Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FHWA/TX-98/1260-2		

4. Title and Subtitle	5. Report Date
ESTIMATED CONSTRUCTION PERIOD IMPACT OF WIDENING STATE HIGHWAY 199 IN PARKER COUNTY, TEXAS	August 1997
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Jesse L. Buffington and Marie T. Wildenthal	Research Report 1260-2

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135	11. Contract or Grant No. Study No. 0-1260

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
Texas Department of Transportation Office of Research and Technology Transfer P. O. Box 5080 Austin, Texas 78763-5080	Research: August 1991 - January 1997
	14. Sponsoring Agency Code

15. Supplementary Notes

Research performed in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration.
Research Study Title: Economic Impact of Highway Widening Projects

16. Abstract

The upgrading and widening of highways across the state is causing the directly affected businesses and property owners to inquire about the possible economic impacts of such construction. This report documents the during- and after-construction effects of the widening of a 15.13 kilometer undivided section of State Highway (S.H.) 199, in Parker County, Texas. Between 1990 and 1994, it was widened to include two roadways separated by a ditch or a two-way left-turn lane.

Collected data includes abutting managers' estimates of the construction impact on their businesses, on property values, and on highway traffic volumes, travel times, and accident rates. Responding Azle businesses lost 33% of their parking spaces and Springtown businesses lost 16%, but both reported fewer customers per day and 33% fewer occupied parking spaces during construction. The number of employees for most businesses was unaffected. The sales reported by abutting businesses increased slightly more than Azle gross sales, but increased less than Springtown or Parker County sales. Appraised abutting, Springtown, and Parker County property and land values fell during and after construction. The benefit-cost ratio was 2.95 for Azle and 1.48 for Springtown.

The Texas input-output model estimates the construction expenditures' impacts to be $29.8 million in output and 453 jobs for the Texas economy from the Springtown project. For the Azle project, the estimated impacts are $13.4 million in output and 202 jobs for the Texas economy.

17. Key Words	18. Distribution Statement
Economic Impact, Highway Widening, Two-Way Left-Turn Lane, Abutting Businesses, Residents, Property	No Restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161

19. Security Classif.(of this report)	20. Security Classif.(of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	250	

ESTIMATED CONSTRUCTION PERIOD IMPACT OF WIDENING STATE HIGHWAY 199 IN PARKER COUNTY, TEXAS

by

Jesse L. Buffington
Research Economist
Texas Transportation Institute

and

Marie T. Wildenthal
Assistant Research Economist
Texas Transportation Institute

Research Report 1260-2
Research Study Number 0-1260
Research Study Title: Economic Impact of Highway Widening Projects

Sponsored by the
Texas Department of Transportation
In Cooperation with
U.S. Department of Transportation
Federal Highway Administration

August 1997

TEXAS TRANSPORTATION INSTITUTE
The Texas A&M University System
College Station, Texas 77843-3135

IMPLEMENTATION RECOMMENDATION

The following recommendation seems to be in order at this time:

1. The economic impact findings of this study should be used by TxDOT planning officials to write and support environmental impact statements.

DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Texas Department of Transportation (TxDOT) or the Federal Highway Administration (FHWA). This report does not constitute a standard, specification, or regulation. The report was prepared by Jesse L. Buffington and Marie T. Wildenthal.

ACKNOWLEDGMENT

This research was sponsored in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation.

The authors want to thank several officials of District 2 of the Texas Department of Transportation for their assistance in this study and in this report. Special mention should be made of the following officials: Mr. Robert L. Wilson, P.E., director of the design division and project director, and Mr. Wesley G. Pair, P.E., assistant director of the design division, for their support and guidance during this study. Mr. Burton Clifton, P.E., district advanced planning engineer; Mr. Larry Rosenbach, district right-of-way administrator; Mr. Jim Rowe, district right-of-way appraiser; Mr. Don McCauly, resident engineer; Mr. George Thomas, area engineer; Mr. Jimmy Bodiford, area engineer; Mr. Yerby Shahan, construction superintendent; and Mr. John Bailey, field representative, for furnishing data and providing valuable assistance to this study.

Sincere appreciation is given to Mr. Rod Owen, appraiser, and others at the Parker County Appraisal Office for their assistance in this study. Also, thanks are due to the owners/managers of the cooperating businesses abutting State Highway 199 in the study area in Azle and Springtown for their valuable help to the study.

Further, the authors want to express their sincere thanks to Mr. Lane Morris, field office superintendent for APAC TEX, Inc.; Mr. Kenneth Dodson, field office superintendent for Garey Construction Co.; and the officials of the subcontractors for their help in determining the amount of the construction expenditures in the Azle and Springtown area and logging lane closures for the study.

Officials of the Texas State Comptroller's Office furnished valuable information for the study.

The authors express sincere thanks to the Texas Transportation Institute's personnel for their valuable assistance. Dr. W.F. McFarland, research economist and head of the Transportation Economics Program, and Dr. J.L. Memmott, research economist, assisted with the highway user cost analysis. Ms. Carol Walters, research engineer; Mr. Stephen Ranft, research associate; and Ms. Diana Wallace, assistant research specialist, assisted with the highway user cost analysis. Ms. Katie N. Womack, research sociologist, conducted the business surveys. Also, thanks is due to Mr. Darrell Borchardt, assistant research engineer; Mr. Paul Hawkins, assistant research engineer; and Mr. Gerald Ullman, assistant research engineer; and their data collection staff for collecting the traffic data for the study. Mr. Alan Nelson, student assistant, and Mr. Randolph Word, graduate assistant, helped to reduce the study data base. Finally, Ms. Cheryl Kruse, senior secretary, assisted with preparation of travel request/vouchers and other paper work for the study.

TABLE OF CONTENTS

LIST OF FIGURES

Figure **Page**

LIST OF TABLES

Table	Page

Table **Page**

Table **Page**

Table **Page**

Table **Page**

Table **Page**

SUMMARY

Between 1990 and 1994, a 15.13 kilometer undivided section of State Highway (S.H.) 199, in Parker County, Texas, was widened to include two roadways separated by a ditch that became a two-way left-turn lane close to Azle and Springtown. The Texas Department of Transportation's (TxDOT) purchase of 179 properties for right-of-way affected 193 owners and tenants. This report documents the during- and after-construction effects of the widening.

Responding Azle businesses lost 33% of their parking spaces and Springtown businesses lost 16%. During construction, they reported 60% to 70% fewer customers per day. After construction, 63% of the Azle managers thought there was no change in their number of daily customers, while 56% of the Springtown managers thought they increased. They reported 31% to 36% fewer occupied parking spaces during the busiest hour of the day during construction, and a further reduction after construction. Most (74% to 89%) businesses' number of employees were unaffected during construction. Most business managers thought that sales decreased. However, the sales reported by abutting businesses increased slightly more than Azle gross sales, but increased less than Springtown or Parker County sales.

Appraised abutting, Springtown, and Parker County property and land values (per acre where available) fell during and after construction. Since all area properties are similarly affected, the decline is not solely due to the construction. Abutting inhabitants were more optimistic about the impact, thinking mainly that their property values did not change during construction and up to half thought that it increased afterward.

The traffic volume decreased 2% to 7% each year of construction and rose 2% to 23% each year after construction. Travel time along S.H. 199 increased during much of the construction period, but in 1996 it decreased to 13% to 19% below 1991 values. Accidents increased in Springtown but decreased in Azle during construction. In 1995, the number of accidents in both cities was lower than in any year from 1991 to 1995. The benefit-cost ratio was 2.95 for Azle (1.48 for Springtown), which means that motorists receive $2.95 ($1.48) in benefits for every dollar spent on the project.

Estimated sales tax receipts from abutting Azle businesses that reported their sales decreased 7% during construction, while they increased for Azle and Parker County. Springtown sales tax receipts increased for responding businesses before and during construction, so their sales tax receipts were not as affected as Azle firms' were. Abutting property tax receipts in Azle and Springtown increased by a greater percentage than Springtown and Parker County tax receipts before, during, and after construction.

The estimated impact of the $8 million of the Springtown construction expenditures that were spent in Texas is $29.8 million in output and 453 jobs for the Texas economy. The estimated impacts of the $3.6 million in-Texas expenditures for the Azle project are $13.4 million in output and 202 jobs for the Texas economy.

INTRODUCTION

BACKGROUND

Purpose of Study

The upgrading and widening of highways over the state, especially in urban areas, is causing the directly affected business managers and property owners to ask questions about the possible negative economic impacts of such construction. Business managers along U.S. Highway 80 in Longview, Texas were concerned that widening the highway through their city would result in the loss of shoulder and private parking spaces for their customers. They were also concerned about the ability of their customers to safely turn into their parking lots because the new curbing restricted continuous access to them. Several years ago, an out-of-state organization trying to study the effects of widening a rural highway from two to four lanes contacted a research economist at the Texas Transportation Institute (TTI) for information on the economic impact (specifically land value, land use, and business impacts) of such an improvement. Later, a real estate appraiser from Austin, Texas called the same TTI researcher asking for information about the possible economic impact on a client's business property abutting U.S. Highway 183 that was being widened from a four-lane direct access facility to a four-lane limited access freeway with service roads. Due to lack of prior research, this research economist was not able to provide any assistance to these people.

To help fill this data gap, the TTI researcher proposed the Longview highway widening study and later the current study of three widening projects located on State Highway (S.H.) 21 in Caldwell, Texas; S.H. 199 west of Fort Worth, Texas; and U.S. Highway 59 in Houston, Texas. The Longview study has been completed and the findings are presented in a research report released in 1993 [1]. Some of the findings from the current widening study are presented in this report, which describes the widening of S.H. 199 between Azle and Springtown, Texas.

Highway Improvement

Location

The construction site of interest is a 15.13 kilometer segment of S.H. 199 between Azle and Springtown, Texas. The project is divided into two segments, one between Springtown and F.M. 2257, and the other between F.M. 2257 and Azle. Although none of the properties are in the Azle city limit, the properties between F.M. 2257 and Azle will be referred to as Azle properties. The Azle segment is 7.66 kilometers, and the Springtown segment is 7.47 kilometers.

Description of Before and After Design

The construction transformed a two-lane undivided highway to a four-lane divided highway with a two-way left-turn lane or ditch. An additional roadway providing two lanes and shoulders was added, leaving a 23-meter depressed median between the two roadways. Left-turn lanes plus acceleration and deceleration lanes were provided at most medians.

There were two bridges on the original roadway, and similar structures had to be built on the new roadway. A multiple box culvert was enlarged to provide adequate drainage capacity and widened to meet safety requirements. A similar structure was constructed on the new roadway.

Traffic Volumes, Accidents, and Travel Times

TxDOT estimated the average daily traffic (ADT) in 1985 as 12,800, and the 20 year projected ADT as 28,600. The average number of accidents for the construction period was slightly higher than the average number of accidents prior to construction, but was less after construction than before. Instrumented vehicles traversed the study area in an average time of ten minutes and 34 seconds in 1991, an average time of 11 minutes and two seconds in 1992 (a 4% increase), and 11 minutes and three seconds in 1993 (a 0.15% increase). After construction, the travel time was nine minutes and 38 seconds, a 9% decrease from before construction.

Construction Costs and Construction Dates

The Azle construction occurred between October 1990 and April 1993, and cost $3,620,214. The Springtown construction occurred between September 1992 and December 1994 and cost $8,082,411.12. It was scheduled to end in October 1994. Data for the construction period are highlighted in the tables to follow.

Study City and County

Historical data on the study cities, Azle and Springtown, and county, Parker, are presented in this section and used in other sections to help interpret the findings of data relating to the S.H. 199 improvement in Azle and Springtown before versus during and after construction.

Population

Population figures for Azle and Springtown are shown in Figure 1. Over the past ten years or so, the population of Azle has varied between 5,800 and 8,860, while the population of Springtown has varied between 1,600 and 2,300. Azle's population has slowly increased, while Springtown's population peaked in the 1980s. This situation may be attributable to a decline in petroleum exploration in the area.

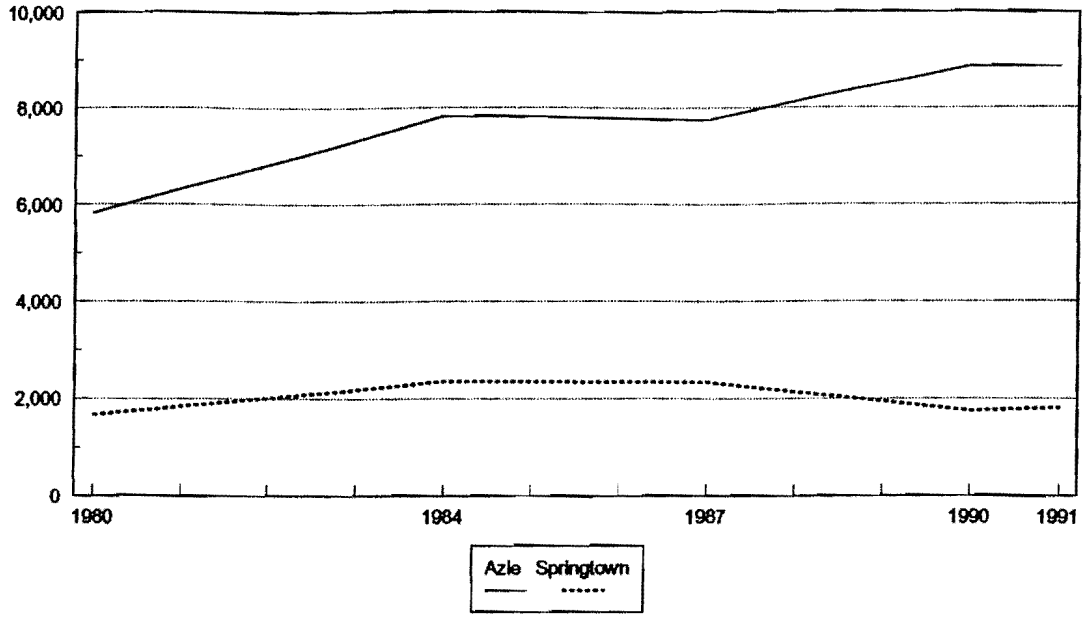


Figure 1. Azle and Springtown Population for Various Years

Parker County population figures are shown in Figure 2. The population has slowly increased from 44,609 in 1980 to 72,730 in 1995.

Employment

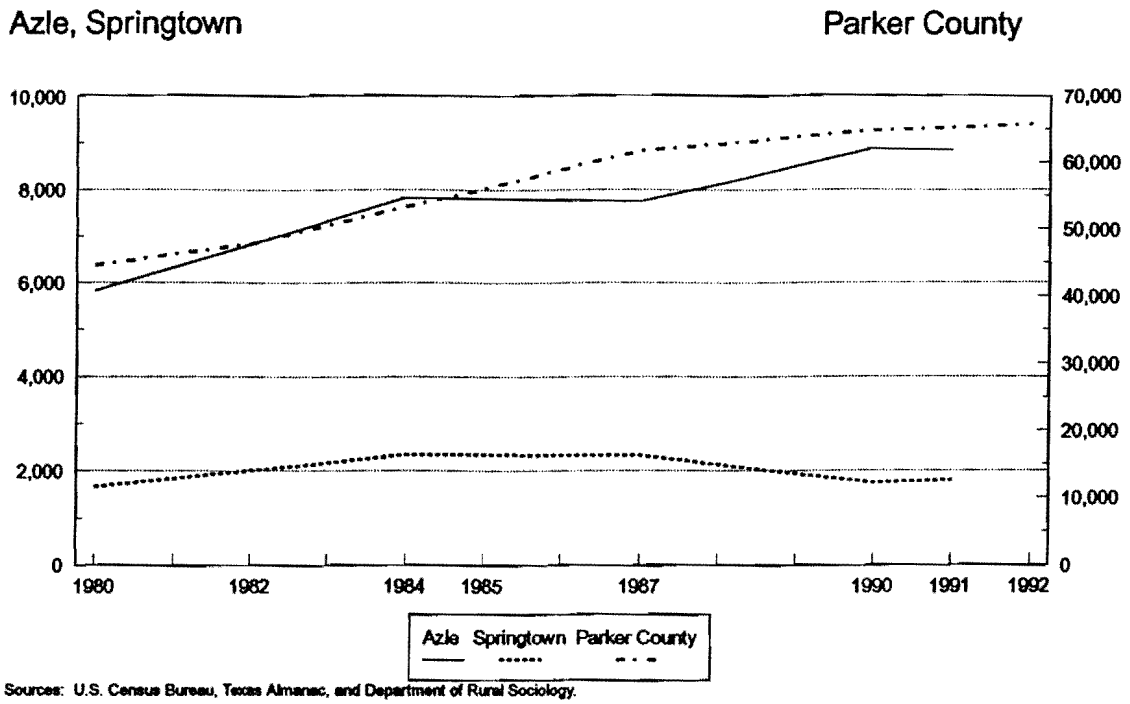
Employment figures for Parker County are presented in Figure 3. Between 1980 and 1992, employment slowly increased, ranging from 7,748 in 1980 to 13,900 in 1994.

Wages

Real wages for Parker County are presented in Figure 4. The changes in real wages are similar to those of employment. They increased from $149 million in 1980 to $281 million in 1994.

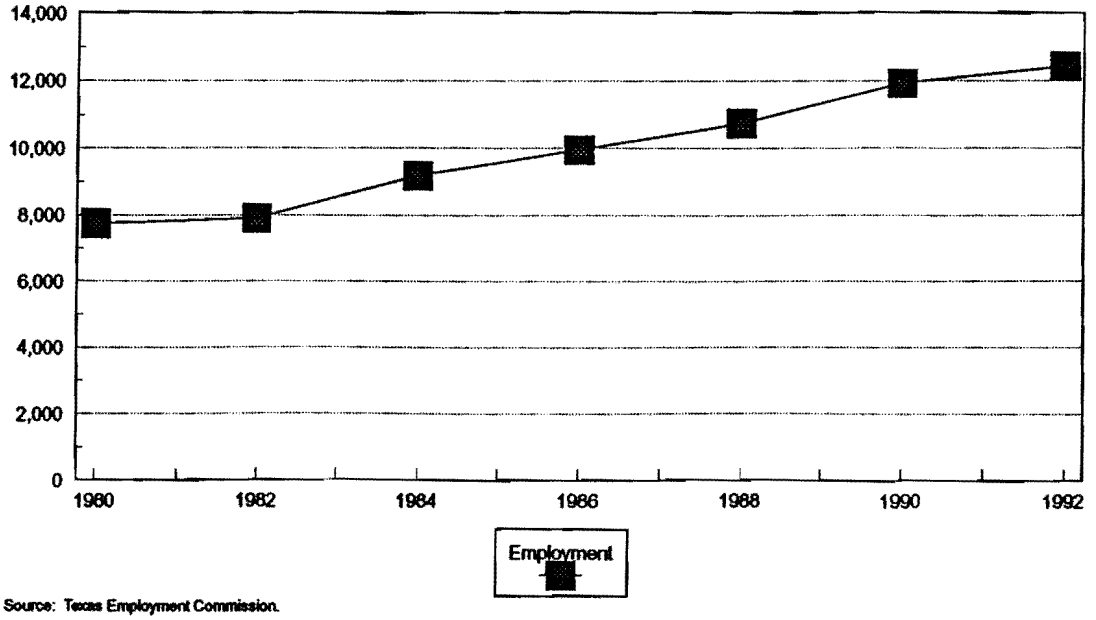
Number of Businesses

The number of businesses in Parker County slowly increased from 1,090 to 1,567 between 1989 and 1994 (see Figure 5). The number of Azle businesses increased during that time as well, from 223 in 1989 to 283 in 1994 (see Figure 6). The number of Springtown businesses also increased during that time period, except for a slight decrease in 1991. There were 63 businesses in 1989, 67 businesses in 1990, and 66 businesses in 1991. Thereafter, it increased to 88 in 1994.



Sources: U.S. Census Bureau, Texas Almanac, and Department of Rural Sociology.

Figure 2. Parker County Population for Various Years



Source: Texas Employment Commission.

Figure 3. Parker County Employment for Various Years

Gross Sales

Real Parker County business gross sales increased between 1986 and 1989, and again between 1992 and 1994. They decreased between 1984 and 1986, and again between 1989 and 1991 (see Figure 5). The values ranged from $819 million to $1,115 million.

Real Azle business gross sales increased between 1984 and 1988, and again between 1991 and 1993. They decreased between 1988 and 1991, and again between 1993 and 1994 (see Figure 6). The values ranged from $160 million to $220 million. Therefore, they were falling as construction began, and began to rise as construction ended. They decreased after construction ended.

Real Springtown business gross sales increased between 1984 and 1985, and again between 1987 and 1993. They decreased between 1985 and 1987, and again between 1993 and 1994 (see Figure 6). The values ranged from $25 million to $33 million. Sales were increasing as construction began, and decreased as construction ended.

Property Values

Parker County real net appraisal property values more than doubled between 1983 and 1986, but have been decreasing since then (Figure 7). They have ranged from $3.359 billion to $1.371 billion.

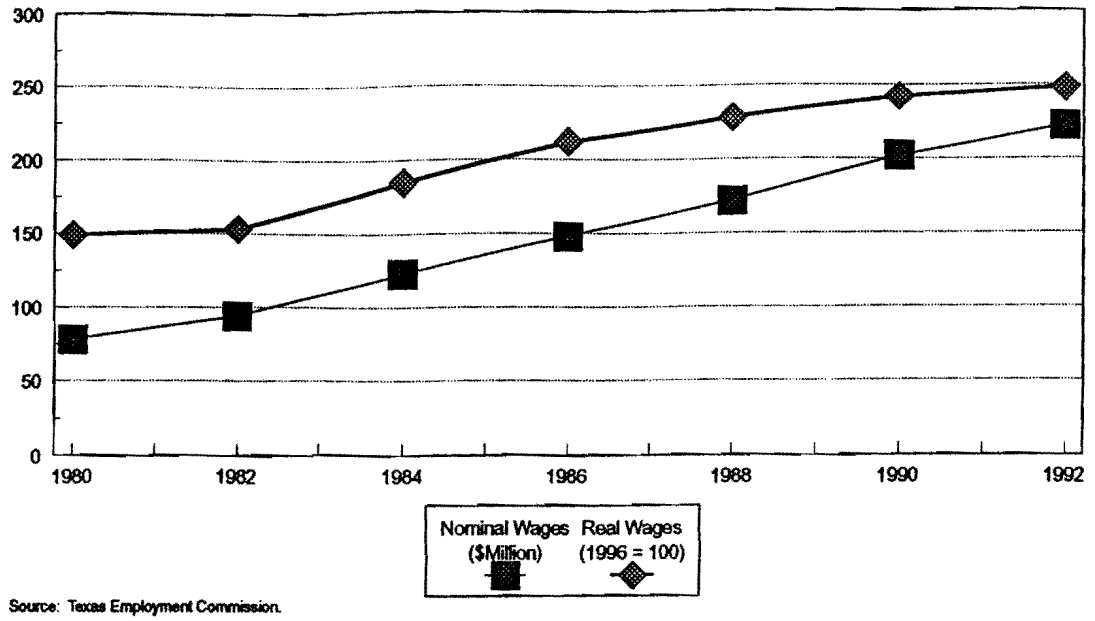
Real net appraised values of Springtown property had a trend similar to Parker County property values, but the increase between 1983 and 1986 was only 6% (Figure 8). They have ranged from $227 million to $436 million.

Study Methods and Data Sources

The study method is to evaluate data collected to represent the situation before, during, and after construction of the S.H. 199 widening project. The construction period data are highlighted in the tables. Below is a brief summary of the methods used in establishing each type of impact. Data for Azle and Springtown, and, to a lesser extent, Parker County, are compared with the state highway-specific data to interpret the latter data in estimating construction period impacts and after-period impacts.

