND, AND CROPS HARVESTED IN ELLIS COUNTY IN 1954, 1959, AND 1964, BASED ON THE AGRICULTURAL CENSUS

	1954	1959	1964
Number of Farms Reporting	2,885	2,074	1,734
Average Size in Acres	196	258	301
Cropland Harvested Acres	289,271	262,911	234,007
Corn			
Acres	28,101	23,865	6,729
Bushels	434,626	583,392	175,345
Cotton			
Acres	148,754	119,022	109,086
Bales	37,676	45,903	45,179
Hay Crops			
Acres	34,849	31,344	36,698
Tons	24,004	33,643	40,639
Small Grains			
Acres	Not Available	36,197	34,603
Bushels	Not Available	786,682	815,885
Sorghum			
Acres	13,794	45,473	40,770
Tons	7,297	32,680	44,244
Cropland Pastured Acres	58,640	50,599	47,391
Pastureland Total Acres	139,843	154,037	191,348
Woodland Pastured	14,883	7,433	6,462
Woodland Not Pastured	2,200	2,730	1,102
Other Pasture*	122,760	143,874	183,784
Improved Pasture	25,557	15,487	83,028

*Not Cropland and Not Woodland.

has increased. From 1954 to 1964 there was a 39 percent decrease in the number of farms and a 54 percent increase in the size of each farm. The use of larger and improved equipment is a big factor enabling operators to farm more land.

Trends are also evident in the type of crops being harvested in the area. The biggest change in crops harvested was a shift from corn to grain sorghum. Ellis County farmers found grain sorghum to be more suitable and more profitable to produce than corn and altered their production accordingly. In 1954, the number of acres planted in corn was 28,101 as opposed to only 6,729 acres of corn in 1964, or a decrease of 76 percent, while the acres planted in grain sorghum increased 196 percent over the ten year period. Cotton production, due to increased yields through the use of fertilizer and improved insecticides, has remained fairly stable during the period even though cotton acreage declined about 26 percent. Similarly, hay production, due to improved varieties of hay and the increased use of fertilizer, has significantly increased, while hay crop acreage has remained comparatively stable.

There has been a shift in the utilization of land from cropland to pastureland. A decrease of 55,264 acres in cropland harvested occurred from 1954 to 1964, while pastureland shows an increase of 51,505 acres during the same period. Accompanying this was a 57,471 acre increase in improved pasture.

Ellis County operators, although crop farming remains their primary activity, are steadily increasing their livestock operations. (Table 2.) Operators in 1964 sold nearly twice as many cattle and

TABLE 2

INVENTORY OF ELLIS COUNTY LIVESTOCK WITH NUMBER AND VALUE OF LIVESTOCK SOLD IN 1954, 1959, AND 1964, ACCORDING TO THE AGRICULTURAL CENSUS

	1954	1959	1964
Number of Farms with Livestock	2,029	1,591	Not Available
Number of Cattle and Calves	42,411	46,068	63,175
Number of Milk Cows	4,239	2,540	1,871
Number of Cows and Heifers	23,313	23,575	31,213
Number of Cattle and Calves Sold	23,086	25,075	54,245
Number of Cattle Sold	7,978	8,093	18,734
Number of Calves Sold	15,108	16,982	35,511
Value of Cattle and Calves Sold	$1,590,090	$3,207,317	Not Available
Value of Cattle Sold	$ 685,193	$1,341,244	Not Available
Value of Calves Sold	$ 904,897	$1,866,073	Not Available

calves as ten years earlier, and increases are evident in every livestock phase except dairy operations.

ELLIS COUNTY STUDY AND CONTROL AREAS

General Description

The study area is located in the southern part of Ellis County. Its northern boundary is approximately one mile south of Waxahachie and the area extends in a southwest direction along Interstate 35E for about 20 miles to the Ellis-Hill County line. The Interstate Highway in the study area by-passes three small towns which are served by Highway 77. As may be seen in Figure 2, these towns are Forreston, Italy, and Milford, going from north to south. Interstate 35E passes to the west of each town, missing Forreston and Milford by about one-tenth mile, and Italy by about one-half mile.

About seventy-five percent of the study area is excellent farm land with deep, black soil, the major portion of which is in cultivation. Many of the farms are not fenced, indicating the practice of only intensive cropping. However, the soil in about three miles of the section, two in the extreme south and one in the north, is rather shallow, with an outcropping of white rock. This land is mostly pasture land, and is supplemented by some small grains, such as oats and wheat, which are planted on portions of the cropland. Another section which is not suitable for cropland, is about one mile in length and is near Forreston. This section is creek bottom, which is subject to overflow and is practically all used as pastureland.

Parallel to and about two miles east of the study area is the control area. It is bounded on the north by Lake Waxahachie and on the south by the Ellis-Hill County line.