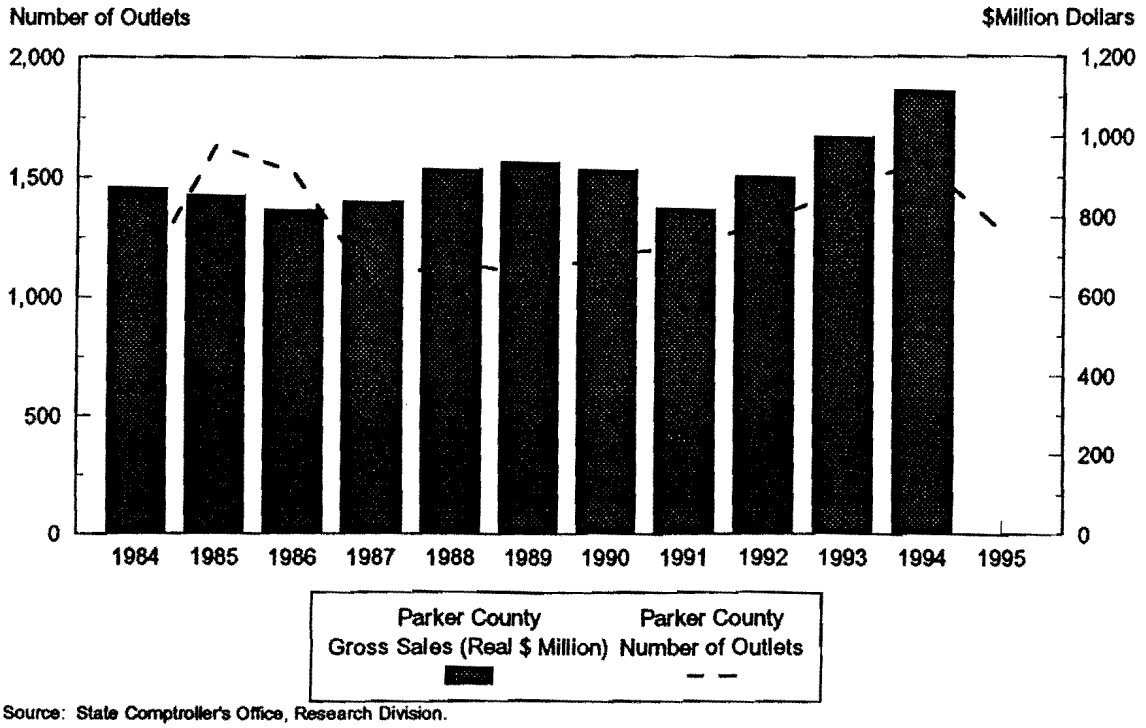
Business Impacts

Business impacts were evaluated by studying trends in the State Comptroller's record of number and types of businesses since 1984. Business impacts were also evaluated through a survey of the business owners and managers along the widened sections of S.H. 199. Managers and owners were asked about changes in their number of parking spaces, employees, and customers, as well as sales and profit levels.



Source: Texas Employment Commission.

Figure 4. Parker County Wages for Various Years



Source: State Comptroller's Office, Research Division.

Figure 5. Parker County Gross Sales and Number of Outlets for Various Years

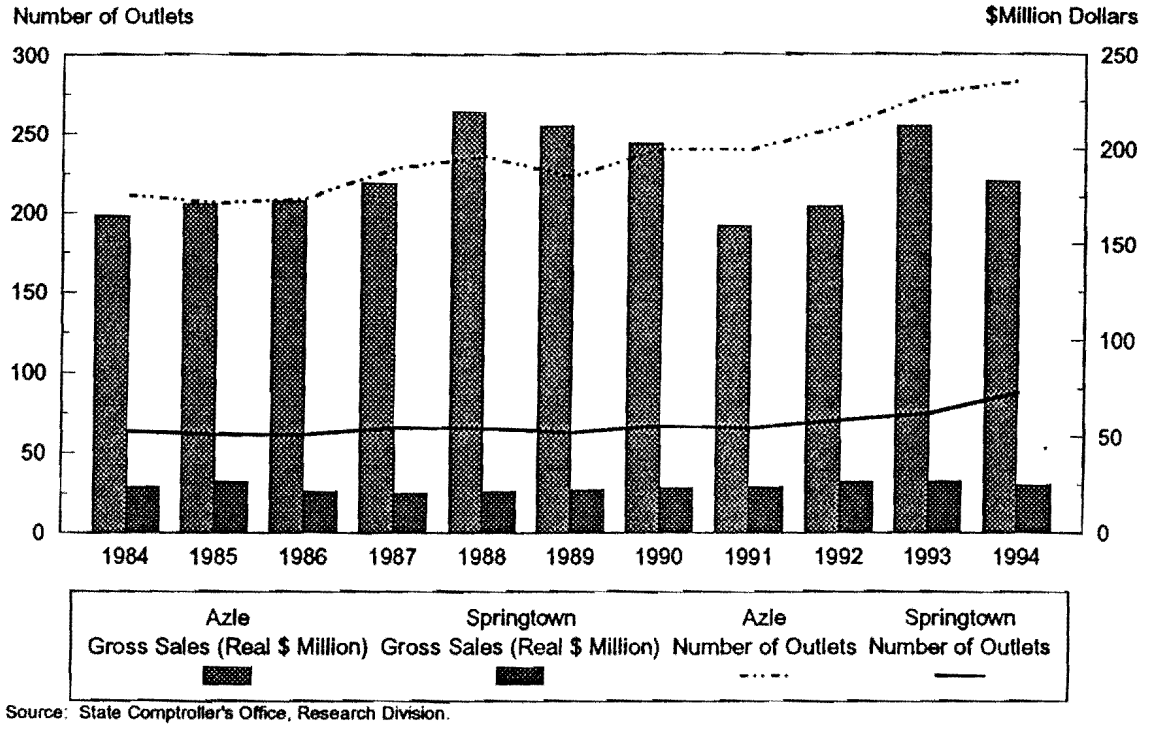


Figure 6. Azle and Springtown Gross Sales and Number of Outlets

Property Value Impacts

Property value trends were evaluated using the Parker County Appraisal District's values for Parker County, Azle, and S.H. 199 properties. Business owners' and managers', as well as residents', opinions about the changes in property values were also incorporated in the analysis.

User Cost Impacts

User cost impacts were estimated by investigating instrumented vehicle, accident, and ADT data, as well as business owners', managers', and residents' opinions on the changes in traffic volumes, travel time, and accidents on S.H. 199. They were also analyzed using the MicroBencost benefit-cost model.

City and County Tax Revenue Impacts

State Comptroller's data was used to calculate Azle and Springtown average percent taxable sales per business by SIC code, and the percentage was applied to the annual sales provided by business owners and managers in the study area. City and

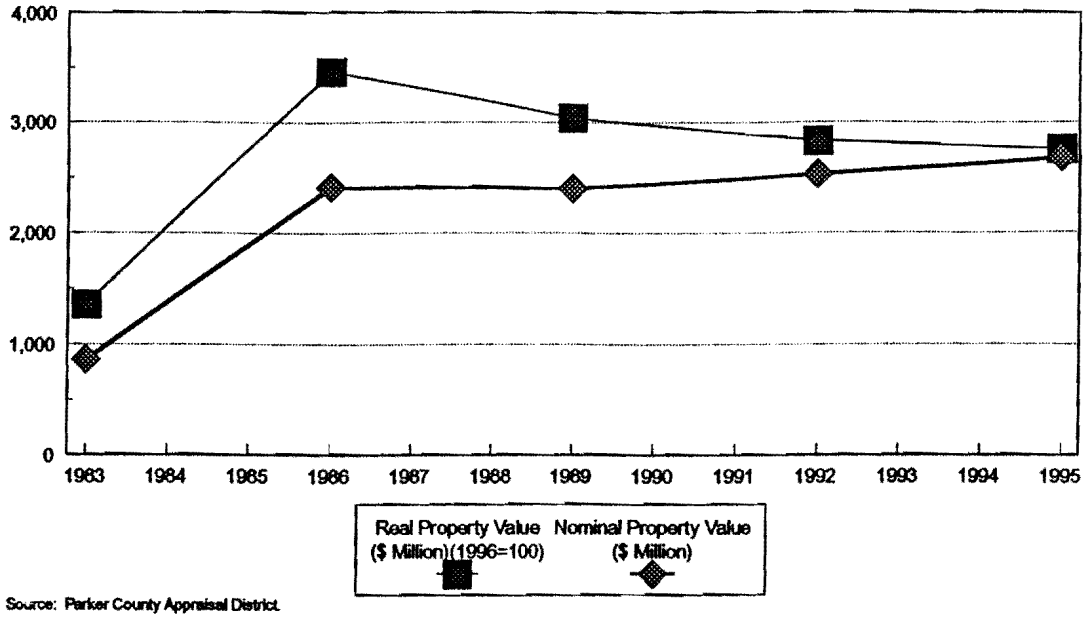


Figure 7. Parker County Property Value for Various Years

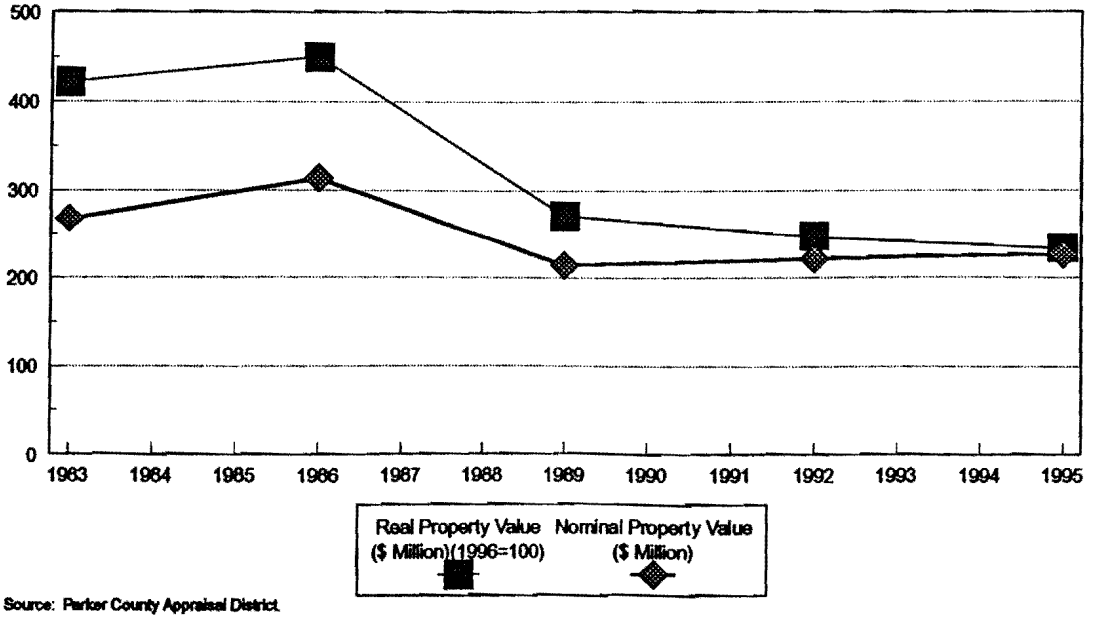


Figure 8. Springtown Real Property Value for Various Years

county tax rates, obtained from the Parker County Tax Assessor-Collector and the State Comptroller's Office, were applied to these sales volumes, as well as to the property values obtained from the Parker County Appraisal District.

Environmental and General Appearance Impacts

Abutting business owners', managers', and residents' opinions on the change in noise level, air pollution level, and general appearance of S.H. 199 were used to evaluate the impact of the widening construction on these aspects of S.H. 199.

Contractor and TxDOT Performance Evaluation

Abutting business owners' and managers' opinions on contractor and TxDOT performance were used to evaluate these aspects. The TxDOT area engineer's assessment of the contractor was also included in the contractor performance evaluation.

BUSINESS IMPACTS

INTRODUCTION

In this section, business trends for all Azle, Springtown, and Parker County businesses will be compared with those of businesses along widened sections of S.H. 199 between Azle and Springtown. The opinions of abutting business managers regarding various aspects of the construction are presented. The first aspects to be studied are the number of parking spaces, the number of customers per day, and the number of employees. Then the impact on gross sales and net profit will be examined.

The business managers located along S.H. 199 were surveyed about the impacts of the construction on their businesses. They were asked by what percentage interval various business aspects were affected by the construction. Customer impacts included the change in available parking and change in the number of customers during construction. The impacts on sales, net profits, and number of employees were also investigated. Land value impacts and impacts on the general quality of life during construction, as measured by travel time through the construction area, number of accidents, and traffic volumes, were also studied. Actual values were solicited for gross sales, number of employees and parking spaces/occupied parking spaces, and percentage of out-of-town customers. The business managers were also surveyed on their assessment of the contractor's and TxDOT supervisor's performance. This section focuses on the business aspects of the survey.

The during-construction survey was administered to the business managers between F.M. 2257 and Azle in October 1993, and to the business managers between F.M. 2257 and Springtown in January 1995, after construction on the respective ends of the project was completed. A copy of each survey instrument is included in Appendix A. There were 46 respondents to the Azle survey, and 61 for the Springtown survey.

A similar survey was mailed to displaced businesses, and a copy of this survey is included in Appendix B. Only two managers responded, so there was not enough information to represent displaced business managers' opinions.

The after-construction surveys were administered in Azle and Springtown in August, 1996. There were 24 responses from Azle business managers and 46 responses from Springtown business managers. A copy of these surveys is included in Appendix C.

CHARACTERISTICS OF HIGHWAY BUSINESSES

The classification for highway businesses is not as detailed as the State Comptroller classifications for Azle, Springtown, and Parker County. For highway businesses, the focus is on retail sales, retail service, professional, and other types of business.

Number and Types

Azle

During Construction. Over half (65%) of the respondents were managers of retail sales establishments (Table 1). Eleven percent were involved in retail service establishments, and 15% were involved in professional service operations. Nine percent were involved in other types of businesses.

After Construction. The distribution was similar after construction. Fifty-eight percent were managers of sales establishments, 13% were involved in retail service, and 25% were involved in professional service.

Springtown

During Construction. Over half (55%) of the respondents were managers of retail sales establishments (Table 2). Twenty percent were involved in retail service establishments, and 23% were involved in professional service operations. Two percent were involved in other types of businesses.

After Construction. Thirty-three percent of the businesses were involved in retail sales, 28% were involved in retail service, and 37% were involved in professional service after construction.

Age of Businesses

Azle

Sixty-one percent (28) of the businesses were less than five years old (Table 3), including 19 businesses that started during construction. Twenty-nine percent (13) of the businesses were over six years old. Approximately 45% of the businesses existed before and during construction.

Springtown

Forty-nine percent (30) of the businesses were less than five years old (Table 4), including 11 that started during construction. Forty-six percent (28) were more than six years old. Approximately 54% of the businesses existed before and during construction.

Age of Buildings

Azle

During Construction. Only 11% of the buildings were less than five years old (Table 5). Forty-three percent were six to 10 years old, and 44% were over 11 years old.

Table 1. Distribution of the Azle Respondents' Businesses by Type of Business

Business Type	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Retail Sales	30	65	14	58
Retail Service	5	11	3	13
Professional Service	7	15	6	25
Other	4	9	1	4
Total	46	100	24	100

Table 2. Distribution of the Springtown Respondents' Businesses by Type of Business

Business Type	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Retail Sales	33	55	15	33
Retail Service	12	20	13	28
Professional Service	14	23	17	37
Other	1	2	1	2
Total	60	100	46	100

Table 3. Distribution of Azle Respondents by the Age of Their Business

Building Age	Number of Businesses	Percent of Businesses
< 5 Years	28	61
6 - 10 Years	9	20
11 - 20 Years	3	7
> 20 Years	1	2
No Answer	5	11
Total	46	101*

* Percentages may not add to 100% due to rounding.

Table 4. Distribution of Springtown Respondents by the Age of Their Business

Business Age	Number of Businesses	Percent of Businesses
< 5 Years	30	49
6 - 10 Years	12	20
11 - 20 Years	11	18
> 20 Years	5	8
No Answer	3	5
Total	61	100

Table 5. Distribution of Azle Respondents by the Age of Their Buildings

Building Age	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
< 5 Years	5	11	0	0
6 - 10 Years	20	43	7	29
11 - 20 Years	10	22	1	4
> 20 Years	10	22	5	21
No Answer	1	2	11	46
Total	46	100	24	100

After Construction. None of the buildings were less than five years old. Twenty-nine percent were six to 10 years old and 25% were over 11 years old. There was no response from 46% of the managers.

Springtown

During Construction. Roughly one-fifth of the buildings fell into each category of less than five years old, six to 10 years old, 11 to 20 years old, over 20 years old, and no answer (Table 6).

After Construction. Twenty-six percent were less than five years old, 17% were six to 10 years old, 26% were 11 to 20 years old, and 13% were over 20 years old.

Owner of Buildings

Azle

During Construction. Approximately half (48%) of the businesses owned their buildings, and the rest leased their buildings.

After Construction. Two-thirds of the businesses owned their buildings, and the rest leased their buildings.

Table 6. Distribution of Springtown Respondents by the Age of Their Business

Building Age	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
< 5 Years	11	18	12	26
6 - 10 Years	12	20	8	17
11 - 20 Years	14	23	12	26
> 20 Years	11	18	6	13
No Answer	13	21	8	17
Total	61	100	46	99*

* Percentages may not add to 100% due to rounding.

Springtown

During Construction. Approximately half (48%) of the business owners owned their buildings, and the rest leased their buildings.

After Construction. Sixty-one percent of the respondents owned their buildings, and 31% leased them after construction.

IMPACT ON INDIVIDUAL HIGHWAY BUSINESSES

The owners of individual highway businesses were interviewed to obtain hard data to measure the total before period versus construction changes in the performance of their businesses, as well as obtain their "opinion" data to estimate the extent of changes due to highway construction activities. The findings from these two databases are presented below.

Customer Parking Spaces Available

Azle

During Construction. Business managers were asked to estimate the percentage change in their businesses' number of parking spaces during construction. Slightly over half of the managers reported no change in their number of parking spaces (Table 7). Almost 25% indicated that their number of parking spaces decreased by 50% to 100%.

Table 7. Responding Business Managers' Estimates of the Percentage Change in Their Number of Parking Spaces in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	1	2	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	0	0
Up 5 - 9%	0	0	0	0
Up 0 - 4%	0	0	0	0
No Change	26	57	18	75
Down < 5%	1	2	1	4
Down 5 - 9%	0	0	2	8
Down 10 - 24%	1	2	2	8
Down 25 - 49%	3	7	0	0
Down 50 - 100%	11	24	1	4
Don't Know	0	0	0	0
No Answer	3	7	0	0
Total Respondents	46	101*	24	99*

* Percentages may not add to 100% due to rounding.

Managers were asked to indicate their number of parking spaces before and during construction. The businesses had a total of 592 parking spaces before construction and 395 parking spaces during construction (Table 8). Therefore, the construction resulted in a loss of approximately one-third of the abutting businesses' parking spaces.

Individual managers' opinions, presented collectively in Table 7, are compared to the actual number of parking spaces they reported, presented aggregately in Table 8. In Table 9, the opinions are classified in the left column as increase, no change, or decrease. The difference in the before and during number of parking spaces reported by each manager is similarly classified in the right three columns. Observations along the diagonal represent opinions corresponding to the reported number of parking spaces, i.e. they said the number of parking spaces changed a certain way and the difference between their reported number of parking places before and during construction reflected that change. Of the 34 managers providing enough information to be classified in the table, all but one reported opinions consistent with their numbers.

After Construction. Seventy-five percent of the managers thought that their number of customer parking spaces did not change after construction, while 24% thought they decreased (Table 7). There were 279 parking spaces reported before construction and 270 reported after construction, which means there were 3% less parking spaces after construction (Table 10).

As seen in Table 11, most managers' opinions of their change in number of parking spaces, presented in Table 7, agreed with the number of parking spaces they reported before and after construction, reported aggregately in Table 10. Those managers included 14 whose number of parking spaces did not change and two whose number declined. Three managers' opinions were more negative than was reflected in the change in number of parking places they reported.

Springtown

During Construction. Most respondents (74%) did not think that their number of parking places changed during construction (Table 12). Twenty-five percent thought that their number of parking places decreased. Responding Springtown businesses had 861 parking spaces before construction and 725 during construction, a 16% loss of parking spaces (Table 13).

In Table 14, the individual managers' opinions, presented collectively in Table 12, are compared to the actual number of parking spaces they reported, presented aggregately in Table 13. Most of the managers' opinions corresponded with the number of parking spaces they reported, including 35 managers whose number of parking spaces did not change and 13 whose number decreased. Five managers' opinions were more positive and three were more negative than was reflected in the change in number of parking places they reported.

After Construction. Seventy-six percent of the respondents did not think that their number of parking spaces changed. Six percent thought that the number increased and 12% thought that it decreased. Responding Springtown businesses had 830 parking spaces before construction and 753 after construction, a 9% loss (Table 15).

Table 8. Changes in Business Impacts for Azle, Texas During Construction on S.H. 199

Impact Items	Before	During	Change	
			Number	Percent
Parking Spaces Available	592	395	-197	-33
Parking Spaces Occupied	418	267	-151	-36
Out-of-Town Customers	34	21	NA	-13
Full-Time Employees	136	133	-3	-2
Part-Time Employees	12	35	23	192

Table 9. Estimated Versus Actual Change in Number of Parking Spaces During Construction

Managers' Opinions of Their Change in Available Customer Parking Spaces	Change in Available Customer Parking Based on the Number of Parking Spaces Managers Said They Had*		
	Increase	No Change	Decrease
Increase	1	0	0
No Change	0	17	1
Decrease	0	0	15

* Twelve managers did not provide enough information to be classified in this table.

Table 10. Changes in Business Impacts for Azle, Texas After Construction on S.H. 199

Impact Items	Before	After	Change	
			Number	Percent
Parking Spaces Available	279	270	-9	-3
Parking Spaces Occupied	151	141	-10	-7
Out-of-Town Customers	38	37	NA	-1
Full-Time Employees	54	59	5	9
Part-Time Employees	16	20	4	25

Table 11. Estimated Versus Actual Change in Number of Parking Spaces After Construction for Azle, Texas

Managers' Opinions of Their Change in Available Customer Parking Spaces	Change in Available Customer Parking Based on The Number of Parking Spaces Managers Said They Had After Construction*		
	Increase	No Change	Decrease
Increase	0	0	0
No Change	0	14	0
Decrease	2	1	2

* Five managers did not provide enough information for the table.

Table 12. Abutting Springtown Business Managers' Opinions on the Change in Number of Parking Spaces

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	2	4
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	0	0
Up 5 - 9%	0	0	1	2
Up 0 - 4%	1	2	0	0
No Change	45	74	35	76
Down < 5%	0	0	0	0
Down 5 - 9%	2	3	2	4
Down 10 - 24%	5	8	2	4
Down 25 - 49%	4	7	1	2
Down 50 - 100%	4	7	1	2
Don't Know	0	0	1	2
No Answer	0	0	1	2
Total Respondents	61	101*	46	98*

* Percentages may not add to 100% due to rounding.

Table 13. Changes in Business Impacts for Springtown, Texas During Construction on S.H. 199

Impact Items	Before (Number of Businesses)	During (Number of Businesses)	Change	
			Number	Percent
Parking Spaces Available	861	725	-136	-16
Parking Spaces Occupied	618	427	-191	-31
Out-of-Town Customers	30	26	NA	-4
Full-Time Employees	271	257	-14	-5
Part-Time Employees	108	94	-14	-13

Table 14. Estimated Versus Actual Change in Number of Parking Spaces During Construction in Springtown

Managers' Opinions of Their Change in Available Customer Parking Spaces	Change in Available Customer Parking Based on the Number of Parking Spaces Managers Said They Had*		
	Increase	No Change	Decrease
Increase	0	1	0
No Change	2	35	4
Decrease	0	1	13

* Five managers did not provide enough information to be classified in this table.

Table 15. Changes in Business Impacts for Springtown, Texas After Construction on S.H. 199

Impact Items	Before	After	Change	
			Number	Percent
Parking Spaces Available	830	753	-77	-9
Parking Spaces Occupied	472	434	-38	-8
Out-of-Town Customers	32	35	NA	3
Full-Time Employees	170	187	17	10
Part-Time Employees	76	78	2	3

As seen in Table 16, most managers' opinions of their change in number of parking spaces, shown in Table 12, agreed with the number of parking spaces they reported before and after construction, reported aggregately in Table 15. Twenty-six businesses' number of parking places did not change, one business' number increased, and five businesses' number decreased. Three managers' opinions were more positive than their numbers indicated they should be, and one manager's opinion was more negative.

Customer Parking Spaces Occupied

Azle

During Construction. The number of occupied parking spaces is also important to business owners. Azle businesses had 418 occupied parking spaces during the busiest hour of the day before construction, and 267 during construction (Table 8). Business managers indicated that impeded access to businesses might have caused this 36% reduction in occupied parking spaces.

After Construction. Azle businesses had 151 occupied parking spaces during the busiest hour of the day before construction, and 141 during construction, a 7% loss (Table 10).

Springtown

During Construction. The number of occupied parking spaces decreased from 618 to 427 during construction for the responding Springtown businesses, a 31% decrease (Table 13).

After Construction. There were 472 occupied parking spaces during the busiest hour of the day before construction, and 434 after construction, an 8% decrease (Table 15).

Customers per Day

Azle

During Construction. Business managers were asked to estimate the percentage change in their businesses' number of customers per day during construction. Fifty-eight percent of the businesses lost customers, 28% had no change in their number of customers, and 6% gained customers (Table 17). Most business managers attributed the decrease to reduced accessibility of their business. One business had a narrow driveway over a ditch, and the construction made it more difficult for commercial vehicles to enter. In another situation, construction equipment was parked on a nearby crossover and visibility was reduced.

After Construction. Twelve percent of the businesses lost customers, 63% had no change in their number of customers, and 25% gained customers (Table 17).

Springtown

During Construction. Springtown business managers thought that the change in their number of customers per day was similar to the changes in their gross sales and net profit (Table 18). Seventy percent thought that their number of customers per day decreased, including 49% that thought that it decreased over 25%. Twenty-six percent thought that it did not change, and 2% thought that it increased 10% to 24%.

After Construction. The number of customers per day after construction did not change for 28% of the managers, but it increased for 56% and decreased for 10% (Table 18).

Table 16. Estimated Versus Actual Change in Number of Parking Spaces After Construction in Springtown, Texas

Managers' Opinions of Their Change in Available Customer Parking Spaces	Change in Available Customer Parking Based on The Number of Parking Spaces Managers Said They Had After Construction*		
	Increase	No Change	Decrease
Increase	1	1	1
No Change	1	26	1
Decrease	0	0	5

* Ten managers did not report their number of parking spaces.

Percent of Customers From Out-of-Town

Azle

During Construction. One of the factors that could affect the number of customers per day is the percentage of customers from out-of-town. This percentage could in turn be affected by the construction. The average percent of out-of-town customers decreased from 34% before construction to 21% during construction (Table 8).

After Construction. The percentage of out-of-town customers only decreased 1%, from 38% to 37%, after construction (Table 10).

Springtown

During Construction. The percentage of out-of-town customers decreased 4%, from 30% to 26%, during construction (Table 13).

After Construction. After construction, the percentage of out-of-town customers increased 3%, from 32% to 35% (Table 15).

Full-Time Employees

Azle

During Construction. When asked to give a percentage change in their number of full-time employees, 74% of the responding businesses indicated that the number did not change (Table 19). Seventeen percent lost full-time employees.

Table 17. Business Managers' Estimate of the Percentage Change in Their Number of Customers per Day in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	1	2	1	4
Up 10 - 24%	2	4	3	13
Up 5 - 9%	0	0	2	8
Up 0 - 4%	0	0	0	0
No Change	13	28	15	63
Down < 5%	1	2	0	0
Down 5 - 9%	3	7	1	4
Down 10 - 24%	2	4	1	4
Down 25 - 49%	8	17	0	0
Down 50 - 100%	13	28	1	4
Don't Know	0	0	0	0
No Answer	3	7	0	0
Total Respondents	46	99*	24	100

* Percentages may not add to 100% due to rounding.

Table 18. Abutting Springtown Managers' Opinions About the Change in Their Number of Customers per Day

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	2	4
Up 25 - 49%	0	0	5	11
Up 10 - 24%	1	2	14	30
Up 5 - 9%	0	0	5	11
Up 0 - 4%	0	0	0	0
No Change	16	26	13	28
Down < 5%	0	0	0	0
Down 5 - 9%	2	3	2	4
Down 10 - 24%	11	18	2	4
Down 25 - 49%	16	26	0	0
Down 50 - 100%	14	23	1	2
Don't Know	1	2	0	0
No Answer	0	0	2	4
Total Respondents	61	100	46	98*

* Percentages may not add to 100% due to rounding.

Table 19. Responding Business Managers' Estimate of the Change in Their Number of Full-Time Employees in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	0	0
Up 5 - 9%	0	0	2	8
Up 0 - 4%	0	0	1	4
No Change	34	74	19	79
Down < 5%	0	0	0	0
Down 5 - 9%	1	2	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	1	4
Down 50 - 100%	7	15	0	0
Don't Know	1	2	0	0
No Answer	3	7	1	4
Total Respondents	46	100	24	99*

* Percentages may not add to 100% due to rounding.

Businesses were also asked to give their numbers of full-time employees before and during the construction. The managers reported a total of 136 full-time employees before construction and 133 full-time employees during construction, a 2% decrease (Table 8). Six businesses started during construction. When those businesses are eliminated from the analysis, there were 119 full-time employees during construction.

As seen in Table 20, most (88%) managers' opinions about the change in their number of full-time employees, presented aggregately in Table 19, agreed with their change in number of full-time employees, presented collectively in Table 8. This was the situation for 27 managers whose number of full-time employees did not change, and for eight who lost full-time employees. One thought he lost full-time employees, but reported more full-time employees during construction. Four managers underestimated the negative impact on their number of full-time employees as they said the number did not change, but their numbers indicated they lost full-time employees. For various reasons, six managers' opinions were not able to be classified in this table.

After Construction. Seventy-nine percent of the managers thought that their number of full-time employees did not change, while 12% thought that their number of full-time employees increased and 4% thought the number decreased during construction (Table 19). The number of full-time employees increased 9%, from 54 to 59, after construction (Table 10).

After-construction full-time employment versus opinion of the change in employment is found in Table 21. The estimated percent change in number of full-time employees, aggregated in Table 19, and change in reported number of full-time employees, aggregated in Table 10, agreed for two managers whose number of full-time employees increased, 13 whose number of full-time employees did not change, and one whose number of full-time employees decreased. Two managers' reported number of full-time employees did not agree with their estimate. Six managers did not provide their number of full-time employees.

Springtown

During Construction. Seventy-nine percent of the Springtown business managers did not think that their number of full-time employees changed during construction (Table 22). One business manager thought that his number of full-time employees increased 25% to 49% during construction, and 21% thought that their number decreased. The number of full-time employees decreased 5% from 271 to 257 (Table 13).

As seen in Table 23, most (81%) managers' opinions about the change in their number of full-time employees, presented aggregately in Table 22, agreed with their reported change in number of full-time employees, presented collectively in Table 13. This was the situation for 38 managers whose number of full-time employees did not change, and for eight who lost full-time employees. Three thought they lost full-time employees, but reported the same number of full-time employees before and after construction. One thought the number did not change and another thought the number increased, but their numbers indicated they decreased. Six overestimated the negative

Table 20. Estimated Versus Actual Change in Number of Full-Time Employees During Construction in Azle

Managers' Opinions of Their Change in Their Number of Full-Time Employees	Change in the Number of Full-Time Employees Managers Said They Had*		
	Increase	No Change	Decrease
Increase	0	0	0
No Change	0	27	4
Decrease	1	0	8

* Six managers did not provide enough information to be classified in the table.

Table 21. Estimated Versus Actual Change in Number of Full-Time Employees After Construction in Azle, Texas

Managers' Opinions of Their Change in Their Number of Full-Time Employees	Change in the Number of Full-Time Employees Managers Said They Had After Construction*		
	Increase	No Change	Decrease
Increase	2	1	0
No Change	1	13	0
Decrease	0	0	1

* Six managers did not provide enough information to be classified in the table.

Table 22. Abutting Springtown Managers' Opinions About the Change in Their Number of Full-Time Employees

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	1	2
Up 25 - 49%	1	2	0	0
Up 10 - 24%	0	0	1	2
Up 5 - 9%	0	0	3	7
Up 0 - 4%	0	0	1	2
No Change	48	79	35	76
Down < 5%	1	2	1	2
Down 5 - 9%	1	2	1	2
Down 10 - 24%	4	7	0	0
Down 25 - 49%	1	2	0	0
Down 50 - 100%	5	8	0	0
Don't Know	0	0	2	4
No Answer	0	0	1	2
Total Respondents	61	102*	46	99*

* Percentages may not add to 100% due to rounding.

Table 23. Estimated Versus Actual Change in Number of Full-Time Employees During Construction in Springtown, Texas

Managers' Opinions of Their Change in Their Number of Full-Time Employees	Change in the Number of Full-Time Employees Managers Said They Had*		
	Increase	No Change	Decrease
Increase	0	0	1
No Change	6	38	1
Decrease	0	3	8

* Four managers did not provide enough information to be classified in the table.

impact as they thought their number did not change, but their reported number of employees increased. For various reasons, four managers' opinions were not able to be classified in the table.

After Construction. Seventy-six percent of the managers thought that there was no change in their number of full-time employees after construction, while 13% thought the number increased and 4% thought it decreased (Table 22). The number of reported full-time employees increased 10%, from 170 to 187 (Table 15).

After construction full-time employment versus opinion of the change in employment is found in Table 24. The estimated percent change in number of full-time employees, aggregated in Table 22, and change in reported number of full-time employees, aggregated in Table 15, agreed for five managers whose number of full-time employees had increased, 17 whose number of full-time employees did not change, and one whose number of full-time employees decreased. Six managers' reported number of full-time employees were more positive than their estimate and four managers' reported number was more negative. Thirteen managers did not provide enough information to be classified in this table.

Table 24. Estimated Versus Actual Change in Number of Full-Time Employees After Construction in Springtown, Texas

Managers' Opinions of Their Change in Their Number of Full-Time Employees	Change in the Number of Full-Time Employees Managers Said They Had		
	Increase	No Change	Decrease
Increase	5	0	0
No Change	5	17	4
Decrease	0	1	1

* Thirteen respondents did not provide enough information to be classified in the table.

Part-Time Employees

Azle

During Construction. When asked to give a percentage change in their number of part-time employees, 89% of the business managers indicated that the number did not change during construction (Table 25). One manager indicated that he had more part-time employees during construction. Abutting businesses employed a total of 12 part-time employees before construction and 35 during construction (Table 8). Therefore, most managers were unaware of the fact that the number of part-time employees almost tripled during construction.

As shown in Table 26, 85% of the managers who reported their number of part-time employees, reported in aggregate in Table 8, reported numbers that agreed with their opinion of the change in number of part-time employees, reported in aggregate in Table 25. The managers with consistent perceptions included 34 whose number of part-time employees did not change and one who gained part-time employees. One manager said his number of part-time employees did not change but the numbers he reported indicated a decrease in part-time employees. Five said their number of part-time employees did not change when their numbers indicated they had gained employees. For various reasons, five managers' opinions were not able to be classified.

After Construction. Eighty-eight percent of the managers did not think that their number of part-time employees changed after construction while 4% thought their number increased (Table 25). There was a 25% increase in the number of part-time employees reported by the responding managers, from 16 to 20 (Table 10).

Table 25. Responding Business Managers' Estimates of the Change in Their Number of Part-Time Employees in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	1	2	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	0	0
Up 5 - 9%	0	0	1	4
Up 0 - 4%	0	0	0	0
No Change	41	89	21	88
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	1	2	0	0
No Answer	3	7	2	8
Total Respondents	46	100	24	100

Table 26. Managers' Estimated Versus Actual Number of Part-Time Employees Before and During Construction in Azle

Managers' Opinions of Their Change in Their Number of Part-Time Employees	Change in the Number of Part-Time Employees Managers Said They Had*		
	Increase	No Change	Decrease
Increase	1	0	0
No Change	5	34	1
Decrease	0	0	0

* Five managers did not provide enough information to be classified in this table.

As shown in Table 27, 88% of the managers who reported their number of part-time employees, presented in aggregate in Table 10, reported numbers that agreed with their perceived change in number of part-time employees, reported in aggregate in Table 25. The managers with consistent perceptions included 14 whose number of part-time employees did not change and one who had more part-time employees. Two thought that their number did not change when the number actually increased. For various reasons, seven managers' opinions were not able to be classified.

Springtown

During Construction. Most respondents (85%) did not think that their number of part-time employees changed during construction (Table 28). One manager thought that his number of part-time employees increased 50% to 100%. Twelve percent thought that the number of part-time employees decreased. The number of part-time employees decreased 13%, from 108 to 94 (Table 13), for abutting businesses during construction on S.H. 199 in Springtown.

As shown in Table 29, 83% of the managers who reported their number of part-time employees, reported in aggregate in Table 13, reported numbers that agreed with their perceived change in number of part-time employees, reported in aggregate in Table 28. The managers with consistent perceptions included 43 whose number of part-time employees did not change and two who lost part-time employees. Three said their number of part-time employees did not change when their numbers indicated they had lost employees, and one said his number of part-time employees increased when it decreased. Five managers gave a more negative estimate when they did not provide numbers. For various reasons, seven managers' opinions were not able to be classified.

Table 27. Managers' Estimated Versus Actual Number of Part-Time Employees Before and After Construction in Azle

Managers' Opinions of Their Change in Their Number of Part-Time Employees	Change in the Number of Part-Time Employees Managers Said They Had		
	Increase	No Change	Decrease
Increase	1	0	0
No Change	2	14	0
Decrease	0	0	0

* Seven managers did not provide enough information to be classified in this table.

Table 28. Abutting Springtown Business Managers' Opinions of the Change in Number of Part-Time Employees

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	1	2	1	2
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	2	4
Up 5 - 9%	0	0	2	4
Up 0 - 4%	0	0	0	0
No Change	52	85	36	78
Down < 5%	0	0	1	2
Down 5 - 9%	2	3	1	2
Down 10 - 24%	1	2	0	0
Down 25 - 49%	1	2	0	0
Down 50 - 100%	3	5	0	0
Don't Know	0	0	2	4
No Answer	1	2	1	2
Total Respondents	61	101*	46	98*

* Percentages may not add to 100% due to rounding.

Table 29. Springtown Managers' Estimated Vs. Actual Number of Part-Time Employees Before and During Construction

Managers' Opinions of Their Change in Their Number of Part-Time Employees	Change in the Number of Part-Time Employees Managers Said They Had*		
	Increase	No Change	Decrease
Increase	0	0	1
No Change	2	43	3
Decrease	0	3	2

* Seven managers did not provide enough information to be classified in this table.

After Construction. Seventy-eight percent of the responding managers did not think their number of part-time employees changed after construction, while 10% thought the number increased, and 4% thought the number decreased (Table 28). There was a 3% increase in the number of reported part-time employees, from 76 to 78, after construction (Table 15).

As shown in Table 30, 79% of the managers who reported their number of part-time employees, reported in aggregate in Table 15, reported numbers that agreed with their perceived change in number of part-time employees, reported in aggregate in Table 28. The managers with consistent perceptions included 24 who said that their number of part-time employees did not change and two who thought they had more part-time employees. Four managers gave a more positive estimate when they did not provide numbers, and three gave a more pessimistic view when they did not provide numbers. For various reasons, 13 managers' opinions were not able to be classified.

Gross Sales Volume

Azle

During Construction. Business managers were asked to estimate the percentage change in their business' gross sales during construction. Slightly over half of the businesses reported a decrease, while 24% of the businesses experienced no change and 9% of the businesses' sales increased (Table 31).

After Construction. Fifty-eight percent of the managers did not think that their gross sales volume changed after construction, while 25% thought it increased, and 12% thought it decreased (Table 31).

Table 30. Springtown Managers' Estimated Vs. Actual Number of Part-Time Employees Before and After Construction

Managers' Opinions of Their Change in Their Number of Part-Time Employees	Change in the Number of Part-Time Employees Managers Said They Had*		
	Increase	No Change	Decrease
Increase	2	2	0
No Change	1	24	2
Decrease	1	1	0

* Thirteen respondents did not provide enough information to be classified in this table.

Table 31. Business Managers' Estimates of the Change in Their Gross Sales Due to Construction on S.H. 199 in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	1	2	3	13
Up 10 - 24%	3	7	1	4
Up 5 - 9%	0	0	2	8
Up 0 - 4%	0	0	0	0
No Change	11	24	14	58
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	6	13	0	0
Down 25 - 49%	5	11	2	8
Down 50 - 100%	14	30	1	4
Don't Know	2	4	1	4
No Answer	3	7	0	0
Total Respondents	46	100	24	99*

* Percentages may not add to 100% due to rounding.

Springtown

During Construction. Seventy percent of the business managers thought that their sales decreased, including 48% that thought their sales decreased by more than 25% (Table 32). Thirty percent thought that their gross sales did not change, and 2% thought that it increased 25% to 49%.

After Construction. Thirty percent of the managers said there was no change in their gross sales volume after construction, while 6% thought that it decreased, and 58% thought that it increased (Table 32).

Annual Sales

Azle

During Construction. Business managers were asked to report their gross sales for several years before construction and for each year during construction. The average gross sales of the responding businesses were not as high after construction started as they were before construction started (Figure 9). Note that 29 businesses started after construction began, and new business sales, especially for businesses starting during the year, might be lower than those of established businesses. This situation might decrease the average gross sales during construction. If the sales of the 16 responding businesses that existed from 1989 to 1992 are considered, their nominal average sales increased 23% to $4.3 million in 1990-1992 over their 1987-1989 average, $3.5 million

As seen in Table 33, the perception of 47% (seven) of the managers of their change in gross sales was the same when they provided sales figures before and during construction, presented aggregately in Figure 9, and when they gave their opinion of the change, presented collectively in Table 31. The managers with consistent perceptions included two whose gross sales did not change, one whose sales increased, and four whose sales decreased. The remaining eight managers' estimates were more negative when they did not provide the figures.

After Construction. No sales were reported for this period.

Springtown

During Construction. In Figure 10, average gross sales for five businesses that were in business and reported sales for all years before and during construction are presented. Average gross sales declined each year. Sales increased the first year of construction and decreased the last two years. Before- and during-construction sales for 18 businesses that existed from the year before construction started are found in Table 34, while the real values are found in Table 35. Retail sales levels decreased 2% (14% in real terms) during construction while service sales increased 65% (53% in real terms). Overall, sales increased 21% (8% in real terms).

Table 32. Springtown Abutting Business Managers' Opinions on Their Change in Gross Sales During Construction

Change in Gross Sales	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50% - 100%	0	0	3	7
Up 25% - 49%	1	2	3	7
Up 10% - 24%	0	0	15	33
Up 5% - 9%	0	0	5	11
Up 0% - 4%	0	0	0	0
No Change	18	30	14	30
Down 0% - 5%	1	2	1	2
Down 5% - 9%	3	5	0	0
Down 10% - 24%	9	15	2	4
Down 25% - 49%	17	28	0	0
Down 50% - 100%	12	20	0	0
Don't Know	0	0	2	4
No Answer	0	0	1	2
Total	61	102*	46	100

* Percentages may not add to 100% due to rounding.

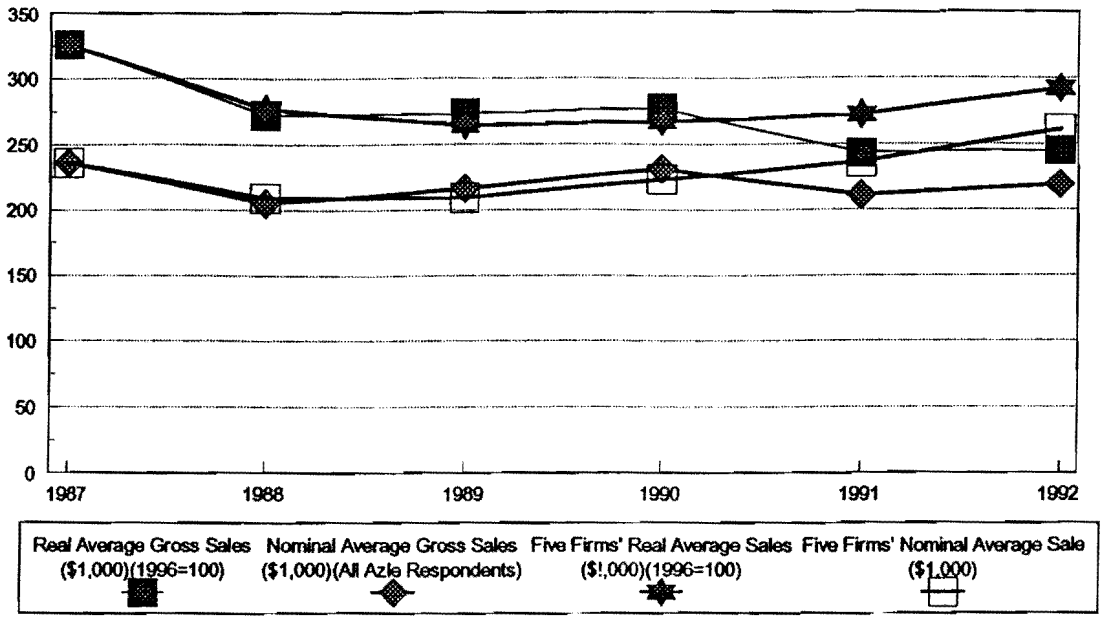


Figure 9. Responding Azle Businesses' Average Gross Sales for Various Years

Table 33. Estimated Versus Actual Changes in Gross Sales During Construction in Azle, Texas

Managers' Opinions of Their Change in Sales	Change in Sales Volume the Managers Reported Before and During Construction		
	Increase	No Change	Decrease
Increase	1	0	0
No Change	3	2	0
Decrease	3	2	4

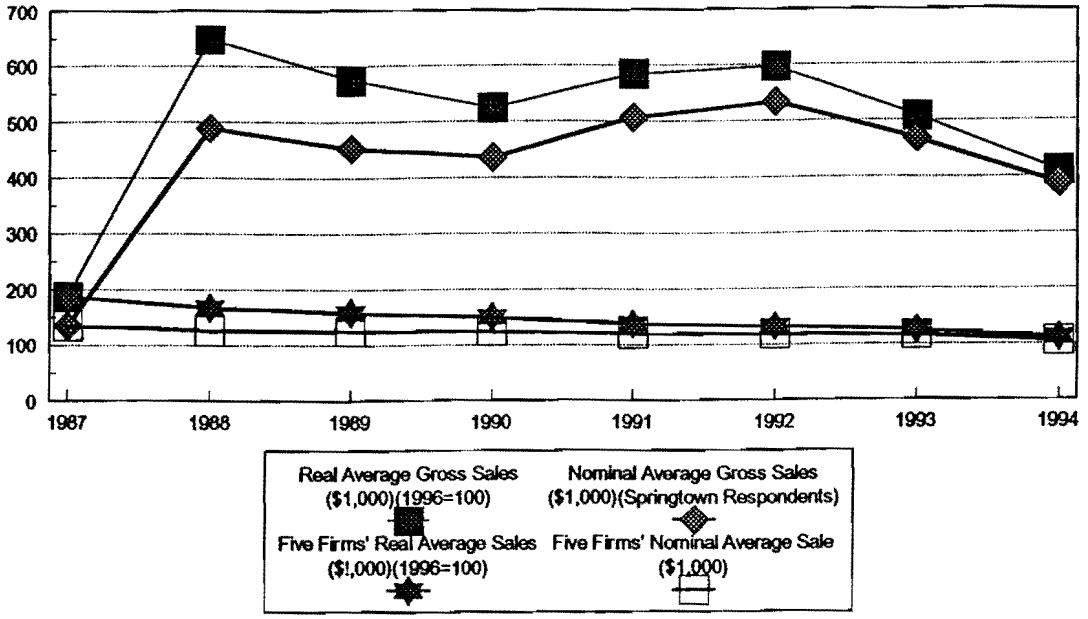


Figure 10. Responding Springtown Businesses' Average Gross Sales for Various Years

Table 34. Responding Businesses' Average Gross Sales Before and During Construction on S.H. 199 in Springtown, Texas

Type of Business	Gross Sales ($)			Number of Respondents
	1987-1991	1992-1994	Percent Change	
Retail	5,998,000	5,890,000	-2	9
Service	3,133,300	5,171,857	65	9
Total	9,131,300	11,061,857	21	18

Table 35. Responding Businesses' Real Average Gross Sales Before and During Construction on S.H. 199 in Springtown, Texas

Type of Business	Real Gross Sales ($) (1996=100)			Number of Respondents
	1987-1991	1992-1994	Percent Change	
Retail	7,418,198	6,407,806	-14	9
Service	3,659,541	5,605,888	53	9
Total	11,077,739	12,013,694	8	18

As seen in Table 36, the perception of 61% (11) of the managers of their change in gross sales was the same when they provided sales figures before and during construction, presented aggregately in Table 34, and when they gave their opinion of the change, presented collectively in Table 32. Two managers' estimates were more positive than when they provided figures, and five managers' estimates were more negative than when they provided the figures.

After Construction. Only four business managers reported their sales before and after construction. Their nominal sales doubled from $1.775 million in 1987 to $3.550 million in 1996, while their real sales increased by 45%. Each firm's sales increased.

As seen in Table 37, the perception of two of the four managers of their change in gross sales was the same when they provided sales figures before and during construction and when they gave their opinion of the change, presented collectively in Table 32. The other two managers' estimates were more negative than when they provided the figures.

Sales Level

Azle

During Construction. Business managers who were not willing to reveal their actual gross sales were asked if they would indicate if their sales were in specific categories (Table 38). Only 13 of the respondents were operating when construction started, but 22 business managers gave sales estimates for 1987. Therefore, some of the businesses must have answered this question for their business' sales before the construction reached them. Businesses which started later than 1987 responded to the interval for their construction period average gross sales. The percentage of respondents in each category was approximately the same for both before and during construction when non-respondents are excluded.

Table 36. Estimated Versus Actual Gross Sales Changes During Construction in Springtown, Texas

Managers' Opinions of Their Change in Sales	Change in Sales Volume the Managers Reported Before and During Construction		
	Increase	No Change	Decrease
Increase	1	0	0
No Change	1	2	2[2]
Decrease	3[1]	1	8[3]

[1] One business' sales did not increase until 1994.
[2] Two businesses' sales did not increase until 1994.
[3] Six businesses' sales did not increase until 1994.