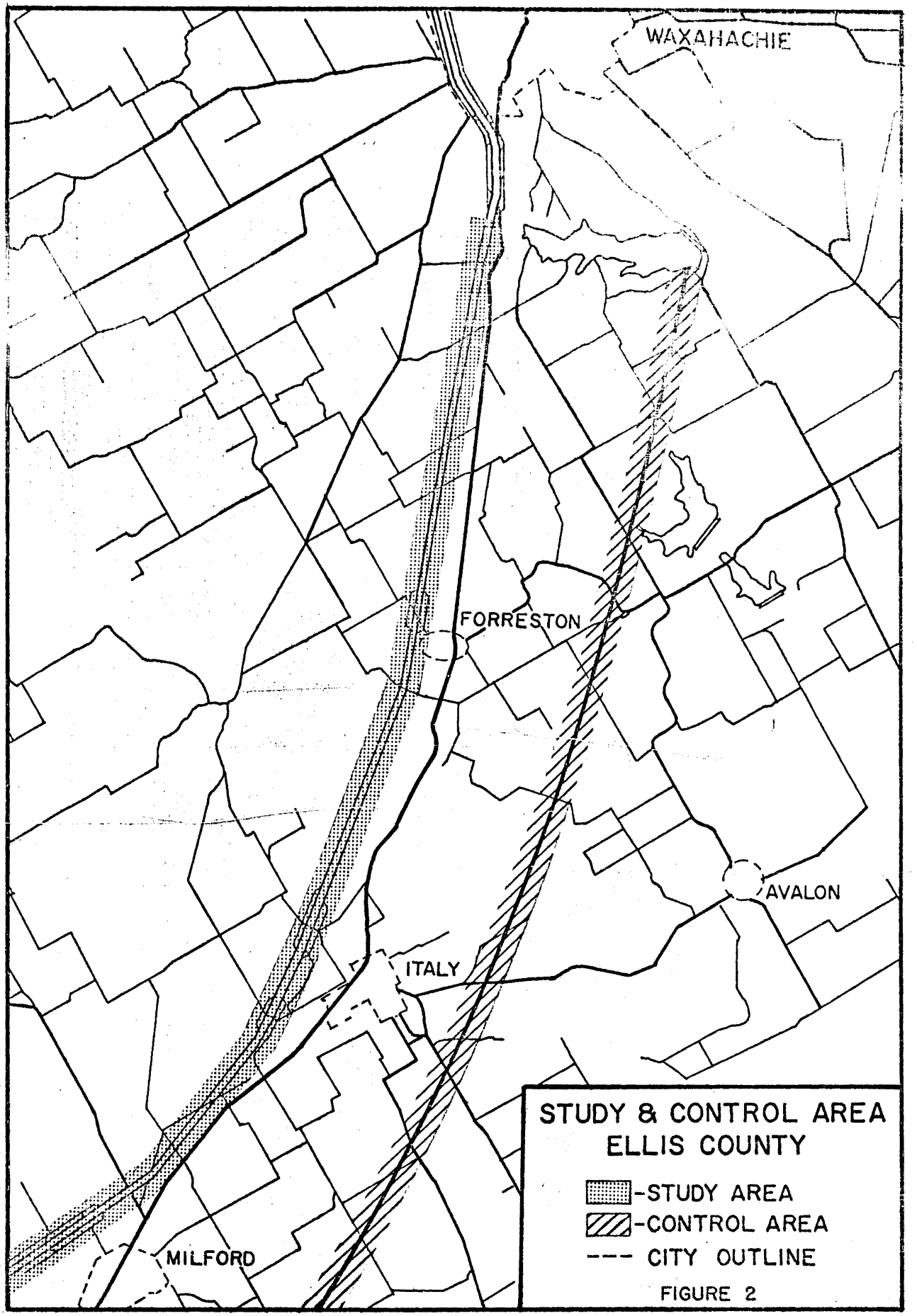
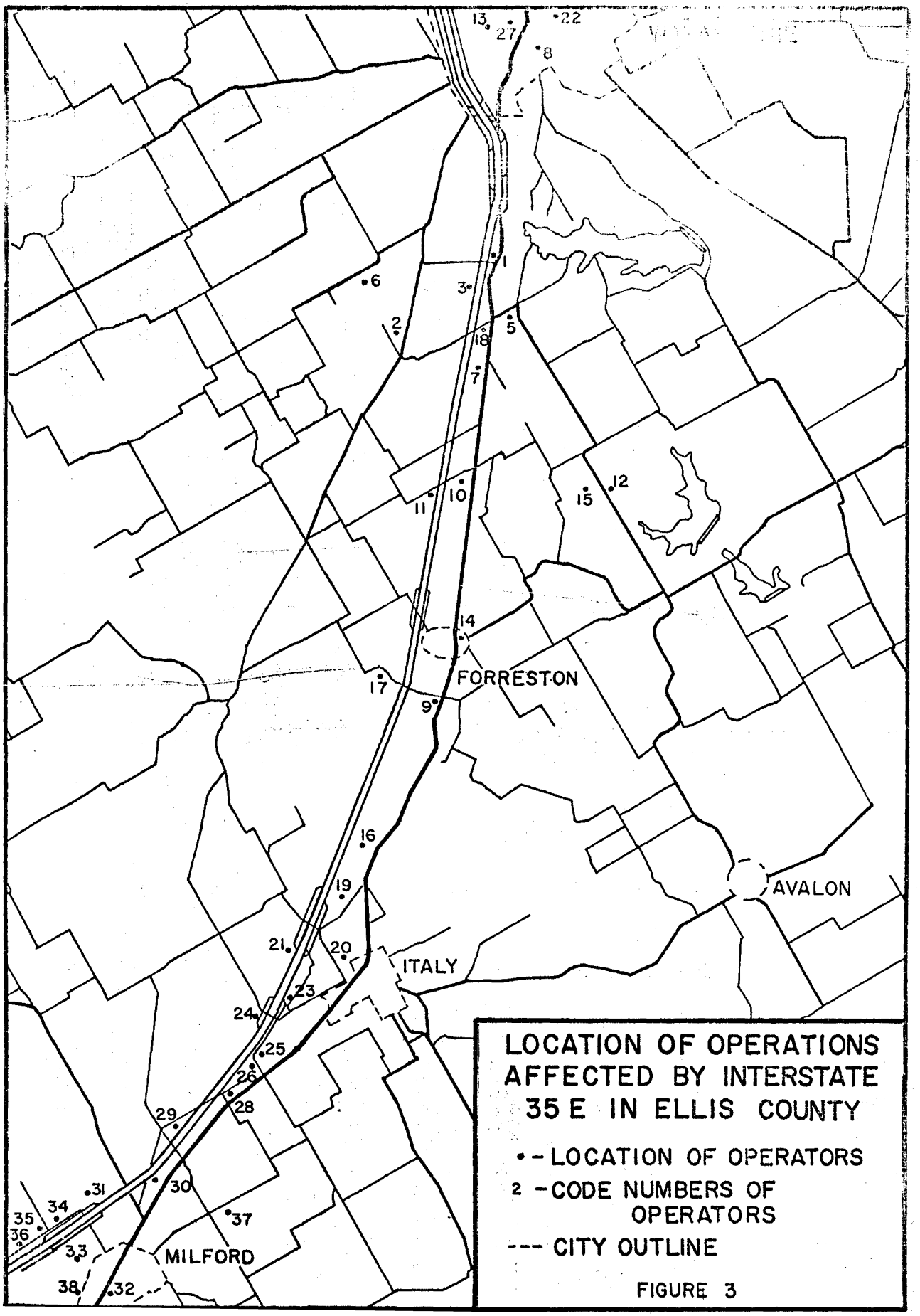

WAXAHACHIE
FORRESTON
AVALON
ITALY
MILFORD
STUDY & CONTROL AREA
ELLIS COUNTY
-STUDY AREA
-CONTROL AREA
--- CITY OUTLINE

FIGURE 2


13
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FORRESTON
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AVALON
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ITALY
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31
34
35
36
37
33
MILFORD
38
32
LOCATION OF OPERATIONS AFFECTED BY INTERSTATE 35 E IN ELLIS COUNTY
• - LOCATION OF OPERATORS
2 - CODE NUMBERS OF OPERATORS
--- CITY OUTLINE

FIGURE 3

The land in the control area appears to be less rolling than that of the study area. Also, the control area is characterized by more uniformity of the soil, the deep, black soil extending from the northern to the southern sections, and has very little outcropping of the white rock characteristic of portions of the study area.