Table 37. Estimated Versus Actual Gross Sales Changes After Construction in Springtown, Texas

Managers' Opinions of Their Change in Sales	Change in Sales Volume the Managers Reported Before and After Construction		
	Increase	No Change	Decrease
Increase	2	0	0
No Change	1	0	0
Decrease	1	0	0

Table 38. Gross Sales Levels of Respondents Abutting Construction in Azle Before and During Construction for Various Years

Annual Sales	Before Construction		During Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Less Than $100,000	14	30	21	46
$100,000 - $500,000	6	13	11	24
$500,000 - $1,000,000	2	4	2	4
Over $1,000,000	0	0	2	4
No Response	24	52	10	22
Total	46	100	46	100

Businesses can gain or lose sales and remain in the same sales category. Therefore, comparing changes in sales categories during construction with the managers' opinion of the change is not as informative as it is for reported sales figures. As seen in Table 39, however, 18% of the managers reported the same sales category, reported aggregately in Table 38, before and during construction and also thought that there was no change in their sales during that time period, as reported aggregately in Table 31. Twelve managers said that their sales decreased and three said they increased, yet all remained in the same sales category. Two said their business sales did not change, and one said it decreased yet reported a higher sales category during construction.

After Construction. The distribution of businesses between the different sales categories stayed the same except that before construction, one firm had $500,000 to $1,000,000 in sales, and no firms had over $1,000,000 in sales, while after construction the reverse was true (Table 40).

As seen in Table 41, one-half of the managers reported the same sales category before and after construction, reported aggregately in Table 40, and also reported no change in sales during that time period, reported aggregately in Table 31. Two other managers reported numbers consistent with their opinions, one with increased sales and one with decreased sales. One manager said that their sales decreased and four said they increased, yet all remained in the same sales category. One said his business sales did not change, but he reported a higher sales category after construction.

Table 39. Estimated Versus Actual Change in Sales Intervals During Construction in Azle, Texas

Managers' Opinions of Their Change in Sales	Change in Sales Interval Category the Managers Reported Before and During Construction		
	Increase	No Change	Decrease
Increase	0	3	0
No Change	2	4	0
Decrease	1	12	0

Table 40. Gross Sales Levels of Respondents Abutting Construction in Azle, Texas Before and After Construction

Annual Sales	Before Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Less Than $100,000	8	33	8	33
$100,000 - $500,000	7	29	7	29
$500,000 - $1,000,000	1	4	0	0
Over $1,000,000	0	0	1	4
No Response	8	33	8	33
Total	24	99*	24	99*

* Percentages may not add to 100% due to rounding.

Table 41. Azle Managers' Perceptions of Their Change in Sales Volume After Construction in Azle, Texas

Managers' Opinions of Their Change in Sales Category	Change in Sales Category the Managers Reported Before and After Construction		
	Increase	No Change	Decrease
Increase	1	4	0
No Change	1	8	0
Decrease	0	1	1

* Eight managers did not provide enough information to be classified in this table.

Springtown

During Construction. Only 17 business owners responded when asked for their before construction sales level (Table 42). This is partially due to the fact that the before construction period was presented as before 1987, which was before right-of-way was purchased. Construction began in 1992. Fifty-five respondents gave their sales category for the during-construction period. When only considering the respondents providing sales information, 8% more respondents earned less than $100,000 during construction than before. Twelve percent fewer respondents earned $100,000 to $500,000 during construction than before, 7% more earned $500,000 to $1 million, and 3% fewer earned over $1 million.

As seen in Table 43, 29% of the managers reported the same sales category, reported aggregately in Table 42, before and during construction and also reported no change in sales during that time period, presented aggregately in Table 32. One manager also reported numbers consistent with his opinion that his sales decreased. Ten managers said that their sales decreased yet remained in the same sales category. One said his business sales decreased and reported a higher sales category during construction.

After Construction. Only 26 business owners responded when asked for their before construction sales level (Table 44). The big change during construction was the increase of 11% (five businesses) in the $500,000 to $1 million sales category and two or three fewer businesses in both of the lower sales categories.

As seen in Table 45, 50% of the managers' sales level changes were consistent with their opinions. Eight reported the same sales category before and after construction, reported aggregately in Table 44, and also reported no change in sales during that time period, reported aggregately in Table 32. Five managers were also consistent as their reported sales level increased and their opinion was that their sales had increased as well.

Table 42. Gross Sales Levels of Respondents in Springtown, Texas Before and During Construction

Annual Sales	Before Construction		During Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Less Than $100,000	7	11	27	44
$100,000 - $500,000	7	11	16	26
$500,000 - $1,000,000	1	2	7	11
Over $1,000,000	2	3	5	8
No Response	44	72	6	10
Total	61	100	61	100

Table 43. Estimated Versus Actual Change in Sales Intervals During Construction in Springtown, Texas

Managers' Opinions of Their Change in Sales	Change in Sales Interval Category the Managers Reported Before and During Construction		
	Increase	No Change	Decrease
Increase	0	0	0
No Change	0	5	0
Decrease	1	10	1

Table 44. Gross Sales Levels of Abutting Responding Businesses in Springtown Before and During Construction

Annual Sales	Before Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Less Than $100,000	8	17	5	11
$100,000 - $500,000	15	33	13	28
$500,000 - $1,000,000	0	0	5	11
Over $1,000,000	3	7	3	7
No Response	20	43	20	43
Total	46	100	46	100

Table 45. Estimated Versus Actual Change in Sales Volume After Construction in Springtown, Texas

Managers' Opinions of Their Change in Sales Category	Change in Sales Category the Managers Reported Before and After Construction		
	Increase	No Change	Decrease
Increase	5	9	0
No Change	1	8	0
Decrease	2	1	0

* Twenty managers did not provide sales categories.

Nine said their sales increased and all remained in the same sales category, which is entirely possible since sales can increase without a change in sales category. Five said their business sales increased and reported a higher sales category after construction, which again is entirely possible given the fact that sales were reported in categories. Two managers said that their sales decreased and one said that it did not change, yet all reported a higher sales category.

Net Profit

Azle

During Construction. Business managers were asked to estimate the percentage change in their businesses' net profit during construction. Slightly over half of the businesses reported a decrease, including 26% of the business managers who reported a decrease of 50 to 100% (Table 46). However, 28% reported no change and 6% reported an increase. These numbers are similar to those for gross sales.

After Construction. After construction, slightly over half thought that their net profit did not change, 25% thought that it increased, and 12% thought that it decreased (Table 46).

Springtown

During Construction. Business managers' opinions on changes in net profit were similar to their opinion on gross sales (Table 47). Seventy percent thought that net profit decreased, including 44% that thought that it decreased over 25%. Twenty-six percent thought that it did not change, and 2% thought that it increased 25% to 49%.

After Construction. Slightly over half thought that their net profit increased, 30% thought that it did not change, and 7% thought that it decreased (Table 47).

IMPACT ON ALL HIGHWAY AND OTHER CITY BUSINESSES

Individual business owners were asked their opinion about the gross sales impact of construction activities on all highway businesses and also on other city businesses. These opinions are presented below.

All Abutting Businesses

Azle

During Construction. Most business managers (77%) on S.H. 199 thought that sales for all businesses on S.H. 199 decreased during construction (Table 48). Assuming that the businesses that reported their actual sales are representative of all abutting businesses, this expectation was not realized. The actual reported sales by 10 businesses increased each construction year, and the average sales during construction (1990 - 1992)

Table 46. Responding Business Managers' Estimates of the Change in Their Net Profit in Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	1	2	3	13
Up 10 - 24%	2	4	1	4
Up 5 - 9%	0	0	2	8
Up 0 - 4%	0	0	0	0
No Change	13	28	14	58
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	7	15	0	0
Down 25 - 49%	4	9	2	8
Down 50 - 100%	12	26	1	4
Don't Know	3	7	1	4
No Answer	3	7	0	0
Total Respondents	46	100	24	99*

* Percentages may not add to 100% due to rounding.

Table 47. Abutting Springtown Business Managers' Opinions of Their Change in Net Profit

Change in Net Profit	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50% - 100%	0	0	3	7
Up 25% - 49%	1	2	3	7
Up 10% - 24%	0	0	14	30
Up 5% - 9%	0	0	6	13
Up 0% - 4%	0	0	0	0
No Change	16	26	14	30
Down 0% - 5%	2	3	0	0
Down 5% - 9%	4	7	0	0
Down 10% - 24%	10	16	3	7
Down 25% - 49%	16	26	0	0
Down 50% - 100%	11	18	0	0
Don't Know	0	0	2	4
No Answer	1	2	1	2
Total	61	100	46	100

were 23% higher than before construction (1989 - 1989) (Figure 9). For all respondents, sales decreased the second year and rose the third year, but not to the level it was during the first year of construction.

After Construction. After construction, 50% of the managers thought that abutting businesses' sales increased, while 38% thought that they did not change. Responding managers did not report their sales after construction, so no comparison of opinions to sales figures can be made.

Springtown

During Construction. Most business managers (70%) on S.H. 199 thought that sales for all businesses on S.H. 199 decreased during construction, while 26% thought they did not change (Table 49). Assuming that the five businesses that reported their actual sales are representative of all abutting businesses, the opinions of most managers were accurate. The actual reported sales by five businesses decreased 10% (Figure 10).

After Construction. Sixty-seven percent of the responding managers thought that abutting businesses' gross sales increased, while 15% did not think they changed (Table 49). The reported sales from four businesses doubled nominally and increased 45% in real terms. Assuming those that reported sales are representative of all businesses, sales increased after construction.

Other City Businesses

Gross Sales

Azle. Respondents' opinions on the change in sales for businesses not abutting S.H. 199 are found in Table 50. Approximately half (56%) of the respondents thought that nonabutting Azle businesses' sales decreased during construction, while 22% thought they did not change. Seventeen percent did not state an opinion on what the effect was. After construction, 50% of the managers thought that nonabutting businesses' sales increased, while 38% thought that they did not change.

Springtown. Most respondents (67%) thought that the gross sales of nonabutting businesses decreased during construction (Table 51). Three managers did not know how the construction affected other businesses, and 31% thought that nonabutting businesses' sales were not affected. After construction, 69% thought that nonabutting businesses' gross sales increased, while 17% thought they did not change.

Employment

Azle. Business managers were asked to estimate the percentage change in employment in parts of Azle and Springtown not located on S.H. 199 during construction. Forty-three percent of the managers indicated that employment decreased (Table 52). One manager said that it increased, while 35% said that it did not change. After construction, 8% did not know how nonabutting businesses' employment changed,

Table 48. Responding Business Managers' Estimates of the Change in Abutting Businesses' Gross Sales in Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	0	0	4	17
Up 5 - 9%	0	0	7	29
Up 0 - 4%	0	0	1	4
No Change	2	4	9	38
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	9	20	0	0
Down 25 - 49%	15	33	0	0
Down 50 - 100%	10	22	0	0
Don't Know	9	20	3	13
No Answer	0	0	0	0
Total Respondents	46	101*	24	101*

* Percentages may not add to 100% due to rounding.

Table 49. Managers' Estimates of the Change in Gross Sales of All Businesses Abutting S.H. 199 in Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	2	4
Up 25 - 49%	0	0	4	9
Up 10 - 24%	0	0	12	26
Up 5 - 9%	0	0	12	26
Up 0 - 4%	0	0	1	2
No Change	16	26	7	15
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	18	30	0	0
Down 25 - 49%	14	23	0	0
Down 50 - 100%	9	15	0	0
Don't Know	3	5	8	17
No Answer	0	0	0	0
Total Respondents	61	101*	46	99*

* Percentages may not add to 100% due to rounding.

Table 50. Respondents' Estimates of the Change in Gross Sales of Nonabutting Springtown Businesses During Construction

Change in Gross Sales for All Businesses	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50% - 100%	0	0	0	0
Up 25% - 49%	0	0	0	0
Up 10% - 24%	1	2	4	17
Up 5% - 9%	0	0	7	29
Up 0% - 4%	1	2	1	4
No Change	10	22	9	38
Down 0% - 5%	2	4	0	0
Down 5% - 9%	0	0	0	0
Down 10% - 24%	8	17	0	0
Down 25% - 49%	9	20	0	0
Down 50% - 100%	7	15	0	0
Don't Know	8	17	3	13
No Answer	0	0	0	0
Total	46	99*	24	101*

* Percentages may not add to 100% due to rounding.

Table 51. Abutting Springtown Business Manager's Opinions on the Change in Gross Sales of Nonabutting Businesses

Change in Gross Sales for All Businesses	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50% - 100%	0	0	1	2
Up 25% - 49%	0	0	5	11
Up 10% - 24%	0	0	12	26
Up 5% - 9%	0	0	13	28
Up 0% - 4%	0	0	1	2
No Change	19	31	8	17
Down 0% - 5%	1	2	0	0
Down 5% - 9%	0	0	0	0
Down 10% - 24%	18	30	0	0
Down 25% - 49%	12	20	0	0
Down 50% - 100%	9	15	0	0
Don't Know	2	3	6	13
No Answer	0	0	0	0
Total	61	101*	46	99*

* Percentages may not add to 100% due to rounding.

Table 52. Azle Respondents' Estimates of the Change in Employment in Parts of Azle and Springtown Not Located on S.H. 199

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	1	2	4	17
Up 5 - 9%	0	0	6	25
Up 0 - 4%	0	0	1	4
No Change	16	35	11	46
Down < 5%	2	4	0	0
Down 5 - 9%	1	2	0	0
Down 10 - 24%	5	11	0	0
Down 25 - 49%	8	17	0	0
Down 50 - 100%	4	9	0	0
Don't Know	9	20	2	8
No Answer	0	0	0	0
Total Respondents	46	100	24	100

but the rest were evenly divided between those who thought it increased and those who thought it did not change.

Springtown. Abutting business managers' opinions of the change in nonabutting businesses' employment are found in Table 53. Almost half (49%) thought it did not change, while 39% thought that it decreased. Nine percent thought that it increased. After construction, 20% did not know how nonabutting businesses' employment changed, and 20% did not think it changed, but 60% thought it increased.

COMPARISON OF CHANGES IN HIGHWAY, CITY, AND COUNTY BUSINESS GROSS SALES

Before versus during construction business sales are compared for S.H. 199, Azle, Springtown, and Parker County based on data obtained from highway business managers and the State Comptroller's Office. These comparisons are made to determine the extent of the construction impact on the gross sales of the S.H. 199 businesses.

Highway Versus City Businesses

Azle

During Construction. The total gross sales for Azle businesses and the actual sales reported by 10 abutting business managers before and during construction are presented in Table 54. Abutting businesses' sales increased 10%, while Azle businesses' sales increased 6%. The increase in abutting businesses' sales was not expected, as can be seen in the opinions of abutting businesses, presented earlier in Table 31. Assuming the businesses reporting their actual gross sales are representative of all abutting businesses, abutting Azle businesses' sales did not appear to be greatly affected by the construction. In real terms, highway business sales decreased 4%, and Azle sales decreased 9% (see Table 55).

After Construction. None of the responding business managers reported their sales after construction. It could be assumed that abutting businesses did as well as all Azle businesses in the after-construction period.

Springtown

During Construction. The total gross sales for Springtown businesses and the actual sales reported by five abutting business managers before and during construction are presented in Table 56. Abutting businesses' sales decreased 10%, while Springtown and Parker County businesses' sales increased 32%. The decrease in abutting businesses' sales is supported by the opinions of abutting businesses, presented earlier in Table 32. If the businesses reporting their actual gross sales are assumed to be representative of all abutting businesses, gross sales did decrease, but not by as much as the managers' opinions would indicate. In real terms, highway business sales decreased 23%, and Springtown sales increased 14% (see Table 57).

Table 53. Springtown Respondents' Estimates of the Change in Employment in Parts of Azle and Springtown Not Located on S.H. 199

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	1	2	2	4
Up 25 - 49%	0	0	1	2
Up 10 - 24%	3	5	12	26
Up 5 - 9%	0	0	12	26
Up 0 - 4%	1	2	1	2
No Change	30	49	9	20
Down < 5%	2	3	0	0
Down 5 - 9%	2	3	0	0
Down 10 - 24%	11	18	0	0
Down 25 - 49%	4	7	0	0
Down 50 - 100%	5	8	0	0
Don't Know	1	2	9	20
No Answer	1	2	0	0
Total Respondents	61	101*	46	100

* Percentages may not add to 100% due to rounding.

Table 54. Abutting Businesses', Azle, and Parker County, Texas Nominal Gross Sales for 1990 - 1992

Year	10 Responding Abutting Businesses' Gross Sales ($)[1]	All Azle Businesses' Gross Sales[2]	All Parker County Businesses' Gross Sales [2]
1987 - 1989	21,796,667	155,135,692	681,125,306
1990 - 1992	23,988,333	163,862,770	800,712,995
1994	NA	172,933,965	1,052,835,005

[1] Sum of actual gross sales figures provided by 10 abutting businesses that provided their sales for all years.

[2] Source: Comptroller of Public Accounts, Research Division.

Table 55. Abutting Businesses', Azle, and Parker County Texas Real Gross Sales for 1987 - 1994

Year	10 Responding Abutting Businesses' Gross Sales ($)[1]	All Azle Businesses' Gross Sales[2]	All Parker County Businesses' Gross Sales [2]
1987 - 1989	2,891,582	204,762,585	899,452,688
1990 - 1993	2,770,085	186,311,718	909,659,826
1994	NA	183,085,959	1,114,641,109

[1] Sum of actual gross sales figures provided by abutting businesses converted to 1996 dollars.

[2] Source: Comptroller of Public Accounts, Research Division, then converted to 1996 dollars.

Table 56. Abutting Businesses', Springtown, and Parker County, Texas Nominal Gross Sales for 1987 - 1994

Year	Five Responding Abutting Businesses' Gross Sales ($)[1]	All Springtown Businesses' Gross Sales[2]	All Parker County Businesses' Gross Sales [2]
1987 - 1991	631,800	21,670,765	704,020,776
1992 - 1994	569,167	28,594,148	926,319,675

[1] Sum of actual gross sales figures provided by five abutting businesses that provided their sales for all years of both periods.

[2] Source: Comptroller of Public Accounts, Research Division.

Table 57. Abutting Businesses', Springtown, and Parker County Texas Real Gross Sales for 1987 - 1994

Year	Five Responding Abutting Businesses' Gross Sales ($)[1]	All Springtown Businesses' Gross Sales[2]	All Parker County Businesses' Gross Sales [2]
1987 - 1991	801,121	26,421,526	861,863,918
1992 - 1994	619,666	30,207,395	976,200,254

[1] Sum of actual gross sales figures provided by abutting businesses.

[2] Source: Comptroller of Public Accounts, Research Division.

After Construction. The actual sales reported by four business managers after construction are presented in Table 58. Real sales are reported in Table 59. Nominal sales doubled, and real sales increased 45% for abutting businesses, but Springtown sales are not available for comparison.

Highway Versus County

Azle

Parker County sales increased more during construction than those of Azle or abutting Azle businesses. They increased 32% nominally (Table 54) and 1% in real terms (Table 55) during Azle construction, while Azle sales increased 6% nominally and decreased 9% in real terms, and sales of responding abutting Azle businesses increased 10% nominally and decreased 4% in real terms.

Parker County

During construction, Parker County sales increased as much as nominal Springtown sales (32%) and almost as much as real Springtown sales (13% versus 14%), but both were much more improved than sales of abutting businesses, which decreased 10% nominally and 23% in real terms. Parker County and Springtown sales are not available to compare with after-construction sales figures of abutting businesses.

SUMMARY

Business impacts were assessed using survey results supplemented with secondary data. Most business managers answered a 1993 (Azle) or 1995 (Springtown) survey on during-construction impacts and a 1996 survey on after-construction impacts. Fifty percent (Azle) to 60% (Springtown) of the businesses were less than five years old. Therefore, questions about circumstances before construction started may have been answered by referring to circumstances before the construction reached their business. Approximately half of the businesses' buildings were less than 10 years old in each city. Almost half of the businesses in each city owned their building during construction, and two-thirds owned it after construction.

For certain impacts, the managers were asked for their opinion on how the aspect changed, and later were asked to provide numbers before, during, and after construction. This situation allowed for a comparison of perceptions to actual numbers.

In Azle, 197 (33%) of the responding abutting businesses' parking spaces were lost during the construction, while in Springtown, 136 spaces (16%) were lost. Of those reporting their number of parking spaces, 97% of Azle businesses and 86% of Springtown businesses provided numbers that agreed with their opinion on the change in their number of parking spaces. After construction, 84% of Azle businesses and 89% of Springtown businesses provided numbers that agreed with their opinion on the change in their number of parking spaces.

Table 58. Abutting Businesses', Springtown, and Parker County Gross Sales for 1987 - 1991 and 1996

Year	Four Responding Abutting Businesses' Gross Sales	All Springtown Businesses' Gross Sales*	All Parker County Businesses' Gross Sales*
1987 - 1991	1,775,000	21,670,765	704,020,776
1996	3,550,000	NA	NA

* Source: Comptroller of Public Accounts, Research Division.

Table 59. Abutting Businesses', Springtown, and Parker County Real Gross Sales for 1987 - 1991 and 1996

Year	Four Responding Abutting Businesses' Gross Sales	All Springtown Businesses' Gross Sales*	All Parker County Businesses' Gross Sales*
1987 - 1991	2,451,563	27,201,689	887,312,656
1996	3,550,000	NA	NA

* Source: Comptroller of Public Accounts, Research Division.

During the busiest hour of the day at the responding businesses, 151 (36%) fewer Azle parking spaces and 191 (31%) fewer Springtown parking spaces were occupied during construction than before construction. After construction, the number further decreased by 10 (7%) in Azle and 38 (8%) in Springtown. The decrease during construction was attributed to reduced accessibility of businesses. After construction, customers may have gotten used to patronizing different businesses and didn't go back to the ones they had patronized before construction.

The decreased number of occupied parking spaces corresponded to fewer customers per day during construction for 58% of the Azle businesses and 70% of the Springtown businesses, although 28% of the Azle businesses and 26% of the Springtown businesses did not think there was a change in their number of customers per day. The reported percentage of customers from out-of-town fell from 34% to 21% in Azle and from 30% to 26% in Springtown during construction. After construction, 63% of the Azle business managers and 28% of the Springtown managers thought that there was no change in their number of customers per day, but 25% of the Azle businesses and 56% of the Springtown businesses thought the number increased. After construction, the reported percentage of out-of-town customers increased from 32% to 35% in Springtown but decreased from 38% to 37% in Azle.

It appears that most managers realized the construction was temporary and tried to retain their employees during construction. Between 74% and 89% of Azle and Springtown managers thought that their number of part-time and full-time employees did not change during or after construction. The numbers provided by the managers agreed with opinions they expressed 70% to 89% of the time.

In Azle, there were 16 managers who reported gross sales figures for the year before construction through the end of construction. Their sales increased 23% nominally and 8% in real terms during construction. There were 10 managers who reported their sales for all years between 1987 and 1993, but their sales only increased 10% nominally and decreased 4% in real terms. Azle sales increased 6% nominally and decreased 9% in real terms, so using either standard the abutting firms had better than average Azle sales levels during construction.

In Springtown, there were 18 managers who reported gross sales figures for the year before construction through the end of construction. Their sales increased 21% nominally and 8% in real terms during construction. There were five managers who reported their sales for all years between 1987 and 1994, but their sales decreased 10% nominally and 23% in real terms. Springtown and Parker County sales increased 32% nominally and 13% or 14% in real terms, so using either standard the abutting firms had sales levels less than the average Springtown and Parker County sales levels during construction.

RESIDENTIAL IMPACT

INTRODUCTION

Residents abutting S.H. 199 were identified by the Fort Worth TxDOT Right-of-Way Office and the Parker County Appraisal District. In the summer of 1994, a mail survey was conducted on the residents' opinions on various potential construction impacts. Fifty-nine surveys were mailed. A copy of the survey is included in Appendix D.

Of the 28 respondents to this survey, 21 remained in their original location. Seven had to move away from their property, and three had to move to other locations on their property, such as further back from the highway. Most residents (81%) had lived in their present location for at least five years (Table 60). Two had lived at their relocated addresses for six to 15 years, while one had lived at their relocated address for five years or less. One had lived at the relocated address for four years and then moved again.

All but one respondent owned their own residence in any location. One had leased his original residence on S.H. 199, but when he moved he owned his new residence.

RESIDENTS' AND RELOCATED RESIDENTS' OPINIONS

Residents and relocated residents were surveyed about the construction impacts. The questions were similar to some of those asked of business managers. In the following sections, the responses will be discussed with those of business managers.

Table 60. Length of Time that Responding Residents had Lived at Their Current Location Abutting S.H. 199 in Parker County

How long did you live at current address?	Number of Residents	Percentage of Residents
0 to 5 Years	3	19
6 to 15 Years	4	25
16 to 30 Years	4	25
31 to 50 Years	5	31
Total	16	100

RELOCATION IMPACT

PREDICTED RELOCATIONS IN THE ENVIRONMENTAL ASSESSMENT

Before construction, S.H. 199's existing right-of-way was usually 30 meters. In order to add an additional roadway 23 meters from the existing roadway, a minimum of 69 meters with several channel easements was needed. The environmental assessment indicated that approximately 40 residences would be displaced, but 30 would have sufficient remainder space to accommodate the displaced dwellings. Twenty-six businesses would be displaced, with 20 having remainders large enough to accommodate the displaced buildings.

RELOCATION EXPENSE

Information from the TxDOT right-of-way office indicates that well over 150 pieces of property were purchased. The Acquisition Summary lists 179 properties, including 45 business properties and 75 residences (Table 61). Right-of-way was purchased for $5.8 million, and relocation expenses totaled over $800,000. Title, court, witness, and appraisal fees added over $375,000 to the purchase costs.

RELOCATION VALUE PER ACRE

There were 193 files on settlements by the right-of-way office (Table 62). This number is larger than the previous number because the files represent negotiations with each owner and tenant associated with each property instead of all transactions associated with one property. The total value of right-of-way from this information source is $5.5 million. It is unknown why these costs differ from the Acquisition Summary of costs. The price per square foot ranged from $0.26 to $2.10, while the price per acre ranges from $2,000 to $55,000. The value of a few properties was determined by different formulas than by multiplying a specific value per area times the area.

RELOCATION SURVEY

Only one, two, or three businesses answered any given question on the relocated business survey (found in Appendix B), so their responses are not discussed in this report. Relocated residents' opinions are presented in the following sections with the business managers' opinions. Their comments are included here. One resident's rental property was lost due to the widening. He was not satisfied with the settlement, but he settled anyway. One couple purchased more land than they had on S.H. 199, but it was not in as good a location. They bought a house, had it moved from Fort Worth, and remodeled it themselves. Another had to move away from her mother and widowed sister because S.H. 199 houses nearby were too expensive to buy.

Table 61. Right-of-Way Acquisition Summary Costs

Tenant Type	Number of Properties	Right-of-Way Cost ($)	Relocation Costs ($)	OBJ 400 Costs[1] ($)	OBJ 432 Costs[2] ($)	Total Costs ($)
Business Tenants	7	171,416	23,661	2,424	7,800	205,301
Business Owners	38	2,079,592	201,360	24,237	93,050	2,398,239
Resident Tenants	19	688,650	120,729	8,419	31,275	849,073
Resident Owners	56	1,793,882	459,083	24,034	82,013	2,359,012
Vacant	55	1,088,411	11,416	20,224	78,928	1,198,979
Miscellaneous[3]	4	16,538	40	584	3,750	20,912
Total	179	5,838,489	816,289	79,922	296,816	7,031,516

1 OBJ 400 costs include title, court, incidental, and other costs
2 OBJ 432 costs include witness and appraisal fees
3 Miscellaneous tenants include joint use, "ECCL", and unclassified properties.

Table 62. Summary of Amounts Paid to Tenants and Owners Associated with Properties From Which Right-of-Way was Taken

City	Number of Properties	Acres	Land Cost ($)	Improvement Cost ($)	Net Damages (Enhancements)	Total
Azle	120	61	1,304,057	1,286,111	-25,006	2,807,007
Springtown	73	58	1,274,706	1,169,913	170,661	2,680,022
Total	193	119	2,578,763	2,456,024	145,655	5,487,029

Original Location

Azle

Forty-eight percent of the businesses were started before construction at the interview location, while 41% began business at the interview location during construction (Table 63). Only three businesses had previously been located somewhere else.

Springtown

Fifty-six percent of the businesses were started before 1992 at the interview location, while 39% began business at the interview location during construction began (Table 64). Twelve businesses (20%) had previously been located somewhere else.

Reason for Moving

Azle

Seven businesses moved because the state took right-of-way (Table 65). The front of the property was the original location for four businesses, and three businesses started at other locations (Table 66).

Springtown

Eleven businesses moved because the state took right-of-way (Table 67). The front of the property was the original location for nine businesses, and five businesses started at other locations (Table 68).

SUMMARY

There were 179 properties with 193 owners and tenants who were affected directly by TxDOT right-of-way purchases. Right-of-way costs were at least $5.5 million.

Approximately half of the businesses started before construction, and one-third started during construction. Seven Azle businesses and nine Springtown businesses whose managers responded to the business survey moved due to the construction.

Table 63. Distribution of Azle Respondents by the Age of Their Business at the Location Where the Interview Occurred

When Business Began on S.H. 199	Number of Businesses	Percent of Businesses
Before 1980	3	7
1980 - 1989	19	41
1990 - 1993	19	41
No Answer	5	11
Total	46	100

Table 64. Distribution of Springtown Respondents by the Age of Their Business at the Interview Location

When Business Began on S.H. 199	Number of Businesses	Percent of Businesses
Before 1980	7	11
1980 - 1992	27	44
1993 - 1994	24	39
No Answer	3	5
Total	61	99*

* Percentages may not add to 100% due to rounding.

Table 65. Distribution of Azle Businesses by Relocation Status

Business Moved Due to Construction?	Number of Businesses	Percent of Businesses
Yes	7	15
No	37	80
No Answer	2	4
Total	46	99*

* Percentages may not add to 100% due to rounding.

Table 66. Distribution of Azle Respondents by the Original Location of Their Business

Original Location	Number of Businesses	Percent of Businesses
Front of Property	4	9
Other Location	3	7
Not Applicable	39	85
Total	46	101*

* Percentages may not add to 100% due to rounding.

Table 67. Number of Businesses That Had to Move Due to Construction in Springtown

Business Moved Due to Construction?	Number of Businesses	Percent of Businesses
Yes	11	18
No	48	79
No Answer	2	3
Total	61	100

Table 68. Distribution of Springtown Businesses by Their Original Location

Original Location	Number of Businesses	Percent of Businesses
Front of Property	9	15
Other Location	5	8
Not Applicable	47	77
Total	61	100

PROPERTY VALUE

It is important to look at changes in property values abutting construction sites in light of changes in nonabutting property values in the vicinity of the construction. If the construction site property value trends differ from the trends in the region, the construction may have affected the property value. Therefore, Parker County and Springtown property value trends will be investigated to determine if abutting property value changes were similar. None of the properties were actually in Azle, although some were close to the Azle city limit. Therefore, Azle property values were not investigated.

Business managers were asked their opinions about the construction impact on their business property, S.H. 199 property, and Azle and Springtown property values. Relocated and non-relocated residents were also asked their opinions about the construction impact on their property values. The opinions were compared with actual property values obtained from the Parker County Appraisal District. Property values were deflated to 1996 values using the Consumer Price Index (CPI).

PARKER COUNTY PROPERTY VALUE

As seen in Figure 7, real Parker County property values have been declining since 1986. Property values are revised every three years. The years under consideration here are 1986, 1989, 1992, and 1995.

Commercial Property Value

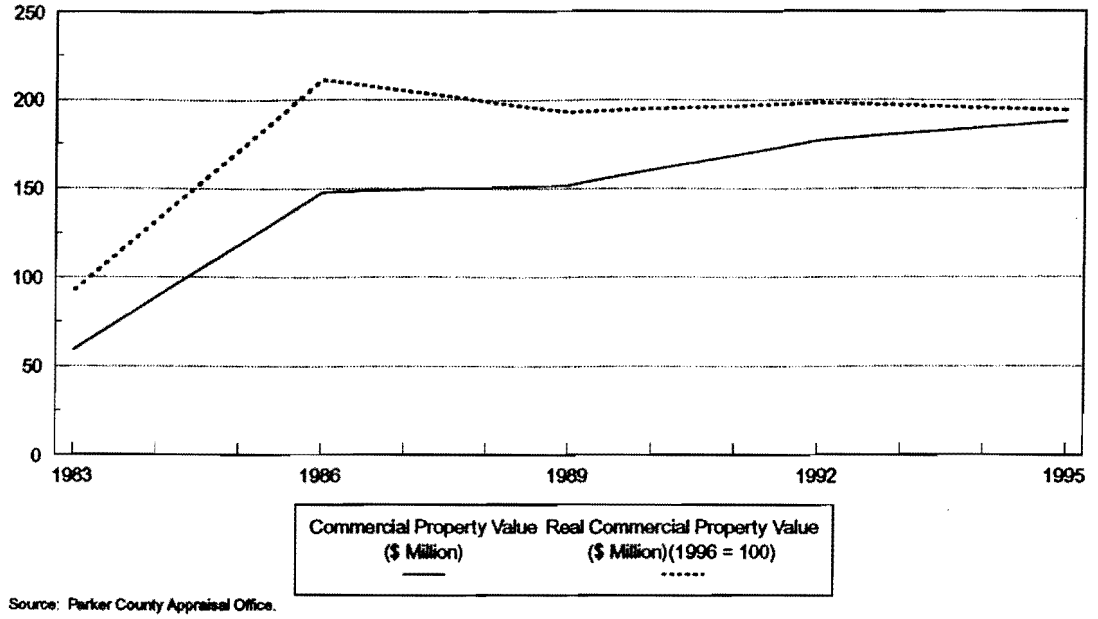
Real commercial and industrial property values are found in Figure 11. They decreased 9% between 1986 and 1989, but actually increased 3% during the S.H. 199 construction. They decreased 2% in 1995, after construction was completed. They have comprised an average of 7% of Parker County property values between 1986 and 1995. Real values are higher now than before construction.

Farm and Ranch Land Value

Real farm and ranch land values make up 35% of Parker County property values and are found in Figure 12. These values have fallen between 3% and 10% each year that property values have been evaluated since 1986.

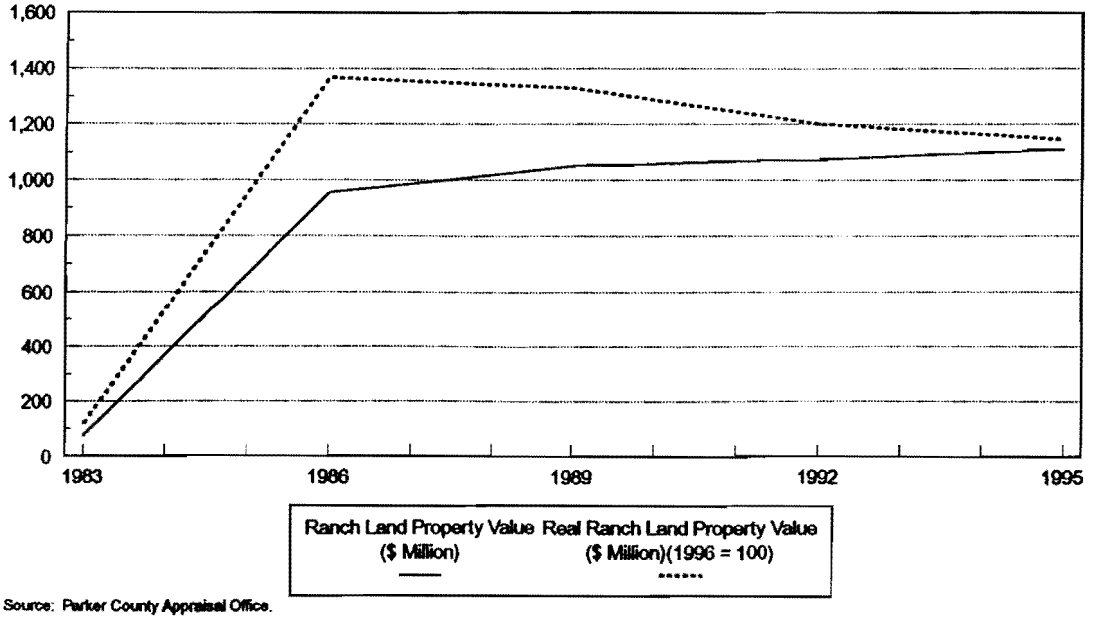
Residential Property Value

Real residential property values are shown in Figure 13. Property values increased 2% between 1986 and 1989. They decreased 4% between 1989 and 1992, and increased 1% between 1992 and 1995. They averaged 38% of Parker County appraisal values over the years under study.



Source: Parker County Appraisal Office.

Figure 11. Total Appraisal Market Value for Commercial Property in Parker County from 1983 to 1995



Source: Parker County Appraisal Office.

Figure 12. Total Appraisal Market Value for Ranch Land in Parker County for 1983 to 1995

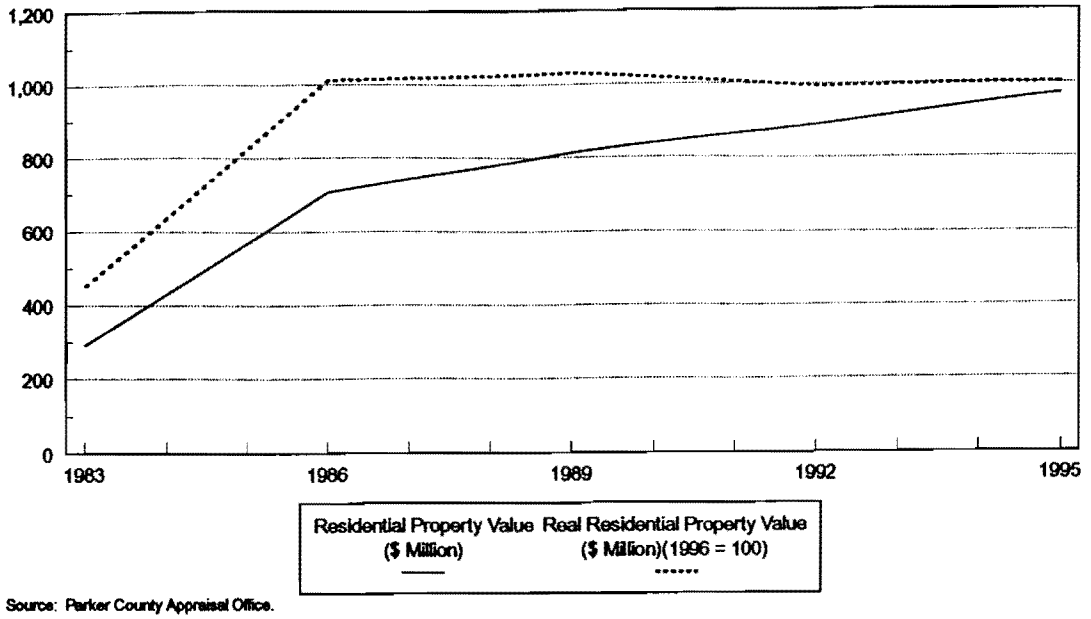


Figure 13. Total Market Appraisal Value for Residential Property in Parker County for 1983 to 1995

Vacant Property Value

Real vacant property values are shown in Figure 14. The values have declined each evaluation year, with the percentage falling each year, from 28% between 1986 and 1989, to 9% between 1992 and 1995. These values have averaged 4% of Parker County properties.

Miscellaneous Property Value

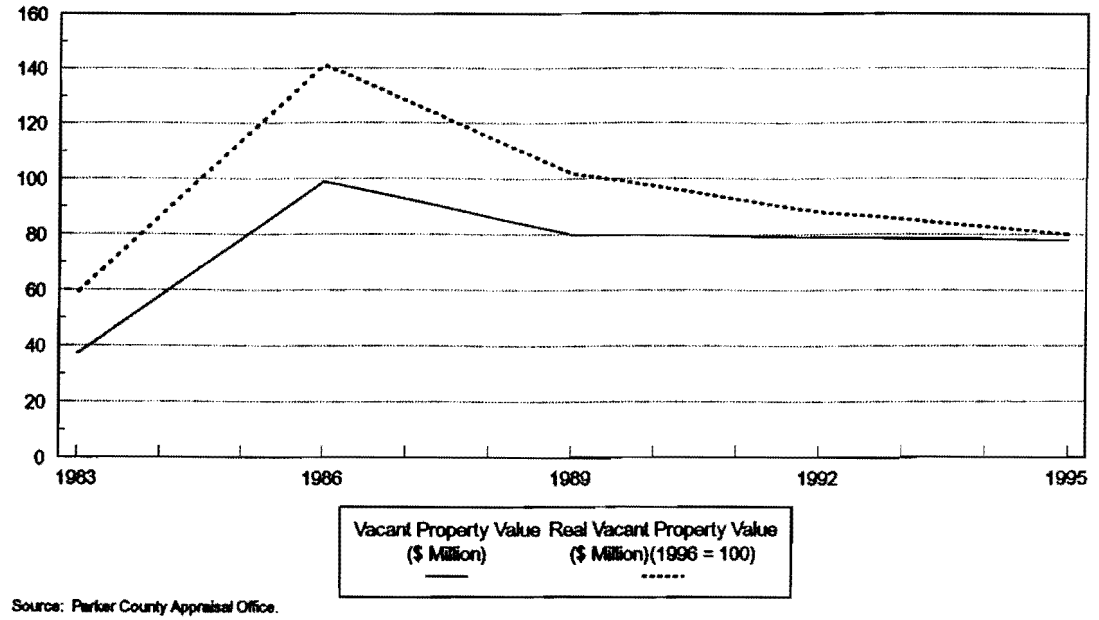
Real miscellaneous property values comprise an average of 17% of Parker County property values and are shown in Figure 15. Their trend is similar to that of vacant properties, decreasing 47% between 1986 and 1989, and decreasing 6% between 1992 and 1995.

ALL AZLE AND SPRINGTOWN PROPERTY VALUE

Business Managers' Opinions

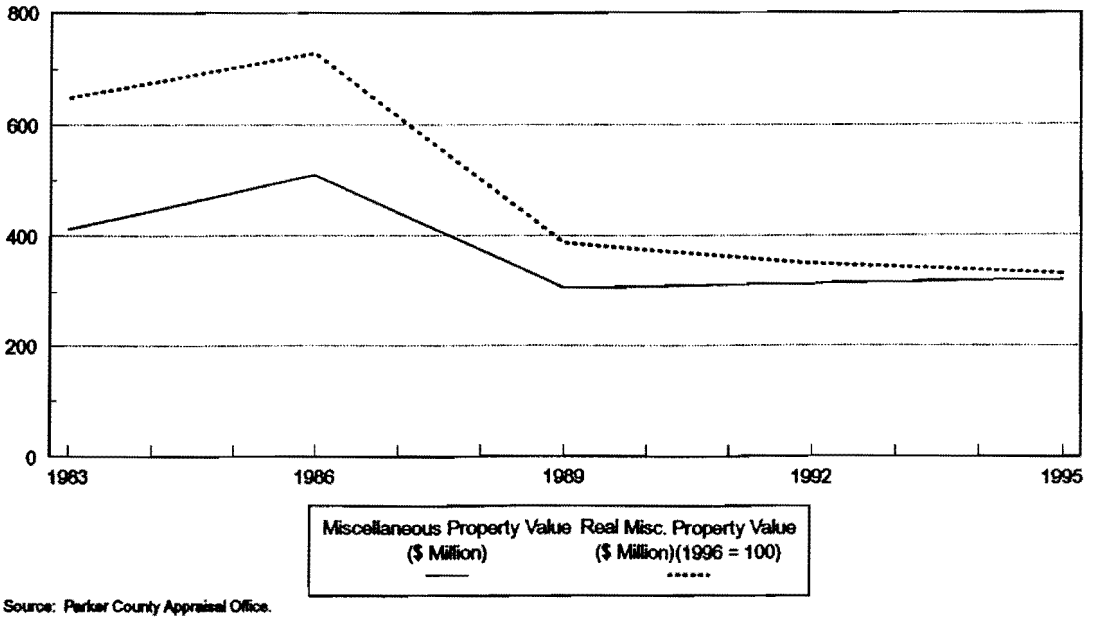
During Construction

There is no consensus on the impact during construction on all property values in Azle and Springtown by Azle business managers (Table 69) or Springtown managers (Table 70). Slightly over half of Springtown respondents and slightly under half of Azle



Source: Parker County Appraisal Office.

Figure 14. Total Market Appraisal Value for Vacant Property in Parker County for 1983 to 1995



Source: Parker County Appraisal Office.

Figure 15. Total Market Appraisal Value for Miscellaneous Property in Parker County for 1983 to 1995

Table 69. Respondents' Estimates of the Change in Property Values for All Properties in Adjacent Cities on S.H. 199 Between F.M. 2257 and Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	0	0	1	4
Up 10 - 24%	2	4	4	17
Up 5 - 9%	2	4	5	21
Up 0 - 4%	1	2	1	4
No Change	22	48	8	33
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	4	9	0	0
Down 25 - 49%	3	7	0	0
Down 50 - 100%	1	2	0	0
Don't Know	10	22	5	21
No Answer	0	0	0	0
Total Respondents	46	100	24	100

Table 70. Respondents' Estimates of the Change in Property Values for All Properties in Adjacent Cities on S.H. 199 in Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	2	4
Up 25 - 49%	0	0	4	9
Up 10 - 24%	3	5	9	20
Up 5 - 9%	2	3	8	17
Up 0 - 4%	2	3	3	7
No Change	39	64	6	13
Down < 5%	1	2	0	0
Down 5 - 9%	1	2	0	0
Down 10 - 24%	4	7	0	0
Down 25 - 49%	5	8	0	0
Down 50 - 100%	4	7	0	0
Don't Know	0	0	14	30
No Answer	0	0	0	0
Total Respondents	61	101*	46	100

* Percentages may not add to 100% due to rounding.

respondents did not think that area property values had changed. Of the remaining businesses for both cities, twice as many thought property values had decreased than thought they had increased.

After Construction

After construction, slightly over half of Springtown respondents and slightly under half of Azle respondents thought that area property values had increased. Thirty-three percent of Azle respondents and 13% of the Springtown respondents thought that they did not change. The rest did not know how the property values had changed.

Springtown Property Value

As shown in Figure 8, nominal Springtown property values rose 2% to 3% between appraisals during and after construction. The nominal values changed so slightly that it is understandable that managers did not think they had changed. Real values decreased 6% to 9% during the same time period.

The distribution of Springtown property values among property types is similar to that of Parker County property values. Springtown property values constituted an average of 12% of Parker County property values between 1986 and 1995.

Commercial Property Value

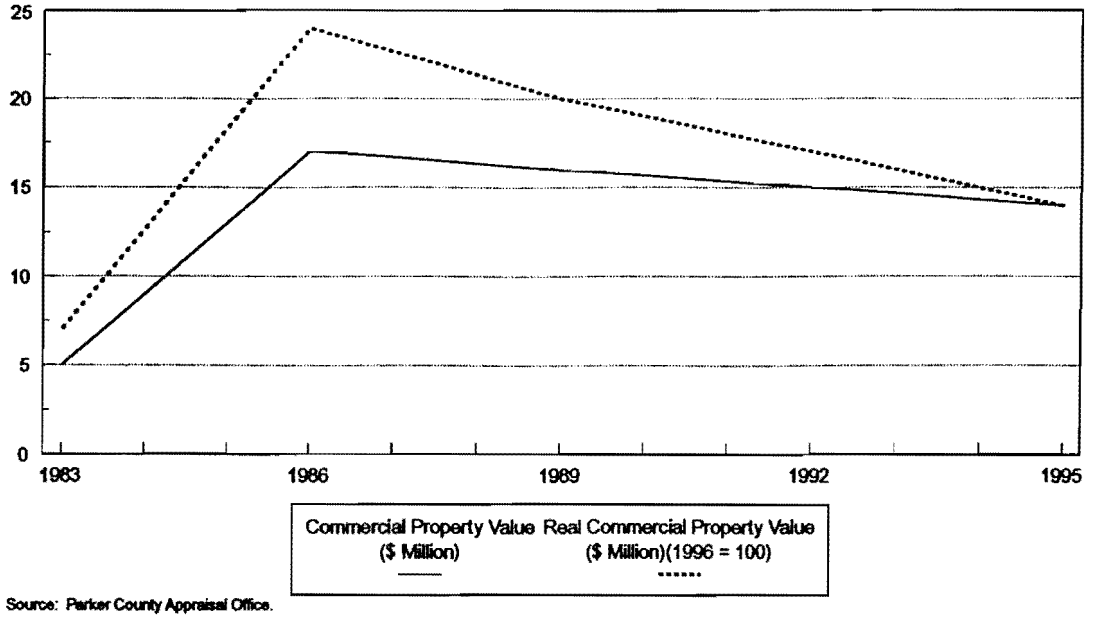
Real commercial and industrial property values are found in Figure 16. Their values decreased by a larger percentage between each property evaluation year, from 14% between 1986 and 1989 to 18% between 1992 and 1995. They comprised an average of 6% of Springtown property values between 1986 and 1989.

Farm and Ranch Land Value

Real farm and ranch land values made up an average of 28% of Springtown property values and are found in Figure 17. They decreased 55% between 1986 and 1989, and 13% between 1989 and 1992. They increased 2% after construction, between 1992 and 1995.