The study and the control areas vary in width, because of the existence of both large and small tracts. Generally, the main body of each area averages about one-half mile in width. However, the operators in both areas farm land all over the county, so it is difficult to set definite boundaries. In fact, it is very common in this area for operators to farm tracts of land which are four and five miles away, with some operators farming tracts as far as fifteen miles from their headquarters.

Study Area Operators

There were 47 operators in the study area who had one or more tracts of land affected by the right of way acquisition for Interstate 35E. After preliminary information on each operator was obtained from various sources in the county, five operators were omitted from the study. This omission was deemed necessary because of their extremely small operations, and because the operators were primarily engaged in non-agricultural activities.

Of the 42 operators interviewed in 1964, complete information was gathered from 30 operators, as is shown in Table 3. The remaining 12 operators were interviewed in 1964 by the first project leader, but information was obtained only on tracts affected by the right of way,

TABLE 3

STUDY AREA OPERATORS AND THE DEGREE OF THEIR PARTICIPATION DURING THE FIRST TWO PHASES OF THE STUDY

	YEARS	
	1963	1965
Total number of operators that were affected by land acquisition for the highway right of way	47	47
Number of operators not contacted[1]	5	5
Number of operators interviewed	42	42
Number of operators supplying partial information	12[2]	3
Number of operators non-cooperative	0	2
Number of operators that quit farming		1
Operators with limited or no information	12	6
Number of operators furnishing complete information	30	36
Number of operators furnishing complete information for both years	27	27

[1]These tracts of land were small non-agricultural land.

[2]Ten of these operators were interviewed by previous project leader and information was gathered only on right of way tracts.

just a portion of the farmers' complete operations. All information gathered later covered a farmer's entire operation, whether it was conducted on one tract of land or several scattered tracts. This was necessary in order to determine the importance of the right of way taking to a farmer's overall operations.

In the 1966 interviews, an effort was made to obtain information relating to the 1963 operations of those 12 farmers on which only partial data were previously gathered. This attempt proved fruitless, as the operators were unable to document their 1963 operations from their old records. Therefore, to avoid irritating the operators and to assure cooperation in 1966 and 1967, the interviewer did not insist on the operators furnishing the 1963 data. The number of operators supplying partial information was reduced to three during the 1966 interviews. However, two operators who cooperated in 1964 would not reveal information relative to their 1965 operations during the second period of interviewing.

Table 4 shows the degree of participation by the control area operators. The control area had 48 operators with land touching the control line drawn through the county. Four operators were not interviewed since they were absentee owners and used the land only as a weekend retreat or hobby farm. This left 44 operators to be interviewed, of which 41 were most cooperative and furnished complete information on their entire operations. There were two farmers who considered information regarding their farming too personal to reveal and would not cooperate in this study. One other operator answered general type questions only.

TABLE 4

CONTROL AREA OPERATORS AND THE DEGREE OF THEIR PARTICIPATION DURING THE 1963 AND 1965 INTERVIEWS

	YEARS	
	1963	1965
Total number of operators in the Control Area having land touching the Control Line through Ellis County	48	48
Number of operators that were not contacted[1]	4	4
Number of operators that were contacted	44	44
Uncooperative operators	2	2
Number of operators supplying partial information	1	1
Number of operators that are no longer farming	-	3[2]
Number of operators furnishing complete information	41	38
Number of operators furnishing complete information for both years	38	38

[1] These operators lived in distant cities and used the land as a hobby ranch. Actually, the land was not used intensively.

[2] Two of these operators retired from farming and the other gave up his leased land and sold his cattle.

Information for this report is based primarily on data obtained from operators who supplied complete information both years. In the final report, however, all operators supplying information, either complete or partial, will be considered in the analysis.

Characteristics of Operators

Shown in Table 5 are a few characteristics of the study and control area operators that were considered pertinent in evaluating the importance of agricultural operations to each operator. Age can be a major factor in determining the farm operator's outlook and planning as well as the longevity of his operations. In some cases, the operators had reached retirement age and were looking for a good reason to retire. Fortunately, only one study area operator retired between the first and second interview. Two operators in the control area ceased operations during this time.

The average age of the operators in the two areas is about the same. Age in the study area ranged from 35 to 84 years, while the ages of the control area operators varied from 25 to 85 years. Even though there were three operators retiring in the areas, neither the 84 or 85 year old operators retired. They were still actively engaged in farming at the time of the last interview. The 85 year old operator had an opportunity to retire in 1965 after selling his two tracts of land that were cut by the highway route. Rather than retire, however, he purchased a larger tract located about two miles from Interstate 35E. At the time of the second interview, he was busy building fences on his new 75 acre tract. He is drawing Social Security, but is still

TABLE 5

CHARACTERISTICS OF ALL STUDY AND CONTROL AREA OPERATORS THAT SUPPLIED EITHER PARTIAL OR COMPLETE INFORMATION REGARDING THEIR 1963 OR 1965 OPERATIONS

	STUDY		CONTROL	
	1963	1965	1963	1965
Average Age of Operators	52 (40)*	57 (38)	55 (42)	57 (39)
Percent of Income Earned from Farming or Ranching	82%	79%	78%	79%
Number of Full Time Operators	26	24	28	26
Operators with Full Outside Employment	5	4	7	5
Operators with Part Time Jobs	8**	9	3	3
Semi Retired Operators	1	1	4	5

* Figures in parenthesis represent the number of operators.