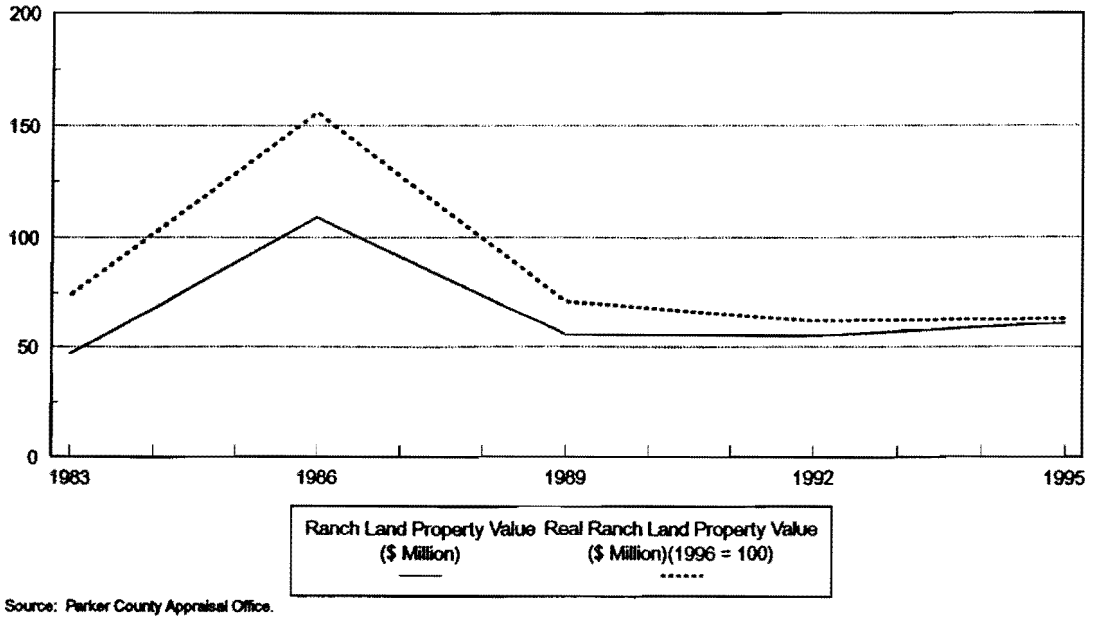
Residential Property Value

Real residential property values are shown in Figure 18. They decreased from less than 0.5% to 6.5% between property re-evaluation years from 1986 to 1995. They comprised an average of 41% of Springtown property values.



Source: Parker County Appraisal Office.

Figure 16. Total Appraisal Market Value for Commercial Property in Springtown for 1983 to 1995



Source: Parker County Appraisal Office.

Figure 17. Total Appraisal Market Value for Ranch Land in Springtown for 1983 to 1995

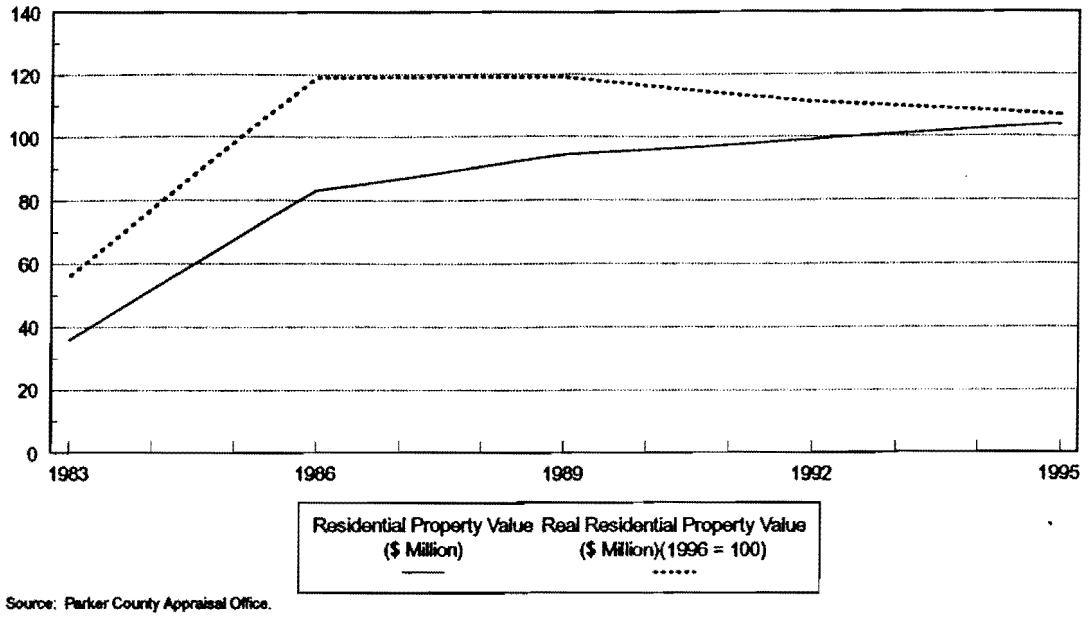


Figure 18. Total Market Appraisal Value for Residential Property in Springtown for 1983 to 1995

Vacant Property Value

Real vacant property values made up an average of 5% of Springtown property values and are shown in Figure 19. They decreased between 11% and 24% each evaluation year between 1986 and 1995.

Miscellaneous Property Value

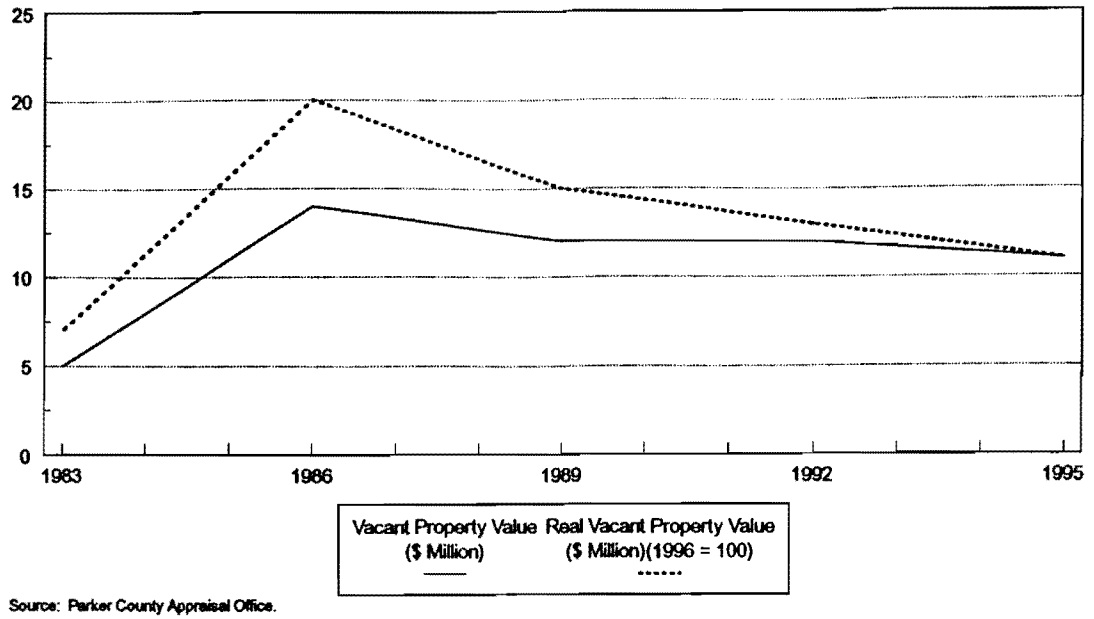
Miscellaneous property values are shown in Figure 20. These values also decreased between each evaluation year, from 64% to 6%. They comprised an average of 20% of Springtown property values.

ALL PROPERTIES ABUTTING CONSTRUCTION

Business Managers' Opinions

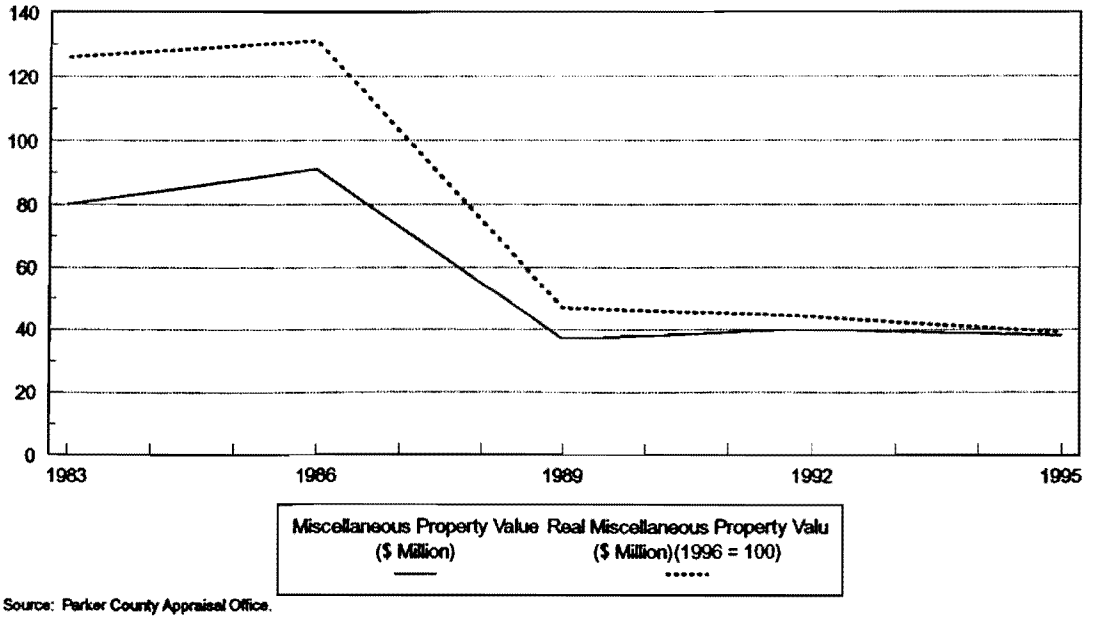
During Construction

There was no consensus about whether the property value of all S.H. 199 properties changed during construction (Table 71). Nineteen percent of Azle managers estimated that it had increased, 26% that it had not changed, and 33% that it had decreased. However, slightly over half of the Springtown managers thought there was no



Source: Parker County Appraisal Office.

Figure 19. Total Market Appraisal Value for Vacant Property in Springtown for 1983 to 1995



Source: Parker County Appraisal Office.

Figure 20. Total Market Appraisal Value for Miscellaneous Property in Springtown for 1983 to 1995

Table 71. Respondents' Estimates of the Change in Property Values on S.H. 199 During Construction on S.H. 199 Between F.M. 2257 and Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	1	2	1	4
Up 10 - 24%	5	11	4	17
Up 5 - 9%	2	4	5	21
Up 0 - 4%	1	2	1	4
No Change	12	26	8	33
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	6	13	0	0
Down 25 - 49%	4	9	0	0
Down 50 - 100%	5	11	0	0
Don't Know	10	22	5	21
No Answer	0	0	0	0
Total Respondents	46	100	24	100

change in S.H. 199 property values (Table 72). One-tenth thought it increased, and one-third thought it decreased.

After Construction

Forty-six percent of Azle respondents and 62% of Springtown respondents thought that abutting property values increased after construction. Thirty-three percent of Azle respondents and 9% of the Azle respondents thought that the property values did not change after construction.

Appraised Property Value

The total nominal appraisal market value for all properties abutting construction on S.H. 199 in 1986 was $13.3 million, while the real value was $19.0 million (Table 73). Nominally, it increased during construction, which few managers suspected. In real terms, it did decrease. After construction, property values decreased both nominally and in real terms, while most respondents thought it increased.

Appraised Land Values

It is important to look at land values since property values may decrease due to aging of improvements. Also, the value per acre is a more accurate gauge of the change in land values. The land value per acre for all 196 abutting properties with reported acreage is presented in Table 74. Nominal values ranged from $4800 to $5400 per acre during property re-evaluation years. Real values per acre decreased by a greater percentage with each successive re-evaluation period.

AZLE PROPERTIES ABUTTING CONSTRUCTION

Appraised Property Value

In 1986, the real total appraised market value of properties abutting construction on the Azle end of the project was $10.1 million for 132 properties (Table 75). By 1989, the real value had increased 4%. In 1992, the real total value dropped 17%, while in 1995 it dropped 12%.

Appraised Land Value

The value per acre is a better way to compare the change in property values. There were 106 Azle properties with reported acreage for each year under consideration. The land value and land value per acre are presented in Table 76. The real average land value per acre has decreased each appraisal period. The decrease was twice as large between 1989 and 1992 as it was between 1992 and 1995. Although acreage figures are not available for Azle, Springtown, and Parker County, most property values for these

Table 72. Respondents' Estimates of the Change in Property Values on S.H. 199 During Construction in Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	3	7
Up 25 - 49%	0	0	4	9
Up 10 - 24%	2	3	10	22
Up 5 - 9%	3	5	8	17
Up 0 - 4%	2	3	3	7
No Change	34	56	4	9
Down < 5%	1	2	0	0
Down 5 - 9%	1	2	0	0
Down 10 - 24%	8	13	0	0
Down 25 - 49%	5	8	0	0
Down 50 - 100%	4	7	0	0
Don't Know	1	2	14	30
No Answer	0	0	0	0
Total Respondents	61	101*	46	101*

* Percentages may not add to 100% due to rounding.

Table 73. Property Values for All Parker County Properties Abutting Construction on S.H. 199 for Various Years

Year	Number of Proper-ties	Total Land Value ($)	Total Appraisal Market Value ($)	Real Appraisal Value ($) (1996 = 100)	Percent Change in Real Apprai -sal Value
1986	248	5,986,688	13,284,320	19,017,425	NA
1989	256	5,944,877	14,239,095	18,017,048	-5.26
1992	**262**	**6,157,360**	**15,029,050**	**16,807,255**	**-6.71**
1995	262	5,786,768	14,396,218	14,821,303	-11.82

Source: Parker County Appraisal Office.

Table 74. Land Value per Acre for All 196 Properties Abutting Construction that had Reported Acreage, for Various Years

Year	Acres	Land Value ($)	Land Value per Acre ($)	Real Land Value per Acre ($) (1996 = 100)	Percent Change in Real Land Value per Acre
1986	1141.00	5,473,718	4,797	6,867	NA
1989	944.17	5,002,319	5,298	6,704	-2.37
1992	**904.92**	**4,878,360**	**5,391**	**6,029**	**-10.07**
1995	902.63	4,704,128	5,212	5,366	-11.00

Source: Parker County Appraisal Office.

Table 75. Values of Property Abutting Construction on S.H. 199 in Azle for Various Years

Year	Number of Properties	Total Land Value ($)	Total Appraisal Market Value ($)	Real Appraisal Value ($) (1996 = 100)	Percent Change in Real Appraisal Values
1986	132	3,121,650	7,059,764	10,106,542	NA
1989	138	3,265,778	8,297,498	10,499,012	3.88
1992	**138**	**3,106,820**	**7,778,420**	**8,698,746**	**-17.15**
1995	138	2,957,858	7,447,728	7,667,641	-11.85

Table 76. Azle Land Values per Acre for 106 Abutting Properties for Various Years

Year	Acres	Land Value ($)	Land Value per Acre ($)	Real Land Value per Acre ($) (1996 = 100)	Percent Change in Real Land Value per Acre
1986	776.11	2,844,150	3,664.62	5,246	NA
1989	619.20	2,556,690	4,129.03	5,225	-0.41
1992	**607.55**	**2,397,730**	**3,946.56**	**4,414**	**-15.52**
1995	605.39	2,395,858	3,957.33	4,074	-7.69

areas show declining trends. Therefore, the construction, which occurred between 1990 and 1993, is not the sole reason for this decline.

SPRINGTOWN PROPERTIES ABUTTING CONSTRUCTION

Appraised Property Value

On the Springtown end of the project, 116 abutting properties had a real total appraised value of $8.9 million in 1986 (Table 77). In 1989, the real total value decreased 15.6%. In 1992, the real total value increased 7.9%. The real total value decreased 11.8% in 1995.

Appraised Land Value

The value per acre is a better way to compare the change in property values. There were 90 Azle properties with reported acreage for each year under consideration. The land value and land value per acre are presented in Table 78. The real land value per acre has decreased each appraisal period. The decrease was smallest between 1989 and 1992 and largest between 1992 and 1995, during construction. Although acreage figures are not available for Azle, Springtown, and Parker County, most property values for these areas show declining trends. Therefore, the construction is not the sole reason for this decline.

INDIVIDUAL S.H. 199 PROPERTY VALUES

Residents' Opinions

Non-Relocated Residents' Opinions

There was no consensus on the impact of construction on the residents' property value. Twenty-nine percent of the respondents thought that their property value increased up to 25% due to the construction (Table 79). Twenty-one percent of the respondents did not think that their property value changed due to the construction, 25% thought that it decreased, and 25% did not answer.

One resident thought that his property value fell 50%. His property fronted the highway, which is now four meters higher than his property and is now noisier and has increased water runoff. Another resident thought that the grade level of the road should have been discussed with the owners prior to the construction.

Relocated Residents' Opinions

Two of the four respondents thought that their property value decreased 50% to 100% due to the construction, while the other two respondents did not think their property value changed (Table 79).

Table 77. Value of Property Abutting S.H. 199 in Springtown for Various Years

Year	Number of Properties	Total Land Value ($)	Total Appraisal Market Value ($)	Total Real Appraisal Value ($) (1996 = 100)	Percent Change in Total Real Appraisal Value
1986	116	2,865,038	6,224,556	8,910,884	NA
1989	118	2,679,099	5,941,597	7,518,037	-15.63
1992	**124**	**3,050,540**	**7,250,630**	**8,108,509**	**7.85**
1995	124	2,828,910	6,948,490	7,153,662	-11.78

Table 78. Springtown Land Values per Acre for 90 Properties for Various Years

Year	Acres	Land Value ($)	Land Value per Acre ($)	Real Land Value per Acre ($) (1996 = 100)	Percent Change in Real Land Value per Acre
1986	364.92	2,629,568	7,205.80	10,316	NA
1989	324.97	2,445,629	7,525.64	9,522	-7.69
1992	**297.37**	**2,480,630**	**8,341.81**	**9,329**	**-2.03**
1995	297.24	2,308,270	7,765.76	7,995	-14.30

Table 79. Distribution of Abutting Residents' Opinions of the Impact of S.H. 199 Construction on Their Property Value

Change in Property Values	Abutting Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	0	0	0	0
Up 25% - 50%	0	0	0	0
Up 10% - 25%	1	4	0	0
Up 5% - 10%	4	17	0	0
Up 0% - 5%	2	8	0	0
No Change	5	21	2	50
Down 0% - 5%	1	4	0	0
Down 5% - 10%	0	0	0	0
Down 10% - 25%	1	4	0	0
Down 25% - 50%	3	13	0	0
Down 50% - 100%	1	4	2	50
Don't Know	0	0	0	0
No Answer	6	25	0	0
Total	24	100	4	100

Azle Property Value

Business Managers' Opinions

During Construction. Business managers were asked if their property value changed during the construction. Almost half of the respondents indicated that it did not change (Table 80). One-fifth said that it went down, and almost one-fifth did not know how it changed. Nine percent thought it went up. One business manager indicated that property value was a roller coaster -- down at first, then up, and finally up after the construction was finished. Another said that the property could not have been sold with a gun to someone's head. Still another business manager said that the property value peaked five years ago and has declined since then.

After Construction. Fifty-three percent of the responding managers thought that their property value did not change after construction, while 40% thought that it increased. Seven percent thought it decreased less than 5%.

Change in Property Values

During Construction. The direction of change in each property value abutting construction in Azle is presented in Table 81. Between 1989 and 1992, when most of the construction occurred, 81% of the land values and 55% of the property values did not change for abutting properties. Of the remaining values, more decreased than increased. This distribution is similar to the managers' opinions.

After Construction. After construction, 96% of the land values and 93% of the property values did not change. Therefore, many managers were overly optimistic about the construction impact on their property value.

Springtown Property Value

Business Managers' Opinions

Business managers were asked if their property value changed during the construction. Over half of the respondents indicated that it did not change (Table 82). Thirty-six percent said that it went down. After construction, 46% said that they did not know how their property value changed. Thirty-three percent said that it increased, and 15% said that it did not change.

Change in Property Values

The actual direction of change in each property value between 1986 and 1995 for abutting Springtown properties is presented in Table 83. Between 1989 and 1992, 60% of the land values and 40% of the property values did not change for abutting properties. Of the remaining values, almost as many increased as decreased. Between 1992 and

Table 80. Responding Business Managers' Estimates of the Impact on Their Property Value Due to Construction on S.H. 199 Between F.M. 2257 and Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	0	0
Up 25 - 49%	0	0	0	0
Up 10 - 24%	4	9	4	17
Up 5 - 9%	0	0	2	8
Up 0 - 4%	0	0	0	0
No Change	22	48	8	33
Down < 5%	1	2	1	4
Down 5 - 9%	0	0	0	0
Down 10 - 24%	1	2	0	0
Down 25 - 49%	3	7	0	0
Down 50 - 100%	4	9	0	0
Don't Know	8	17	0	0
No Answer	3	7	9	38
Total Respondents	46	101*	24	100

* Percentages may not add to 100% due to rounding.

Table 81. Actual Direction of Change for Highway Property Value Between 1986 and 1995, Azle, Texas

Time Period	Change in Property Value	Number of Properties (Land Value)	Percent of Properties (Land Value)	Number of Properties (Total Value)	Percent of Properties (Total Value)
1986-1989	Increase[1]	10	7	25	18
	No Change[1]	100	72	27	19
	Decrease	29	21	87	63
1989-1992	Increase	10	7	19	14
	No Change[2]	112	81	76	55
	Decrease	17	12	44	32
1992-1995	Increase[3]	2	1	6	4
	No Change	134	96	129	93
	Decrease[3]	3	2	4	3

1 Six property values increased because the property did not exist in 1986. One did not change because the property did not exist in 1986 and 1989.

2 One property value did not change because the property did not exist in 1989 and 1992.

3 One property value increased because the property did not exist in 1992 and one property value decreased because the property did not exist in 1995.

Table 82. Responding Business Managers' Estimates of the Impact on Their Property Value on S.H. 199 Between F.M. 2257 and Springtown

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	0	0	2	4
Up 25 - 49%	0	0	4	9
Up 10 - 24%	2	3	5	11
Up 5 - 9%	0	0	3	7
Up 0 - 4%	0	0	1	2
No Change	35	57	7	15
Down < 5%	1	2	0	0
Down 5 - 9%	3	5	1	2
Down 10 - 24%	8	13	1	2
Down 25 - 49%	5	8	0	0
Down 50 - 100%	5	8	0	0
Don't Know	2	3	21	46
No Answer	0	0	1	2
Total Respondents	61	99*	46	100

* Percentages may not add to 100% due to rounding.

1995, 86% of the land values and 77% of the property values did not change. Again, of the remaining values, more decreased than increased.

COMPARISON OF PROPERTY VALUES BY TYPE OF PROPERTY

The total before, during, and after construction property values for each type of property for Parker County, Springtown, and abutting property are presented in this section. Note also that these are property values, not land values, and the age of the improvements could greatly impact the property values.

Commercial

During Construction

Real commercial property values are presented in Table 84. Commercial property values in Springtown decreased 16% during construction. Highway property values only decreased 5%, while nonabutting property values decreased 17%. Parker County commercial property values increased 3%, but increased 5% if Springtown properties are excluded.

After Construction

After construction, Springtown property values were still 31% below 1989 levels, but abutting property values dropped 21%. Nonabutting property values dropped 32% overall. Parker County commercial property values increased 1% after construction, but increased 5% if Springtown property values are excluded.

Ranch

During Construction

Ranch property values are presented in Table 85. During construction, Springtown and nonabutting Springtown ranch property values decreased 13%. Highway property values only decreased 6%, and Parker County property values decreased 10%.

After Construction

After construction, Springtown, abutting, and Parker County ranch property values decreased approximately 10% to 14% from their 1989 values.

Table 83. Actual Direction of Change for Highway Property Between 1986 and 1995, Springtown, Texas

Time Period	Change in Property Value	Number of Properties (Land Value)	Percent of Properties (Land Value)	Number of Properties (Total Value)	Percent of Properties (Total Value)
1986-1989[1]	Increase	9	7	30	24
	No Change	96	77	30	24
	Decrease	19	15	64	52
1989-1992	Increase[2]	22	18	31	25
	No Change	75	60	50	40
	Decrease	27	22	43	35
1992-1995	Increase	4	3	8	6
	No Change	107	86	95	77
	Decrease	13	10	21	17

[1] Three property values increased because they did not exist in 1986. Five did not change because they did not exist in 1986 and 1989. One decreased because it did not exist in 1989.

[2] Six property values increased because they did not exist in 1989.