** Six of the Study Area operators have outside income from jobs closely related to agriculture. For example, some are cattle buyers, fertilizer representatives, and cotton gin operators.

serious about continuing his farming and livestock operations.

Most of the operators depend entirely on agriculture for their income, but the amount of off-the-farm income of a few operators reduces the average income from agricultural production to around 80 percent. Some of these operators have full-time jobs and are using their agricultural operations only to supplement their other income. Their farming operations usually consist of a few livestock, some feed grain and hay production and small acreages of cash crops, such as cotton and grain sorghum.

In 1965, there were nine operators in the study area and three in the control area that were involved in some outside activity. These operators are usually connected with some phase of agricultural business, such as being an agent for a fertilizer company, a livestock buyer, or a manager of a cotton gin. These are usually seasonal type jobs that enable the operators to earn extra income with a minimum conflict with farming operations.

In an intensive farming area like Ellis County, the activities of operators are largely confined to their agricultural operations. This can be seen by comparing the operators of this area to those in the Madison County area. (See 1965 Interim Report.) In that county, the study and control area operators averaged only 46 and 58 percent of their income, respectively, from agricultural practices. The smaller livestock operations, like some of those in Madison County, do not require as much time as does intensive farming as practiced in Ellis County. Therefore, more of them are able to find some sort of outside employment to supplement their income without penalizing their

agricultural operations.

Table 6 presents the acreage and tenure pattern of the study and control area operators for their 1963 and 1965 operations. Land tenure is approximately the same in both the study and control areas. In the study area, 73 percent of the total acreage is rented, while in the control area, despite the increase in owned acreage in 1965, 78 percent of the total acreage is rented.

In 1963 the 40 study area operators were farming approximately 30 percent more land than the 42 control area operators. Although the study area operators lost land to right of way, they acquired enough additional land through purchasing and leasing to more than offset the 771 acres taken for the right of way for Interstate 35E. In 1963, the average size of each farm unit was 613 acres in the study area and 409 acres in the control area. In 1965 the average for the study area increased to 793 acres, as compared to a rise in the control area average to 436 acres.

Between 1963 and 1965, the study area group purchased twice as much land as those in the control group. The 891 acres purchased by eight of the operators in the study area more than replaced the 771 acres acquired from all operators for the right of way in 1964. The study group was also more aggressive in acquiring additional rented land. Fifteen of the study area operators added 6,372 acres of rented land, while the control farmers added only 1,133 acres.

Although not germane to a discussion of net changes in acreage, it is interesting to note that approximately 1,000 acres of rented land were exchanged by study area operators. A portion of this land

TABLE 6

LAND TENURE OF THE STUDY AND CONTROL AREA OPERATORS FOR THE 1963 AND 1965 FARM OPERATIONS IN ELLIS COUNTY

	STUDY AREA		CONTROL AREA	
	1963	1965	1963	1965
Number of Operators	40	37	42	39
Total Acreage	24,507(142)*	29,334(209)	17,190(102)	17,009(94)
Acreage Rented	17,839(105)	21,544(145)	13,945(80)	13,424(69)
Acreage Owned	6,668(37)	7,790(64)	3,245(22)	3,585(25)
Increased Acreage**				
Acreage Purchased		891		426
Acreage Rented		6,372		1,133
Reduced Acreage				
Acreage Sold		121		-
Rented Acreage Released		1,653		1,599
Acreage Acquired for Right of Way		771		

* The number of tracts is in parenthesis.

** The small discrepancy in figures between the two sections of the table is due to incomplete information on a few of the operators in 1963.

was exchanged to facilitate operations by overcoming the inconvenience brought about by the severance of tracts for the highway route. These exchanges ordinarily occurred when operators, each having a severed tract on opposite sides of the highway from his headquarters, could agree on arrangements whereby each would operate the other's remainder tract. This type of arrangement sometimes works out very nicely for each operator when the remainder parcels are of equal size and quality. However, the switching of rented land is a common practice in this type of farming area since the operators rent on a year-to-year basis and, quite frequently, the landlord becomes dissatisfied with the renter, or vice versa, and their agreement terminates. This accounted for the major portion of rented land exchanged by operators. Therefore, despite the frequent exchanges of land in the study area, in many cases no suitable trade agreements could be arranged on remainders, and the operators continued farming tracts on the opposite side of the highway. Many farmers were faced with the inconvenience of severed tracts, as the number of tracts increased considerably due to acquisition for Interstate 35E.

The number of tracts in the study area was increased from 142 in 1963 to 209 in 1965. The majority of this increase in tract numbers represents right of way parcels which were severed by the new highway route. Table 7 presents a breakdown of the 55 parcels from which 771 acres of land were acquired for the right of way of Interstate 35E. Seventy-eight percent of this land was classified as cropland and was in cultivation and 22 percent was considered pastureland.

TABLE 7

ACREAGE AND LAND TENURE OF LAND AFFECTED
BY THE RIGHT OF WAY ACQUISITION
FOR INTERSTATE 35 IN
ELLIS COUNTY

	Number of ROW Tracts		Acreage Acquired
	Before[2]	After[3]	for Right of Way
Right of Way Acquisition (40)[1]	55	98	771
Land Owned by Operator (19)	20	38	287
Cropland Owned (18)	19		228
Pastureland Owned (9)	9		59
Land Rented by Operator (28)	35	60	484
Cropland Rented (22)	26		376
Pastureland Rented (14)	15		108

1/ The number of operators for which the data to the right is given is shown in parentheses.

2/ Represents the time of ROW taking.

3/ Represents the period after ROW acquisition.

Sixty-three percent of the acquired acreage came from parcels that were being operated by renters. In these cases, renters were the persons that noticed the immediate effects of tracts being severed by the highway route. The other 37 percent of right of way, or 287 acres, was acquired from owner-operator parcels.

Of the 19 owner-operators in Table 7 losing land to the right of way, 18 lost a total of 228 acres of cropland and nine operators had 59 acres of pastureland acquired for the right of way. About the same proportion of cropland to pastureland acreage was acquired from the rented tracts. Since some of the operators had more than one tract affected by the right of way acquisition, there is not a one to one relationship between the number of operators and the number of tracts shown in Table 7.

Crop Production

To show the importance of the various crops produced by the two groups of farmers, detailed information is presented in Table 8 depicting acreage harvested by operators, amount of production, and value of crops produced. The production totals are based on those farmers furnishing complete records on both 1963 and 1965 operations. The 8,169 and 9,300 acres used for crop production in 1963 and 1965 respectively, by the study area farmers represents a little over 50 percent of the total land operated by the 29 operators. The balance of the land was either pastureland, idle land, or under government programs. Most of it, however, was being used as pastureland.

The 9,526 and 10,039 acres used by control area operators in 1963

TABLE 8

CROP PRODUCTION OF 29 STUDY AREA AND 37 CONTROL AREA OPERATORS FURNISHING COMPLETE PRODUCTION RECORDS FOR 1963 AND 1965 IN ELLIS COUNTY

	1963				1965			
CROP	NO. OPERATORS	ACRES	UNITS	VALUE	NO. OPERATORS	ACRES	UNITS	VALUE
			(Study Area)					
Cotton	19	2,658	1,350[1]	$184,200	17	3,491	1,817	$238,000
Maize[4]	19	2,600	3,200[2]	130,000	23	3,650	5,313	191,000
Wheat	19	717	15,500[3]	29,000	19	1,050	14,030	19,400
Oats	6	389	10,790[3]	8,995	10	215	6,562	5,585
Corn	14	695	32,200[3]	40,590	8	177	6,975	9,417
Hay	23	1,110	40,821[1]	29,804	10	717	43,978	36,036
		8,169		$422,589		9,300		$499,438
			(Control Area)					
Cotton	32	5,955	2,640[1]	$391,715	33	5,021	3,091	$395,180
Maize[4]	23	1,836	1,925[2]	67,933	27	3,720	6,171	222,060
Wheat	23	883	19,117[3]	36,375	18	552	10,691	15,315
Corn	14	300	10,132[3]	11,920	9	164	6,793	8,695
Oats	5	55	1,847[3]	1,990	10	180	6,259	4,950
Hay	20	497	22,735[1]	15,755	20	402	21,368	15,320
		9,526		$525,688		10,039		$661,520

[1] Bales
[2] Tons
[3] Bushels
[4] Common name for grain sorghum

and 1965 respectively, for crop production represented about 70 percent of their total land. There were fewer livestock operators in the control area, so most of the land was actually planted for harvest of matured crops.

The two major crops grown in the study and control areas are cotton and grain sorghum, commonly called maize in Texas. These two crops accounted for 60 and 75 percent of the land shown in Table 8 by the study area operators in 1963 and 1965. Control area farmers had about 80 percent of their cash crops in cotton and maize both years.

Farmers in both areas increased their maize yields in 1965. These increased yields were a result of more intensive use of fertilizer, improved farming practices and more favorable weather conditions in 1965. The study area operators achieved a 400 pound per acre increase in 1965 over the 2,400 pound yield in 1963. The control area operators showed a 1,300 pound per acre increase in 1965 over the 2,000 pound average yield in 1963.

Cotton acreage was reduced by the control group in 1965, but the study area, with two fewer operators, added some 830 acres to the 1963 acreage. Cotton yield per acre was about the same in 1963 and 1965 for study area farmers as compared to an increase from .44 bale per acre in 1963 to .61 bale per acre in 1965 for the control group.

The remaining crops, wheat, oats, corn, and hay, are less important to the farmers in both areas, but to some operators they can be important. For example, the livestock operators graze the wheat and oats during the winter months, then take the livestock off in January, and harvest a grain crop in late spring. Under this practice the winter

grains serve a dual purpose and are considered very important crops in livestock operations.

Between 1963 and 1965, much of the corn acreage was shifted to maize, resulting in a large decrease in the amount of corn harvested in 1965. According to the farmers, corn used to be an important crop for this area, but with the improved varieties of maize they have found it more profitable to switch from corn to maize.

Hay production remained almost the same in the study area, but the operators produced more bales on fewer acres in 1965. The use of more fertilizer and improved hay varieties is the most important factor in the increased production. The control area produced fewer bales in 1965, but also had fewer acres.

Livestock Production

Livestock farming, as mentioned earlier is much more prominent with the study area operators than with the control area group. Shown in Table 9 are the number of cattle on the farms in 1963 and 1965, and the number and value of purchases and sales for both the study and control area operators. Cattle operations were the only significant livestock enterprises in the area. One operator had a few hogs and sheep, but due to the insignificance of the operation it is not included in this phase of the study. The primary difference between the two areas is that more study area operators depend on livestock operations, rather than cash crops, for the major part of their income. The control area has only two operators that concentrate on livestock farming. However, in both cases they are small operators, one being

TABLE 9

LIVESTOCK INVENTORY, PURCHASES, AND SALES FOR THE STUDY AND CONTROL AREA OPERATORS OF ELLIS COUNTY IN 1963 AND 1965

	Study Area		Control Area	
	1963	1965	1963	1965
Number of operators with cattle	35	33	31	30
Number of operators with no cattle	5	7	9	10
Inventory: (Stock on Hand Dec., 1963 & 65)				
Number of cows	694	839	195	156
Value	$102,331	$143,105	$ 24,570	$ 24,740
Number of cows with calves	284	342	200	334
Value	$ 59,307	$ 68,910	$ 36,500	$ 65,675
Number of bulls	70	78	20	28
Value	$ 19,460	$ 18,745	$ 4,375	$ 6,875
Number of heifers	63	80	14	50
Value	$ 9,825	$ 11,255	$ 3,160	$ 6,675
Total: Head	1,395	1,681	629	902
Value	$190,923	$242,015	$ 68,605	$103,965
Purchases:				
Number of cows	10	20	6	4
Cost	$ 1,240	$ 2,300	$ 600	$ 430
Cows with calves	-	38	4	16
Cost	-	$ 5,848	$ 770	$ 2,565
Number of bulls	4	19	3	3
Cost	$ 760	$ 4,086	$ 610	$ 615
Number of calves	62	399	40	13
Cost	$ 1,845	$ 28,774	$ 2,138	$ 859
Misc. cattle* - value only	$273,750	$400,000	-	-
Total: Cost	$277,595	$441,008	$ 4,118	$ 4,469
Sales:				
Number of cows	11	154	43	29
Sales value	$ 1,633	$ 22,716	$ 4,301	$ 4,110
Number of cows with calves	7	58	-	21
Sales value	$ 1,100	$ 10,456	-	$ 4,160
Number of calves	883	765	282	373
Sales value	$ 85,998	$ 71,389	$ 29,693	$ 34,976
Misc. cattle* - value only	$296,537	$438,000	-	-
Total: Sales	$385,268	$542,561	$ 33,994	$ 43,246

* No information is available on the number of head owned, purchased, or sold by cattle traders.

semi-retired and the other engaged in outside employment. In comparison, four operators in the study area depend primarily on their livestock enterprise for the major part of their income. Two of these are engaged in the buying and selling of cattle. They might turn over their complete herd three or four times a year. In some cases, the cattle are purchased and sold on the same day without ever being moved to the operator's land. In these two cases the operators were unable to give any reliable information on their inventory of cattle or on the number purchased or sold during the year. They furnished only dollar amounts of purchases and sales.