Table 84. Commercial Property Values for Parker County, Springtown, and Abutting Property Before and After Construction

During Construction					
Location	Sum or Average	1989 Real Property Value ($)	1992 Real Property Value ($)	Actual Difference	Percent Difference
Highway Property	Sum	2,378,995	2,249,228	-129,767	-5
	Average	50,617	44,102	-6,515	-13
Springtown (all)	Sum	20,461,723	17,204,662	-3,257,061	-16
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	18,082,728	14,955,434	-3,127,294	-17
	Average	NA	NA	NA	NA
Parker (all)	Sum	192,525,633	198,405,630	5,879,997	3
	Average	NA	13,227,042	13,227,042	NA
Parker (other than Springtown)	Sum	172,063,911	181,200,968	9,137,057	5
	Average	NA	NA	0	NA
After Construction					
Location	Sum or Average	1989 Real Property Value ($)	1995 Real Property Value ($)	Actual Difference ($)	Percent Difference (%)
Highway Property	Sum	2,378,995	1,886,856	-492,139	-21
	Average	50,617	36,997	-13,620	-27
Springtown (all)	Sum	20,461,723	14,094,315	-6,367,408	-31
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	18,082,728	12,207,458	-5,875,270	-32
	Average	NA	NA	NA	NA
Parker (all)	Sum	192,525,633	193,940,249	1,414,616	1
	Average	NA	6,060,633	6,060,633	NA
Parker (other than Springtown)	Sum	172,063,911	179,845,934	7,782,023	5
	Average	NA	NA	NA	NA

Source: Parker County Appraisal District.

Table 85. Ranch Property Values for Parker County, Springtown, and Abutting Properties Before, During, and After Construction

During Construction					
Location	Sum or Average	1989 Real Property Value ($)	1992 Real Property Value ($)	Actual Difference ($)	Percent Difference
Highway Property	Sum	2,750,419	2,593,413	-157,006	-6
	Average	59,792	55,179	-4,613	-8
Springtown (all)	Sum	70,699,463	61,802,615	-8,896,848	-13
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	67,949,044	59,209,202	-8,739,842	-13
	Average	NA	NA	NA	NA
Parker (all)	Sum	1,330,071,100	1,201,014,169	-129,056,931	-10
	Average	NA	8,340,376	8,340,376	NA
Parker (other than Springtown)	Sum	1,259,371,637	1,139,211,554	-120,160,083	-10
	Average	NA	NA	NA	NA
After Construction					
Location	Sum or Average	1989 Real Property Value ($)	1995 Real Property Value ($)	Actual Difference ($)	Percent Difference (%)
Highway Property	Sum	2,750,419	2,422,590	-327,829	-12
	Average	59,792	50,471	-9,321	-16
Springtown (all)	Sum	70,699,463	63,264,405	-7,435,058	-11
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	67,949,044	60,841,815	-7,107,229	-10
	Average	NA	NA	NA	NA
Parker (all)	Sum	1,330,071,100	1,144,909,544	-185,161,556	-14
	Average	NA	12,864,152	NA	NA
Parker (other than Springtown)	Sum	1,259,371,637	1,081,645,139	-177,726,498	-14
	Average	NA	NA	NA	NA

Source: Parker County Appraisal District.

Residential

During Construction

Residential property values are presented in Table 86. During construction, Springtown and Parker County property values fell between 4% and 6%, while abutting property values fell 15%.

After Construction

After construction, Springtown property values fell 10% from their 1989 values, while abutting property values fell 22%. Parker County property values decreased 3% overall and 2% if Springtown is excluded.

Vacant

During Construction

Vacant property values are presented in Table 87. Springtown, abutting, and Parker County property values fell between 10% and 15%.

After Construction

After construction, Parker County property decreased 21%, or 20% if Springtown is excluded. Springtown values decreased 27%, while abutting properties decreased 28%.

SUMMARY

Approximately half of the business managers did not think that their property value changed during construction. Abutting non-relocated residents' opinions were almost evenly divided between increase, decrease, no change, and no opinion on the change in their property value. There was no real consensus among Azle business managers as to how S.H. 199 property values were affected, but over half of the Springtown managers thought it did not change, and one-third thought its value decreased. Similarly, there was no consensus in the change in Azle and Springtown property values. Generally, half of the managers thought it did not change and, of the rest of the managers, more thought it decreased than increased.

After construction, approximately half of the managers thought Azle and Springtown, as well as all abutting property values increased. Many of the remaining managers did not know how it changed or thought it did not change. Half of Azle business managers thought that their property values did not change, and 40% thought they increased. Half of the Springtown managers did not know how their property value changed, while one-third thought they increased.

Table 86. Residential Property Values for Parker County, Springtown, and Abutting Property Before and After Construction

During Construction					
Location	Sum or Average	1989 Real Property Value ($)	1992 Real Property Value ($)	Actual Difference ($)	Percent Difference
Highway Property	Sum	1,344,253	1,147,987	-196,266	-15
	Average	13,858	11,835	-2,023	-15
Springtown (all)	Sum	118,790,143	111,084,247	-7,705,896	-6
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	117,445,889	109,936,260	-7,509,629	-6
	Average	NA	NA	NA	NA
Parker (all)	Sum	1,029,077,488	991,680,294	-37,397,194	-4
	Average	NA	4,958,402	4,958,402	NA
Parker (other than Springtown)	Sum	910,287,345	880,596,046	-29,691,299	-3
	Average	NA	NA	NA	NA
After Construction					
Location	Sum or Average	1989 Real Property Value ($)	1995 Real Property Value ($)	Actual Difference ($)	Percent Difference (%)
Highway Property	Sum	1,344,253	1,052,980	-291,273	-22
	Average	13,858	10,855	-3,003	-22
Springtown (all)	Sum	118,790,143	106,765,354	-12,024,789	-10
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	117,445,889	105,712,374	-11,733,515	-10
	Average	NA	NA	NA	NA
Parker (all)	Sum	1,029,077,488	1,000,934,857	-28,142,631	-3
	Average	NA	7,943,927	7,943,927	NA
Parker (other than Springtown)	Sum	910,287,345	894,169,503	-16,117,842	-2
	Average	NA	NA	NA	NA

Source: Parker County Appraisal District.

Table 87. Vacant Property Values for Parker County, Springtown, and Abutting Properties Before, During, and After Construction

During Construction					
Location	Sum or Average	1989 Real Property Value ($)	1992 Real Property Value ($)	Actual Difference ($)	Percent Difference
Highway Property	Sum	744,981	635,372	-109,609	-15
	Average	13,070	10,955	-2,115	-16
Springtown (all)	Sum	14,998,675	13,411,950	-1,586,725	-11
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	14,253,693	12,776,577	-1,477,116	-10
	Average	NA	NA	NA	NA
Parker (all)	Sum	101,794,801	88,426,619	-13,368,182	-13
	Average	NA	11,533	11,533	NA
Parker (other than Springtown)	Sum	86,796,126	75,014,669	-11,781,457	-14
	Average	NA	NA	NA	NA
After Construction					
Location	Sum or Average	1989 Real Property Value ($)	1995 Real Property Value ($)	Actual Difference ($)	Percent Difference (%)
Highway Property	Sum	744,981	534,469	-210,512	-28
	Average	13,070	9,215	-3,855	-30
Springtown (all)	Sum	14,998,675	10,981,795	-4,016,880	-27
	Average	NA	NA	NA	NA
Springtown (other than highway)	Sum	14,253,693	10,447,327	-3,806,366	-27
	Average	NA	NA	NA	NA
Parker (all)	Sum	101,794,801	80,359,959	-21,434,842	-21
	Average	NA	6,696,663	6,696,663	NA
Parker (other than Springtown)	Sum	86,796,126	69,378,163	-17,417,963	-20
	Average	NA	NA	NA	NA

Source: Parker County Appraisal District.

Property values for Parker County, Springtown, and individual abutting properties generally decreased as a whole and, where acreage information was available, on a per acre basis. Therefore, since all area properties are similarly affected, the decline is not solely due to the construction. Abutting inhabitants were more optimistic about the impact, thinking mainly that their property values did not change or increased.

During and after construction, abutting commercial property values did not decrease as much as Springtown commercial property values did. Abutting ranch values decreased less between 1989 and 1992, but about the same as Springtown's between 1992 and 1995. Abutting residential values decreased over twice as much as Springtown values did during and after construction. Abutting vacant property values decreased 1.5 times the percentage that Springtown values did between 1989 and 1992, but about the same as Springtown's between 1992 and 1995.

USER COST IMPACTS

Traffic volume, travel time, and accident rates on the highway may have been affected by changes in the highway during construction. These changes will be summarized in the first section. The business managers were asked to estimate the extent to which highway construction activities affected traffic volumes, travel times, and accident numbers in the construction area. The opinions and actual numbers are compared in the following section. The benefit-cost ratio was also estimated.

HIGHWAY CHANGES DUE TO CONSTRUCTION

Changes to the highway during construction included changes in the capacity, the highway margins, and the general construction activity. These changes are briefly described in this section.

Capacity

There were many changes in the highway capacity during construction. On S.H. 199, the two-lane undivided highway remained a two-lane undivided highway. An additional roadway providing two lanes and shoulders was added, leaving a 23-meter depressed median between the two roadways. Left-turn lanes plus acceleration and deceleration lanes were provided at most intersections. The open ditch median became a continuous two-way left-turn lane close to Azle and Springtown.

There were two bridges on the original roadway, and similar structures had to be built on the new roadway. A multiple box culvert was enlarged to provide adequate drainage capacity and widened to meet safety requirements. A similar structure was constructed on the new roadway.

Margins

The pavement has shoulders three meters wide.

Construction Activity

The Azle construction occurred between October 1990 and April 1993. The Springtown construction occurred between September 1992 and December 1994.

The construction followed the existing alignment, but occasionally switched from one side of the existing roadway to the opposite side to avoid residences, businesses, or problems.

TRAFFIC VOLUME, TRAVEL TIME, AND ACCIDENT RATE TRENDS ON STATE HIGHWAY 199

Traffic Volumes

Non-Relocated Residents' Opinions

Fifty-nine percent of the residents thought that the traffic volume on S.H. 199 increased due to the construction (Table 88). The rest were almost equally divided between decrease, no change, and no answer. One resident commented that the traffic flows much more freely now.

Relocated Residents' Opinions

One of the relocated residents thought that the traffic volume on S.H. 199 did not change due to the construction (Table 88). One thought that it went down 10% to 25%, and two thought that it went down 50% to 100%.

Azle

Business Managers' Opinions. Slightly over half of the businesses said that the traffic volume had not changed during construction, but 28% said that it had decreased, and 15% said that it had increased (Table 89). The main consideration in traffic volume was whether people could take an alternate route. Most Springtown people worked in Fort Worth, and S.H. 199 was their most direct route to work. Therefore, the commuter volume may have stayed the same. However, people could bypass Azle by taking U.S. 180 to Fort Worth. Since truck traffic generally decreased when the highway patrol worked S.H. 199 heavily, trucks may have chosen another route to avoid being slowed down. Therefore, the traffic volume in general may have decreased. After construction, 79% of the responding managers thought that the traffic volume increased, while 17% thought that it did not change.

Traffic Counter Volume. East of F.M. 2257, traffic volume averaged 6,506 in 1991 as seen in Figure 21. It decreased 2% that year, and 7% the following year, the last year of construction. Therefore, traffic volume did slightly decrease during construction. Traffic volume rose 2% during the year after construction and rose 23% more two years after construction. Therefore, most respondents were correct that the traffic volume increased after construction.

Springtown

Business Managers' Opinions. Half (52%) of the business owners thought that the traffic volume on S.H. 199 did not change during construction (Table 90). Twenty-four percent thought that it increased, and 22% thought that it decreased. After construction, 83% thought that it increased, and 11% thought it did not change.

Table 88. Distribution of Abutting Residents' Opinions on the Change in Traffic Volume Due to Construction on S.H. 199

Change in Traffic Volume	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	3	13	0	0
Up 25% - 50%	2	8	0	0
Up 10% - 25%	4	17	0	0
Up 5% - 10%	3	13	0	0
Up 0% - 5%	2	8	0	0
No Change	3	13	1	25
Down 0% - 5%	1	4	0	0
Down 5% - 10%	0	0	0	0
Down 10% - 25%	2	8	1	25
Down 25% - 50%	0	0	0	0
Down 50% - 100%	0	0	2	50
Don't Know	0	0	0	0
No Answer	4	17	0	0
Total	24	100	4	100

Table 89. Responding Business Managers' Estimates of the Change in Traffic Volume on S.H. 199 During Construction Between F.M. 2257 and Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	3	7	0	0
Up 25 - 49%	1	2	2	8
Up 10 - 24%	2	4	11	46
Up 5 - 9%	1	2	6	25
Up 0 - 4%	0	0	0	0
No Change	25	54	4	17
Down < 5%	2	4	0	0
Down 5 - 9%	0	0	1	4
Down 10 - 24%	5	11	0	0
Down 25 - 49%	4	9	0	0
Down 50 - 100%	2	4	0	0
Don't Know	1	2	0	0
No Answer	0	0	0	0
Total Respondents	46	99*	24	100

* Percentages may not add to 100% due to rounding.

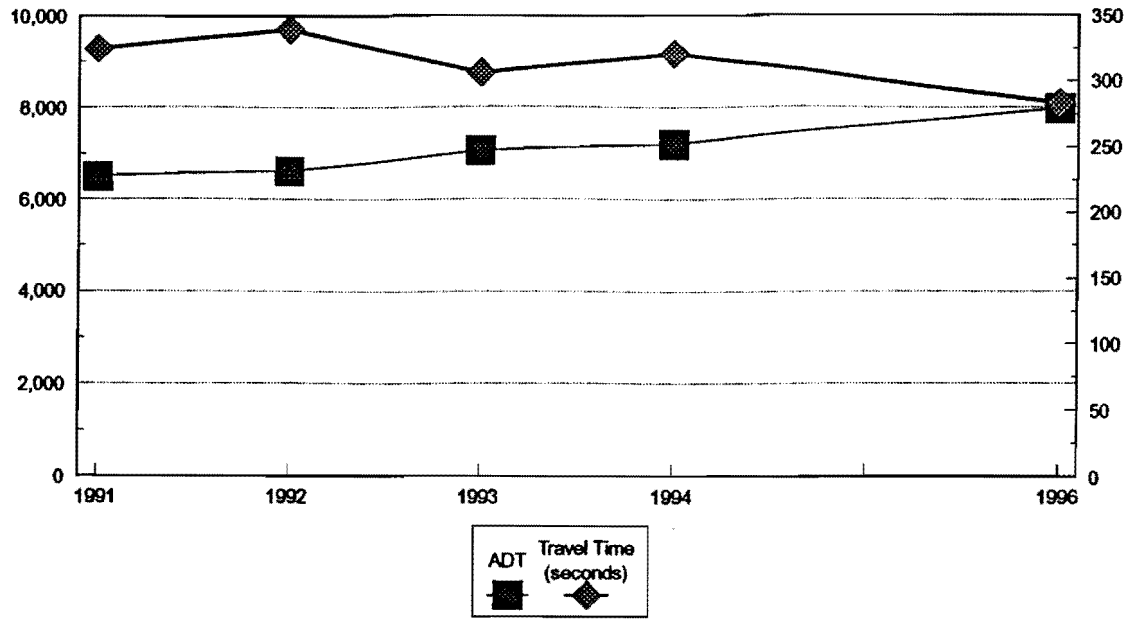


Figure 21. Average ADT and Travel Time on a Widened Section of S.H. 199 Near Azle, Texas

Traffic Counter Volume. Automatic traffic counter data, averaged over several days and locations on S.H. 199 west of F.M. 2257, recorded 6,104 vehicles in 1991, as seen in Figure 22. Traffic volume decreased 2% per year during construction. It rose 8% between 1994 and 1996, but was still 3% below the 1991 average daily traffic (ADT). Therefore, most business managers were right, since it did not increase very much during construction and increased afterward.

Travel Time

Non-Relocated Residents' Opinions

Travel Time to Work. Thirty-eight percent of the residents thought that the time it took to get to work decreased due to construction, while 17% thought it did not change (Table 91). Thirty-seven percent did not answer.

Travel Time to Buy Gas and Food. There was no consensus about the impact of construction on the time it took to buy gas or food (Table 92). Seventeen percent thought that it increased, 21% thought that it did not change, and 37% thought that it decreased.

Table 90. Opinions of Managers of Springtown Businesses Abutting S.H. 199 on the Change in Traffic Volume During Construction

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	3	5	3	7
Up 25 - 49%	5	8	4	9
Up 10 - 24%	5	8	24	52
Up 5 - 9%	0	0	7	15
Up 0 - 4%	2	3	0	0
No Change	32	52	5	11
Down < 5%	1	2	0	0
Down 5 - 9%	1	2	1	2
Down 10 - 24%	5	8	0	0
Down 25 - 49%	5	8	0	0
Down 50 - 100%	1	2	0	0
Don't Know	0	0	2	4
No Answer	1	2	0	0
Total Respondents	61	100	46	100

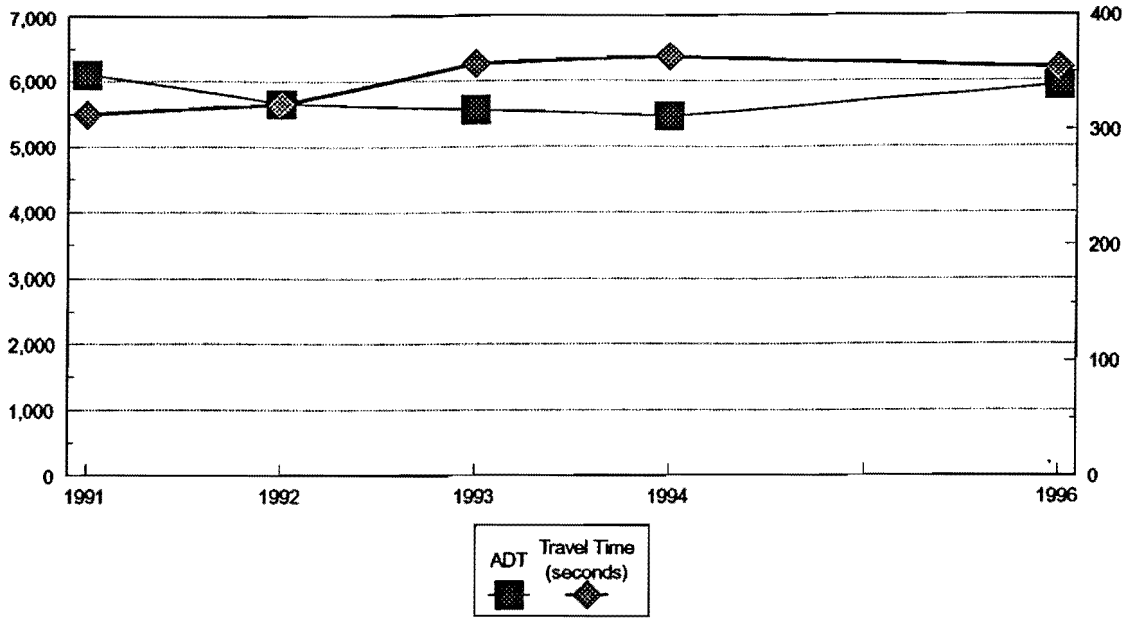


Figure 22. Average ADT and Travel Time on a Widened Section of S.H. 199 Near Springtown, Texas

Relocated Residents' Opinions

Travel Time to Work. There was no consensus on the construction impact on the relocated residents' travel time to work. One thought that the time it took to get to work increased 50% to 100% due to construction, while another thought that it went down less than 5% (Table 91). Two did not answer the question.

Travel Time to Buy Gas and Food. Three out of four relocated residents thought the time it took to buy gas or food during construction increased (Table 92). One thought that it decreased 25% to 50%.

Azle

Business Managers' Opinions. Most business managers (86%) thought that the time it took to travel through Azle and Springtown increased during construction (Table 93). One business manager said that the construction equipment would pull out and slow traffic down. Another said that drivers had to be cautious. After construction, 87% of the responding managers thought that travel time decreased less than 24%, and 8% thought there was no change.

Instrumented Vehicle Travel Time. Travel times are presented in Figure 21. The average travel time for instrumented vehicle runs in 1991 was 5 minutes and 25 seconds. The average travel time increased by 4.6% during the first year of construction

Table 91. Distribution of Residents' Opinions on the Change in Travel Time to Work Due to Construction on S.H. 199

Change in Travel Time to and from Work	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	0	0	1	25
Up 25% - 50%	0	0	0	0
Up 10% - 25%	2	8	0	0
Up 5% - 10%	0	0	0	0
Up 0% - 5%	0	0	0	0
No Change	4	17	0	0
Down 0% - 5%	5	21	1	25
Down 5% - 10%	0	0	0	0
Down 10% - 25%	3	13	0	0
Down 25% - 50%	1	4	0	0
Down 50% - 100%	0	0	0	0
Don't Know	0	0	0	0
No Answer	9	38	2	50
Total	24	100	4	100

Table 92. Distribution of Residents' Opinions About the Change in Shopping Travel Time Due to the Construction

Change in Travel Time to Buy Gas/Food	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	0	0	1	25
Up 25% - 50%	0	0	1	25
Up 10% - 25%	3	13	0	0
Up 5% - 10%	1	4	1	25
Up 0% - 5%	0	0	0	0
No Change	5	21	0	0
Down 0% - 5%	5	21	0	0
Down 5% - 10%	2	8	0	0
Down 10% - 25%	1	4	0	0
Down 25% - 50%	1	4	1	25
Down 50% - 100%	0	0	0	0
Don't Know	0	0	0	0
No Answer	6	25	0	0
Total	24	100	4	100

Table 93. Responding Azle Business Managers' Estimates of the Change in Time It Took to Travel on S.H. 199 During Construction

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses*	Number of Businesses	Percent of Businesses*
Up 50 - 100%	12	26	1	4
Up 25 - 49%	17	37	0	0
Up 10 - 24%	7	15	0	0
Up 5 - 9%	2	4	0	0
Up 0 - 4%	2	4	0	0
No Change	4	9	2	8
Down < 5%	0	0	1	4
Down 5 - 9%	0	0	12	50
Down 10 - 24%	0	0	8	33
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	2	4	0	0
No Answer	0	0	0	0
Total Respondents	46	99*	24	99*

* Percentages may not add to 100% due to rounding.

but decreased 10% during the second year of construction. The travel time increased 4.9% during the first year after construction and was four seconds faster than the 1991 travel time. In 1996, the average travel time was 4 minutes and 43 seconds, a 13% decrease from 1991. Therefore, most managers were right in that the travel time decreased after construction.

Springtown

Business Managers' Opinions. Most business managers (75%) thought that the time it took to travel through the construction area during construction increased (Table 94). Eighteen percent thought that it did not change, and 8% thought that it decreased. After construction, 61% thought that the travel time decreased, while 29% thought it increased.

Instrumented Vehicle Travel Time. The average travel times for instrumented vehicle runs in 1991, the year before construction started, was 5 minutes and 14 seconds as shown in Figure 22. As most managers suspected, the average travel time increased each of the following years during construction. In 1996, two years after construction ended, the average travel time was 4 minutes and 54 seconds, which is a 6% decrease from 1991. More than half of the managers thought this decrease had occurred.

Accidents

Non-Relocated Residents' Opinions

There was no consensus among responding non-relocated residents about the impact of the construction on the number of accidents on S.H. 199. Most of the residents who gave an opinion (42%) thought that they decreased due to construction, while 29% thought they increased (Table 95). Seventeen percent thought that the number did not change.

Relocated Residents' Opinions

Two of the responding relocated residents who gave an opinion did not think that the number of accidents on S.H. 199 changed due to construction, while two thought accidents decreased 50% to 100% (Table 95).

Azle

Business Managers' Opinions. Twenty percent of the managers thought that the number of accidents did not change. Most (76%) indicated that the number of accidents on S.H. 199 increased (Table 96). Forty-six percent thought the number increased by more than 50%. Managers noted two main causes. First, there were few crossovers, so people missing crossovers had a problem turning around, which led to increased accidents. Others thought the construction company changed the directions and lanes of

Table 94. Distribution of Springtown Business Managers' Opinions About the Change in Travel Time on S.H. 199

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	12	20	3	7
Up 25 - 49%	15	25	1	2
Up 10 - 24%	15	25	4	9
Up 5 - 9%	2	3	5	11
Up 0 - 4%	1	2	0	0
No Change	11	18	4	9
Down < 5%	0	0	2	4
Down 5 - 9%	0	0	14	30
Down 10 - 24%	2	3	4	9
Down 25 - 49%	3	5	5	11
Down 50 - 100%	0	0	3	7
Don't Know	0	0	1	2
No Answer	0	0	0	0
Total Respondents	61	101*	46	101*

* Percentages may not add to 100% due to rounding.