The other study area operators, having regular breeding herds, owned an average of about 40 head in 1963 compared to a 27 head average owned by the control area operators. The averages were increased by both the study and control area operators in 1965. The percentage increase by control operators was much greater, but with only 639 head in 1963, their base allows for a greater percentage increase even if both areas added the same number of head. As shown in Table 9, the increase for the control group is practically all accounted for by the increase of 134 head of cows with calves from 1963 to 1965. The study area operators, for some unknown reason, reported an increase in dry cows and a small decrease in cows with calves. The inventory of heifers and bulls shows no significant changes between the two areas or between the two years. There was one other class of cattle in the area, but inventory information was not available on stocker calves owned by the cattle traders.

With the exception of the few cattle traders, very few cattle are purchased by the remainder of the operators. They buy only a few replacement cattle, such as cows, cows with calves, and bulls. Occasionally they will buy a few heifers, but they usually keep a few of their better heifer calves for future breeding stock. There do not appear to be any significant changes or differences between the two areas with respect to livestock purchases.

Cattle sales are naturally greater in the study area since those operators have many more mother cows and produce many more calves for market. Also, the study area operators sold a higher percentage of their mother cows in 1965. This reduction of their breeding herd may have been a result of the loss of pastureland for the right of way. In a number of cases, small operators were forced to cut back on their cattle population, but others rented or purchased additional land and increased their herd. Stocker and butcher calves from 400 to 500 pounds make up the bulk of the cattle sales for the regular livestock operators. However, the trader again shows the largest volume of receipts. It might be necessary to eliminate these operators from the final report since their operations are not characteristic of the average livestock operators in either area.

Travel Changes to Operator's Tracts

One of the main concerns of an operator regarding changes resulting from right of way acquisition for a limited access type highway is the extent that travel to his severed or other tracts will be affected. Because most operators travel frequently to their operations, it is

desirable to establish whether or not distances to the operator's tracts are increased or decreased due to the construction of an Interstate Highway.

After the highway right of way had been acquired and construction had begun, many operators were faced with operating conditions quite different from those to which they had been accustomed. As was shown in Table 9, livestock operations are more extensive in the Ellis County study area than in the control area, and problems experienced in the "after" period in the study area closely resembled those encountered by Madison County operators, although on a smaller scale.[1] Unlike Madison County, however, Ellis County is primarily a farming area. Many of the severed tracts in the study area had previously been planted in row crops. The acquisition of land for Interstate 35 resulted in a conversion of the use of the majority of the severed tracts from the row crops to the planting of small grains. This change was necessary because many severed tracts were poorly suited to the continued use of row crops and because some increase in operating costs due to the circuitous travel necessary to farm a severed tract are usually encountered. Small grains, being planted and then largely ignored until harvest time, are proving very suitable for severed parcels. More problems of severed parcels are discussed in other sections of this report and will be extensively covered in the final report.

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[1] See Meuth, H. G., "Right of Way Acquisition Effects on the Remaining Rural Farms and Ranches in Madison County," An Interim Progress Report, Texas Transportation Institute, HPR-1(5).

Some operators gained or lost tracts in the period from 1963 to 1965. Also, changes in distance to operators' tracts during this period were affected, not only by the new highway, but by changes in the size and nature of each man's operation. For these reasons it was deemed desirable to use only 1965 data in the determination of travel effects. Distances were computed from each operator's headquarters to the tracts the operator was farming in 1965, as if the highway had not been introduced into the area. Therefore, in Tables 10 and 11 the "before" period does not represent 1963, but a hyperthetical "before" period. The distances computed without consideration of Interstate 35E were then compared to those which the operators actually have to travel in order to reach their various tracts now that the highway is in existence. All mileage figures in Tables 10 and 11 were calculated as one way distances to severed or other tracts within an operator's farming unit. In cases of a right of way acquisition which resulted in two remainders, the distance from the headquarters to one of the tracts was measured. Then the additional distance the operator must travel to get to the other severed tract was added. This method was considered more applicable in order to eliminate an upward bias in the increased distance attributable to the Interstate.

Table 10 presents changes in the types of roads used by the operators in their day-to-day operations caused by the construction of Interstate 35. Fifteen operators could conveniently use Interstate 35 for 31 miles of one-way trips to their various tracts, or an average of two miles each. This is partially the result of the increased distance to tracts due to new routes and partly a result of a decrease of 15 miles

TABLE 10

ONE WAY MILEAGE BY TYPE OF ROAD FROM THE HEADQUARTERS OF 38 STUDY AREA OPERATORS TO ALL OTHER TRACTS INCLUDED IN THEIR OPERATIONS

	Before In Miles	After In Miles
Interstate 35		31.3(15)*
U. S. Highways	119.5(17)	104.4(19)
Paved	250.6(16)	251.2(16)
County	178.9(26)	197.3(34)
Private	8.1 (5)	11.0 (9)
Change in Total Distance		+ 38.1(28)

* The number of operators is in parentheses.

traveled on the U. S. highway. More than half of the increased distance, 38.1 miles, despite some utilization of the Interstate, must be traveled on unpaved roads. There was, in fact, a 40 percent increase in the number of operators who had to travel on unpaved roads to get to their tracts after the construction of the new highway. Miles traveled on unpaved roads increased by 11 percent and mileage on U. S. highways and other paved roads, other than Interstate 35E, decreased 3.5 percent, or 13 miles.

A more detailed breakdown of travel in the Ellis County study area is given in Table 11. This table shows changes in travel routes that each operator encounters due to construction of Interstate 35. It was found that distances of one way trips to 37 tracts were increased after the construction of Interstate 35E. Operators of four tracts received benefits of shorter routes, but increased distances to their other tracts wiped out any savings in travel for two of the operators. It is shown in Table 11 that nine operators experienced no change in total one-way trip distance traveled, nevertheless, the highway did affect some of these operators. Two of the nine operators, numbers 33 and 34, had tracts created by severance, but they sold the tracts, thus no travel distance change in their remaining operation resulted. Operators 8 and 11 avoided travel distance increases by an exchange of parcels. Both were renting cropland severed by Interstate 35, and they made an agreement to operate each other's severed parcels. Operator 8 has two landlocked parcels, amounting to eleven acres, to which distances are not given on the chart. Operators 16 and 17 also have landlocked parcels measuring about one acre each. Operator 18, although experiencing no

TABLE 11

CHANGES IN DISTANCE FROM EACH OPERATOR'S HEADQUARTERS TRACT TO OTHER TRACTS IN HIS OPERATION AFTER CONSTRUCTION OF I. S. 35E THROUGH ELLIS COUNTY

Operators	Number of Tracts					Distance To Tracts		Change In Total Distance	Change On Paved Roads	Change On Gravel Roads
	Before	After				Before	After			
		Total	Created By Severance	No.(1) Affected	No.(2) Not Affected					
1	1	2	1	1	1		.3	.3		.3
2	3	4	1	1	3	10.2	10.3	.1		.1
3	13	14	1	1	13	94.0	94.5	.5	.4	.1
4	4	5	1	1	4	17.0	19.5	2.5	.8	1.7
5	4	5	1	-	5	9.5	9.5	-		
6	6	6	-	-	6	14.3	14.3	-		
7	5	6	1	1	5	17.5	18.5	1.0	1.0	
8(3)	5	7	2	2	5	36.0	36.0			
9	12	14	2	2	12	46.9	47.9	1.0		1.0
10	5	5	1	1	4	1.3	1.5	.2		.2
11	2	2	-	-	2					
12	6	7	1	1	6	22.4	23.1	.7		.7
13(3)	5	6	1	1	5	4.9	6.8	1.9	1.8	.1
14(3)	4	4	-	-	4	18.8	18.8	-		
15	8	9	1	1	8	27.9	28.4	.5		.5
16	7	7	-	-	7	30.6	30.6	-		
17	6	9	3	2	7	15.0	15.6	.6	.2	.4
18	4	4	-	1	3	18.5	18.5	-	.8	.8-
19	1	2	1	1	1	-	.6	.6	.1	.5
20	6	8	2	2	6	7.5	10.4	2.9	1.4	1.5
21	10	12	2	6	6	17.0	21.2	4.2	3.0	1.2
22	6	10	4	4	6	2.7	6.2	3.5	1.5	2.0
23	5	6	1	2	4	3.0	3.1	.1	.6	.5-
24	1	2	1	1	1	.8	.9	.1		.1
25	3	4	1	1	3	2.7	3.7	1.0	.4	.6
26	1	2	1	1	1	-	1.1	1.1	.5	.6
27	2	2	-	1	1	30.4	29.5	.9-	2.0-	1.1
28	2	3	1	1	2	-	2.2	2.2	1.0	1.2
29	2	4	2	1	3	5.5	6.3	.8		.8

TABLE 11 (Cont'd)

Operators	Number of Tracts Before	Number of Tracts After Total	Created By Severance	No.(1) Affected	No.(2) Not Affected	Distance To Tracts Before	Distance To Tracts After	Change In Total Distance	Change On Paved Roads	Change On Gravel Roads
30	3	4	1	1	3	18.0	18.9	.9	.5	.4
31	8	9	1	1	8	66.1	66.2	.1		.1
32	1	2	1	1	1	-	.2	.2		.2
33	2	2	-	-	2	8.0	8.0	-		
34	1	1	-	-	1	-	-			
35	1	2	1	1	1	-	2.1	2.1	1.0	1.1
36	4	5	1	1	4	10.5	12.8	2.3	1.1	1.2
37	1	2	1	1	1	-	2.5	2.5	1.2	1.3
38	2	3	1	1	2	.1	5.2	5.1	1.5	3.6
Grand Total	162	201	40	44	157	557.1	595.2	38.1	16.8	21.3

(1) This column refers to the number of tracts to which distance was increased or decreased due to the construction of Interstate 35. It does not refer to the number of right-of-way tracts.

(2) This column refers to the number of tracts to which distance was not affected by Interstate 35.

(3) These operators live in town so distances were measured from their residence to their various tracts.

change in distance, travels .8 miles more on paved roads.

Of those whose distance did change, it was found that only one operator had his travel distance decreased by the Interstate. Ten operators encountered increases of .1 to .5 miles on one-way trips from headquarters to their other tracts, and seven other operators had their travel distances increased from .5 and 1.0 miles. Two operators experienced increases from one to two miles, while nine other operators had to travel more than two miles further than they would have in the absence of the new highway. The largest increase in distance was 5.1 miles. Twenty-two operators had to travel more than half of the increased distance on unpaved roads, leaving six operators that could travel more than half of the increased distance on paved roads. The total change in distance traveled on paved roads was 16.8 miles as compared to an increase in travel on unpaved roads of 21.3 miles.

The average distance to each tract from the operator's headquarters tracts, measured in the "before" period, was 3.4 miles. This gives some indication as to the dispersion of tracts in Ellis County. Worthy of mention is operator 27, who averaged over fifteen miles to each of his tracts in the before period. He traveled, on the average, farther than any other operator in the study area group, and was able to utilize the Interstate a great deal in his travel. In the "after" period, the average increased distance to affected tracts due to right of way acquisition was .86 miles, over half of which was on unpaved roads.

In summarizing the travel of operators, it is evident that most of the operators in the study area had to travel farther to reach their

distant tracts. About 50 percent of the increased mileage was on unpaved roads. The 38.1 extra one-way miles traveled by the 38 operators does not appear to be a significant increase until you consider the frequency of trips required each year for crop or livestock production. One extra mile for operators means two extra miles for a round trip. When these distances are expanded to represent the annual mileage required of farm machinery movements or truck trips to tend livestock operations, the added distances emerge as sizeable effects of the new highway. Another point is that most of these operators are renters and did not share in the money paid the landowners for damages to the remaining right of way tracts.

Changes in Travel for Shopping Purposes

When analyzing the effects of Interstate 35E on study area operators, one cannot ignore the possible changes in travel habits of the operators to the near-by shopping areas. In order to determine the effects of the new highway on travel patterns, distances were calculated from each operator's home to the nearest town and to Waxahachie, the county seat of Ellis County, by his regular route and by the route he was required to travel after the completion of the Interstate. Since eight of the study area operators lived in one of the four towns in the area, they were omitted from this phase of the study.

The first route took the operator from his home to the nearest town. There are three small towns in the area, Forreston, Italy, and Milford. Waxahachie, the main shopping area, is located on and one half miles north of the study area. The three small towns offer some

of the more common household items and farm supplies of near-by farmers. It was found that Interstate 35E did not significantly change the routes or length of trips for operators to the nearest towns.

One operator experienced a noticeable change, that being an increase of .9 of a mile to Italy because he was forced to take a different route after the highway was built. This is the only change in trips to the nearest towns worthy of mention.

Of the 30 operators living on their headquarters tracts, seven lived between Forreston and Waxahachie. These operators were unable to conveniently utilize the new route to Waxahachie because there is no interchange on the Interstate between the two towns. Since they had to continue using the old route of U.S. 77 to Waxahachie they experience no saving in length of trips. However, after the diversion of through traffic to Interstate 35E, U.S. 77 will be a safer and more convenient route to travel for these operators as well as other local residents.

Seven other operators living in the vicinity of Forreston were unable to save distance on trips to Waxahachie. Three of these operators had access to the Interstate route, but the maneuvering required to get on the new route canceled out any savings in miles. Those operators with access to the Interstate will probably prefer driving on the improved facility even though there is no savings in miles for trips of over five or six miles.

The changes in trip lengths to Waxahachie by various types of roads for the other 16 operators are shown in Table 12. All of these

TABLE 12

MILEAGE CHANGES IN ONE-WAY DISTANCES TO THE COUNTY SEAT, BY TYPE OF ROAD FOR THOSE FARMERS WHO HAD THEIR TRAVEL ROUTES TO WAXAHACHIE AFFECTED BY THE CONSTRUCTION OF INTERSTATE 35E

	TYPES OF ROADS										
	U. S. HIGHWAY		COUNTY ROADS		PRIVATE ROADS		FARM TO MARKET ROADS	INTERSTATE HIGHWAY	TOTAL		DISTANCE SAVED ON
OPERATOR	B[1]	A[2]	B	A	B	A	A	A	B	A	TRIPS
19	14.2	1.4	1.5	.6			1.0	12.0	15.7	15.0	.7
20	14.2	1.4	.2	.8				12.0	14.4	14.2	.2
21	14.2	1.4	1.2	.2				12.0	15.4	13.6	1.8
23	14.2	1.4	1.2					13.4	15.4	14.8	.6
24	14.2	1.4	1.4	.2				13.4	15.6	15.0	.6
25	16.2	1.4	.1	.8				13.4	16.3	15.6	.7
26	16.2	1.4	.1	.8				13.4	16.3	15.6	.7
28	17.0	2.2		.8	.1	.1		13.4	17.1	16.5	.6
29	18.0	3.2		.8				13.4	18.0	17.4	.6
30	18.3	3.8		.8	.1	.1		13.4	18.4	18.1	.3
31	19.4	1.4	.5	.1				17.4	19.9	18.9	1.0
33	19.4	1.4	.1	.2				17.4	19.5	19.0	.5
34	19.4	1.4	1.0	.5				17.4	20.4	19.3	1.1
35	19.4	1.4	1.1	.6				17.4	20.5	19.4	1.1
36	19.4	1.4	1.2	.7				17.4	20.6	19.5	1.1
37	18.0	3.2	1.0	1.8	—	—	—	13.4	19.0	18.4	.6
TOTALS	271.7	29.2	10.6	9.7	.2	.2	1.0	230.2	282.5	270.3	12.2
AVERAGES	16.98	1.82	.66	.61	NA	NA	NA	14.38	17.6	16.8	.76

[1]Before
[2]After

The mileages shown are assumed distances. They are based on the shortest possible route that a given operator could take to Waxahachie before and after completion of the Interstate route.

operators are located 14 miles or more from Waxahachie.[2] The mileage to Waxahachie for each of the 16 operators in Table 12 is shortened when they use the Interstate route. Operators living near or just west of Italy, the second town south of Waxahachie, were able to utilize 12 miles of Interstate. By entering the Interstate at the north interchange near Italy, three operators could use the new route and save from .7 to 1.8 miles on one-way trips to Waxahachie. It is convenient for 7 operators to get on the new highway at an interchange just south of Italy. By utilizing 13.4 miles of the Interstate on trips to Waxahachie, these operators can shorten each one-way trip by .3 to .7 miles. This decrease might be considered small, but the 13.4 miles of freeway travel will certainly be an improvement over their previous route. About 20 study area operators benefited more than other study area operators on trips to the county seat since they were able to utilize 17.4 miles of the new route. The five operators living near Milford were able to save an average of about one mile each by using the Interstate as their preferred route to Waxahachie. In addition to shortening their trips by one mile, the operators also were able to by-pass two towns and eliminate a number of narrow bridges and curves on old Highway 77.

The last study area operator in Table 12 did not live near the new route, even though he operated a right of way tract south of Milford. He lived northeast of Milford and had to travel over county roads in

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[2]To locate each operator shown in Table 12, check corresponding operators numbers in Figure 3 in the first part of this report.

order to reach Highway 77 or the Interstate. His distance to Waxahachie was decreased also, but he was required to drive further on county roads in order to utilize the Interstate route.

It is too soon after construction to estimate the overall benefits these operators will derive from living near an Interstate highway with limited access. At the present there are only four points within the 20 mile area that local traffic can use to enter or to leave the new facility. Despite the limited access of the highway, the 16 operators in Table 12 saved an average of .6 mile each on one-way trips to Waxahachie. This savings in mileage is rather small, but when other advantages, such as, convenience, safety and ease of driving on the improved facility are considered, local residents should make good use of the route on trips to the north or south of five miles or more.