Table 95. Distribution of Responding Residents' Opinions About the Construction Impact on Accidents on S.H. 199

Change in Number of Accidents	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	0	0	0	0
Up 25% - 50%	1	4	0	0
Up 10% - 25%	3	13	0	0
Up 5% - 10%	1	4	0	0
Up 0% - 5%	2	8	0	0
No Change	4	17	2	50
Down 0% - 5%	1	4	0	0
Down 5% - 10%	4	17	0	0
Down 10% - 25%	3	13	0	0
Down 25% - 50%	1	4	0	0
Down 50% - 100%	1	4	2	50
Don't Know	0	0	0	0
No Answer	3	13	0	0
Total	24	100	4	100

travel without warning that they had been changed.

The results of the increased accidents are still being felt by one business. The owner of a shop that held night classes said that students were scared to drive there at night because of all of the accidents, so her enrollment was down. Most of the other comments, however, were positive. One business manager said that there had been no accidents since the highway was reopened. Another said that there were two wrecks outside the store before the construction that would have resulted in less damage if the highway had been fixed the way it is now, with a gentler ditch that does not flip the cars. Another said that it is safer now.

There was no consensus on the change in the number of accidents after construction. Forty-two percent thought there was no change in the number of accidents, while 33% thought the number increased. Twenty-one percent thought that it decreased.

Actual Accidents. The number and type of accidents on S.H. 199 in Azle by type of accident damage for 1990 to 1995 are shown in Table 97. There was a slight increase in accidents during construction, but a 47% decrease during the second year of construction. Accidents were higher during construction than after, but there was no data available before construction for comparison.

Springtown

Business Managers' Opinions. Most business owners (68%) thought that the number of accidents on S.H. 199 increased during construction (Table 98). Thirty-one percent thought that they did not change. After construction, 51% thought that the number of accidents increased, 20% thought they did not change, and 15% thought that it decreased.

Actual Accidents. The number and type of accidents on S.H. 199 in Springtown by type of accident damage for 1991 to 1993 is shown in Table 99. There was a slight increase in accidents during construction. The numbers rose each year during construction and were 38% less the year after construction than the year before construction.

IMPACT ON USER COSTS: ESTIMATES USING MicroBENCOST

The MicroBENCOST computer program was used to analyze the benefits and costs to motorists of the highway widening construction. In general, the program compares the motorist costs before an improvement with those existing after an improvement has been made. In this report, the model was also used to calculate during-construction impacts on motorists.

The information needed to run this model includes the type of construction, the cost of the construction, the length and number of segments of the project, and the average daily traffic (ADT) and average speed for the segments. Widening construction is classified as an added-capacity problem in MicroBENCOST. The construction costs were $11.702 million, and the project was divided into two segments, the Azle half of the

Table 96. Responding Azle Business Managers' Estimates of the Change in the Number of Accidents on S.H. 199 During Construction

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses*	Number of Businesses	Percent of Businesses*
Up 50 - 100%	21	46	1	4
Up 25 - 49%	5	11	0	0
Up 10 - 24%	6	13	3	13
Up 5 - 9%	2	4	2	8
Up 0 - 4%	1	2	2	8
No Change	9	20	10	42
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	4	17
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	1	4
Down 50 - 100%	1	2	0	0
Don't Know	1	2	1	4
No Answer	0	0	0	0
Total Respondents	46	100	24	100

Table 97. Number of Accidents per Year, State Highway 199 in Azle, 1990 -1995

Year	Fatal	Possible Injury	Non-Injury	Total
1990	**0**	**21**	**23**	**44**
1991	**0**	**23**	**12**	**35**
1992	**0**	**26**	**28**	**54**
1993	**0**	**19**	**14**	**33**
1994	0	9	10	19
1995	0	5	15	20

Source: Texas Accident Database.

Table 98. Distribution of Springtown Business Managers' Opinions About the Change in the Number of Accidents on S.H. 199

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	13	21	3	7
Up 25 - 49%	14	23	3	7
Up 10 - 24%	13	21	9	20
Up 5 - 9%	2	3	8	17
Up 0 - 4%	0	0	0	0
No Change	19	31	9	20
Down < 5%	0	0	2	4
Down 5 - 9%	0	0	4	9
Down 10 - 24%	0	0	1	2
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	0	0	7	15
No Answer	0	0	0	0
Total Respondents	61	99*	46	101*

* Percentages may not add to 100% due to rounding.

Table 99. Number of Accidents per Year, State Highway 199 in Springtown, 1990 - 1995[1]

Year	Fatal	Possible Injury	Non-Injury	Total[2]
1990	1	8	17	26
1991	0	11	15	26
1992	**1**	**13**	**14**	**28**
1993	**0**	**16**	**18**	**34**
1994	**1**	**22**	**25**	**48**
1995	0	8	8	16

1 Figures include accidents on F.M. 2257, which is the boundary of the Azle and Springtown projects.

2 Source: Texas Accident Database.

project ($3.620 million) and the Springtown half of the project ($8.082 million). ADT data were collected by TTI employees and were presented in Figure 21 and Figure 22. As noted in the introduction to this report, the Azle segment is 7.66 kilometers, and the Springtown segment is 7.47 kilometers.

Azle

Benefits discounted over 20 years totalled $9.5 million. The cost figures are summarized in Table 100. The benefit-cost ratio was 2.95, which means that the motorists are receiving $2.95 in benefits for every dollar spent on the project.

Springtown

Benefits discounted over 20 years totalled $9.4 million. The cost figures are summarized in Table 101. The benefit-cost ratio was 1.48, which means that the motorists are receiving $1.48 in benefits for every dollar spent on the project.

SUMMARY

Traffic Volume

Approximately half of the responding Azle and Springtown business managers thought that the traffic volume did not change, while the rest were divided between thinking that it increased or decreased. Fifty-eight percent of the non-relocated residents thought that traffic volume increased, while the rest were divided between decrease and no change. The traffic volume decreased 2% to 7% each year during construction.

After construction, approximately 80% of the Azle and Springtown business managers thought that traffic volume increased. Traffic counters corroborated their feelings as they indicated that traffic volume rose 2% to 23% each year after construction. Springtown traffic in 1996 was still 3% below the traffic volume in 1991.

Travel Time

Seventy-five percent to 86% of Azle and Springtown managers thought that the travel time increased, while there was no consensus among non-relocated residents about the impact on travel time. Travel time for both cities increased 3% to 5% during the first year of construction. However, Azle travel time decreased 10% during the second year of construction, while Springtown travel time increased 11%.

After construction, 61% to 87% thought that travel time decreased. Travel time for both cities increased in 1994. In Azle, the travel time was still four seconds faster than in 1991. Travel time in both cities decreased in 1996 and was 13% to 19% lower than 1991 values.

Table 100. Summary of Discounted Benefits and Costs for Construction on S.H. 199 in Azle, Texas

Motorist Benefits	Benefit Value ($)
Delay Savings	1,364,120
Reduced Vehicle Operating Cost	294,170
Accident Reduction	7,874,720
Total Discounted User Benefits	9,533,010
Discounted Construction Costs	3,448,000
Discounted Maintenance Costs	480,000
Salvage Value	1,110,000
Total Discounted Costs Less Salvage Value	2,818,000
Gross Benefit-Cost Ratio	2.95

Table 101. Summary of Discounted Benefits and Costs for Construction on S.H. 199 in Springtown, Texas

Motorist Benefits	Benefit Value ($)
Delay Savings	1,413,090
Reduced Vehicle Operating Cost	303,990
Accident Reduction	7,864,650
Total Discounted User Benefits	9,401,730
Discounted Construction Costs	7,698,000
Discounted Maintenance Costs	460,000
Salvage Value	2,478,000
Total Discounted Costs Less Salvage Value	5,680,000
Gross Benefit-Cost Ratio	1.48

Accidents

Most Azle and Springtown (68% to 76%) business managers thought that the number of accidents increased during construction, while there was no consensus among non-relocated residents. The average number of accidents during construction did increase for Springtown, but decreased for Azle.

After construction, there was no consensus among Azle business managers. Half of the Springtown managers thought that the number of accidents increased, and the rest were divided between no change, decrease, and don't know. The number of accidents after construction was lower than any year reported in the Texas Accident Database.

User Cost

User benefits in Azle discounted over 20 years totalled $9.5 million. The benefit-cost ratio was 2.95, which means that the motorists are receiving $2.95 in benefits for every dollar spent on the project.

Springtown user benefits discounted over 20 years totalled $9.4 million. The benefit-cost ratio was 1.48, which means that the motorists are receiving $1.48 in benefits for every dollar spent on the project.

IMPACT ON GROSS TAX REVENUES FOR CITY AND COUNTY

Gross business sales, and therefore sales tax revenues, for abutting businesses may decrease during highway construction and may be permanently affected after construction ends. Land values, and thus property taxes, may also be affected by the construction. In this section, estimation of these tax revenue consequences is described. Note that the highway widening may create additional demand for tax revenue dollars, but this aspect of the tax revenue impact is not investigated in this report.

BUSINESSES AND PROPERTY ABUTTING CONSTRUCTION

Sales Tax Revenue

The first step in estimating the impacts on gross business sales of constructing a new highway is to classify the businesses in the study according to business type. Business type refers to whether the businesses are retail, service, manufacturing, or wholesale businesses. Many managers who provided their actual sales represented business extremes in their industry classification. Some managers who did not report their sales were not in industries represented by managers who reported their sales. Therefore, the collected data could not be used to estimate total industry sales for abutting businesses.

Azle

Before and During Construction. The number of businesses by type of business that reported their gross sales for 1989 is presented in Table 102. The gross sales are not presented in tables to avoid disclosing sales of individual firms. To evaluate the impact on gross sales tax revenues, the percent of gross sales that are taxable was estimated from the sales and taxable sales from the state comptroller's office for each business classification (Table 103). The gross sales for each business type was then multiplied by this percentage to estimate the amount of sales that were taxable. This amount of taxable sales was then multiplied by the 1% city tax rate to estimate the dollar amount of the tax revenue, $23,205, from the responding abutting businesses.

The above procedure was repeated using 1990-1993 gross sales data. The gross sales for each business type was multiplied by the estimated percentage subject to sales tax (Table 104) to arrive at the amount of sales that were taxable. This amount of taxable sales was then multiplied by the 1% city tax rate to estimate the dollar amount of the tax revenue, $21,561, from the responding abutting businesses. Therefore, sales tax receipts from these businesses decreased 7% during construction. The county sales tax rate was 0.5% for both periods, so county sales tax revenues also decreased 7% during construction.

Before and After Construction. Responding Azle business managers did not provide after-construction sales data.

Table 102. The Number of Abutting Azle Businesses With Reported Gross Sales Before and During Construction

Industry	Number of Outlets (1987-94)
Retail Trade	9
Services	4
Manufacturing	2
Wholesale Trade	1
All Major Divisions	16

Table 103. Gross Sales and Number of Reporting Outlets for Azle, Texas, 1987 - 1989

Industry	Year	Gross Sales ($)[1]	Amount Subject to Sales Tax[1]	Percent Subject to Sales Tax[2]
Retail Sales	1987	64,385,597	36,410,663	57
	1988	59,520,439	33,813,998	57
	1989	63,001,288	34,318,910	54
Service	1987	3,129,758	2,166,183	69
	1988	3,260,026	2,547,826	78
	1989	3,665,070	2,666,941	73
Manufacturing	1987	27,575,834	499,544	2
	1988	60,289,867	629,296	1
	1989	60,181,416	536,754	1
Wholesale	1987	4,125,923	2,468,917	60
	1988	3,663,884	1,829,379	50
	1989	2,819,066	1,573,347	56
All Divisions	1987	132,084,212	45,580,684	35
	1988	165,617,442	47,677,566	29
	1989	167,705,421	50,881,313	30

[1] Source: State Comptroller's Office.

[2] column four/column three.

Table 104. Gross Sales and Amount Subject to Tax for Azle, Texas, 1990 - 1994

Industry	Year	Gross Sales ($) [1]	Amount Subject to Sales Tax ($)[1]	Percent Subject to Sales Tax[2]
Retail Sales	1990	67,717,334	34,511,525	51
	1991	69,407,557	35,608,617	51
	1992	72,278,272	37,565,178	52
	1993	75,039,722	38,761,622	52
	1994	82,241,662	40,628,876	49
Service	1990	6,923,265	3,168,814	46
	1991	6,412,895	3,143,887	49
	1992	8,915,721	3,186,328	36
	1993	10,303,083	3,576,495	35
	1994	12,733,076	4,567,279	36
Manufacturing	1990	46,438,090	875,228	2
	1991	17,298,648	1,255,735	7
	1992	18,275,453	1,380,202	8
	1993	56,026,904	2,477,173	4
	1994	21,333,008	3,056,951	14
Wholesale	1990	4,241,340	1,581,636	37
	1991	3,559,624	1,419,216	40
	1992	6,244,535	1,490,375	24
	1993	3,532,576	1,452,886	41
	1994	2,947,698	1,595,517	54
All Divisions	1990	169,282,824	53,989,678	32
	1991	139,108,888	54,866,301	39
	1992	151,890,354	57,869,096	38
	1993	195,169,015	60,198,335	31
	1994	172,933,965	65,494,251	38

[1] Source: State Comptroller's Office.
[2] column four / column three.

Springtown

Before and During Construction. The number of businesses that reported their gross sales for 1991 through 1994 and the total gross sales of these businesses for 1987-1991 are presented in Table 105. To evaluate the impact on gross sales tax revenues, the percent of gross sales that are taxable was estimated from the sales and taxable sales information received from the State Comptroller's office for each business classification (Table 106). The gross sales for each business type was then multiplied by this percentage to estimate the amount of sales that were taxable (Table 107). This amount of taxable sales was then multiplied by the tax rates for the city to estimate the dollar amount of the tax revenue, $79,003 (Table 108). The average city tax rate is actually 0.014 because the rate was 0.01 in 1987 and 0.015 thereafter, but 0.015 is used to facilitate comparison with the during construction data. A county sales tax of 0.5% was initiated in 1988, but the rate was applied to the 1987 amount subject to sales tax and the estimated amount of county sales tax receipts is $26,334.

The above procedure was repeated using 1992-1994 gross sales data. The gross sales for each business type was multiplied by the estimated percentage subject to sales tax (Table 109) to arrive at the amount of sales that were taxable (Table 110). This amount of taxable sales was then multiplied by the tax rates for the city to estimate the dollar amount of the tax revenue, $79,374 (Table 111). Therefore, sales tax receipts from these businesses increased by less than 1% during construction. The estimated amount of county sales tax receipts is $26,458. Since the county tax rate did not change, the percentage change in county sales tax receipts is the same as the percentage change in the city tax receipts.

Before and After Construction. The above procedure was repeated using 1987 gross sales data reported by four businesses for the after-construction survey. The gross sales are not presented in tables to avoid disclosing sales of individual firms. The gross sales for each business type was multiplied by the estimated percentage subject to tax to estimate the amount of sales that were taxable. This amount of taxable sales was then multiplied by the tax rates for the city to estimate the dollar amount of the tax revenue, $10,737. The actual sales tax rate for 1987 was 0.01, and this resulted in an estimated sales tax revenue of $7,158. The 0.015 rate was used to facilitate comparisons with 1996, when the sales tax rate was 0.015. The county sales tax rate of 0.5%, initiated in 1988, was applied to the 1987 amount subject to sales tax to facilitate comparisons of tax receipts. The estimated amount of county sales tax receipts is $3,579.

The above procedure was repeated using 1996 gross sales data. The estimated gross sales for each business type was multiplied by the estimated percentage subject to sales tax to arrive at the amount of sales that were taxable. This amount of taxable sales was then multiplied by the tax rates for the city to estimate the dollar amount of the tax revenue, $14,083. The estimated amount of county sales tax receipts is $4,694. Since the county tax rate did not change, the percentage change in county sales tax receipts is the same as the percent change in the city tax receipts, which was 31% after construction.

Table 105. Estimated Gross Sales for Businesses Abutting Construction in Springtown, Texas During Construction

Industry	Number of Outlets (1987-1991)	Average 1987-1991 Gross Sales	Real Average 1987-1991 Gross Sales ($) (1996=100)
Retail Trade	9	5,998,000	7,418,198
Services	9	3,143,500	3,659,541
All Major Divisions[1]	18	9,141,500	11,077,739

[1] Real average gross sales for all major divisions is the sum of the listed industries' gross sales.

Table 106. Estimated Amount Subject to Sales Tax for Springtown, Texas, Businesses, 1987 - 1991

Industry	Year	Gross Sales ($)[1]	Amount Subject to Sales Tax ($)	Percent Subject to Sales Tax ($)[2]
Retail Trade	1987	16,121,603	6,910,666	43
	1988	16,038,124	6,541,390	41
	1989	17,435,507	7,190,694	41
	1990	17,866,701	7,491,445	42
	1991	18,899,569	7,517,767	40
Services	1987	942,658	591,865	63
	1988	1,212,497	777,211	64
	1989	1,317,793	853,817	65
	1990	1,426,170	784,555	55
	1991	1,500,613	794,580	53
All Major Divisions	1987	18,348,042	7,659,913	42
	1988	19,537,861	7,689,195	39
	1989	21,544,134	8,409,205	39
	1990	23,399,971	8,750,257	37
	1991	25,523,817	9,072,287	36

[1] Source: State Comptroller's Office.

[2] column four / column three.

Table 107. Estimated 1987-1991 Gross Sales Subject to Sales Tax for Abutting Businesses with Reported Gross Sales Before and During Construction

Industry	Real Average 1987-1991 Gross Sales ($) (1996 = 100)	Average Percent Subject to Sales Tax in 1987-1991 (%)[1]	Real 1987-1991 Gross Sales Subject to Sales Tax ($) (1996 = 100)[2]
Retail Trade	7,418,198	41.4	3,071,134
Services	3,659,541	60.0	2,195,725
All Businesses[3]	11,077,739	38.6	5,266,859

1 From Table 106.

2 column two * column three.

3 Estimated gross sales subject to sales tax for all businesses is the sum of the values for all businesses that reported actual sales for 1991 through 1994.

Table 108. Estimated Sales Tax Revenue from Businesses Abutting Construction with Reported Gross Sales Before and During Construction

Industry	Real 1987-1991 Gross Sales Subject to Sales Tax ($) (1996 = 100)[1]	Average Sales Tax Rate in 1987-1991[2]	Real 1987-1990 Sales Tax Revenue ($) (1996 = 100)[3]
Retail Trade	3,071,134	0.015	46,067
Services	2,195,725	0.015	32,936
All Businesses[4]	5,266,859	0.015	79,003

1 From Table 107.

2 Source: State Comptroller's Office. The actual average is 0.014 because the rate was 0.01 in 1987 and 0.015 thereafter. However, 0.015 is used here to better compare the change in sales revenue based on sales.

3 column two * column three.

4 Estimated sales tax revenue for all businesses is the sum of the sales tax revenue for all businesses that reported their actual sales for 1991 through 1994.

Table 109. Estimated Amount Subject to Sales Tax for Springtown, Texas, Businesses, 1992 - 1994

Industry	Year	Gross Sales ($)[1]	Amount Subject to Sales Tax ($)	Percent Subject to Sales Tax ($)[2]
Retail Trade	1992	18,470,466	7,872,697	43
	1993	18,431,570	8,206,470	45
	1994	18,074,111	8,376,716	46
Services	1992	1,578,928	814,477	52
	1993	1,588,961	746,002	47
	1994	2,603,603	798,595	31
All Major Divisions	1992	28,263,599	9,072,287	32
	1993	29,322,357	9,208,281	31
	1994	28,196,487	10,129,201	36

[1] Source: State Comptroller's Office.
[2] column four / column three.

Property Tax Receipts

Estimation Procedure

The value of existing abutting property was used to estimate the proposed impact of the construction on property tax receipts from property abutting the construction on S.H. 199. The following procedures are used to estimate the existing/remaining abutting property tax impacts on Azle and Springtown.

Step 1. The land and improvement values of properties abutting the newly widened section of S.H. 199 were obtained from the Parker County Appraisal Office. A total value was generated by adding the land and improvement value.

Step 2. Exemptions were subtracted from the total values to get assessment figures. Exemptions are given for homesteads. People qualifying for homestead exemptions are also eligible to qualify for exemptions for being over 65 or a veteran. Until 1995, there were three different levels of exemptions depending on type of veteran status -- a fourth category was added in 1995. The homestead exemption for the Lateral Road Assessed is $3,000. The Lateral Road Assessed was calculated as the total minus the homestead and veteran's exemptions, while the General Fund Assessed was calculated as the total minus the "over 65" and veteran's exemptions. If the land is for agricultural use, a productivity value,

Table 110. Estimated 1992-1994 Gross Sales Subject to Sales Tax for Abutting Businesses with Reported Gross Sales Before and During Construction

Industry	Estimated 1992-1994 Gross Sales ($)[1]	Estimated Real 1992-1994 Gross Sales ($) (1996 = 100)	Estimated Percent Subject to Sales Tax in 1992-1994[2]	Estimated Real 1992-1994 Gross Sales Subject to Sales Tax ($) (1996 = 100)[3]
Retail Trade	5,890,000	6,407,806	44.7	2,864,289
Services	5,171,857	5,605,888	43.3	2,427,350
All Major Divisions[4]	11,061,857	12,013,694	33.0	5,291,639

1 From 18 businesses that reported actual sales for 1991 through 1994.
2 From Table 106.
3 column two * column three.
4 Taxable gross sales for all major divisions is the sum of the listed industries' gross sales.

Table 111. Estimated 1992-1994 Sales Tax Revenue from Businesses Abutting Construction with Reported Gross Sales Before and During Construction

Industry	Estimated Real 1991 Gross Sales Subject to Sales Tax ($) (1996 = 100)[1]	Sales Tax Rate in 1991[2]	Estimated Real 1991 Springtown Sales Tax Revenue ($) (1996 = 100)[3]
Retail Trade	2,864,289	0.015	42,964
Services	2,427,350	0.015	36,410
All Major Divisions[4]	5,291,639	0.015	79,374

1 From Table 110.
2 Source: State Comptroller's Office.
3 column two * column three.
4 Estimated taxable sales for all major divisions is the sum of that for all listed industries.

which is usually more than 10 times smaller than the market value, is used for both the General Fund Assessed and the Lateral Road Assessed.

Step 3. Parker County tax rates for 1986, 1989, and 1992 are presented in Table 112. The hospital, college, and general fund tax rates are multiplied by the General Fund Assessed to calculate their respective total tax revenue, while the road tax rate is multiplied by the Lateral Road Assessed to calculate the total road tax revenue.

Step 4. City and Independent School District (ISD) tax rates for Springtown and Azle are presented in Table 113. The city rates are multiplied by the General Fund Assessed. Different exemption levels are applied by the ISD. In 1986, the homestead and "over 65" exemptions were $5,000. After 1986, the "over 65" exemption was raised to $10,000. The rates are multiplied by the respective property values less exemptions and the result is added to the county tax to generate the total tax.

Azle Property Tax Revenue

County Property Tax Revenue. The county tax revenues from Azle properties are presented in Table 114. The Parker County tax rates apply to all properties studied in this project. County property tax revenue for Azle properties nominally increased 50% between 1986 and 1989, but in real terms it increased 30%. Between 1989 and 1992, it increased 30% nominally and about half that amount in real terms. It increased almost 60% both nominally and in real terms between 1992 and 1995.

Total Property Tax Revenue. Percentage changes for Azle total property tax revenues, presented in Table 115, are slightly higher between 1986 and 1989, and slightly lower between 1989 and 1992. Therefore, the Springtown CED did not affect Azle as it affected Springtown because it only applies to the few Azle properties that are in the Springtown school district. None of the Azle properties studied were in the Azle city limit, so city taxes do not apply to these properties.

Springtown Property Tax Revenue

County Property Tax Revenue. The property tax revenues for abutting properties are estimated in Table 116 for Springtown. Springtown county taxes nominally increased 22% between 1986 and 1989, and increased 7% in real terms. They more than doubled in both real and nominal terms between 1989 and 1992 due to the introduction of the Parker County CED tax rate in 1992. Nominal values decreased 34% and real values fell 28% between 1992 and 1995 with the elimination of the CED.

Total Property Tax Revenue. Total taxes only increased 29% (14% in real terms) between 1989 and 1992 because the CED tax rate was deducted from the Springtown ISD tax rate (Table 117). The CED was introduced to prevent the Springtown ISD rate from increasing so rapidly. Parker County citizens must not have appreciated subsidizing the Springtown ISD, however, as it only lasted one year. Between 1992 and 1995, nominal and real property tax receipts increased 20%. Not all

Table 112. Parker County Property Tax Rates for Various Years

Year	County (CED / General Fund for 1992)		Road	Hospital	College
1986	0.1792%		0.1226%	0.0286%	0.0516%
1989	0.2251%		0.1310%	0.0700%	0.0579%
1992	**0.9400%**	**0.2520%**	**0.1225%**	**0.1472%**	**0.0611%**
1995	0.2715%		0.1225%	0.1457%	0.6038%

Source: Parker County Appraisal Office.

Table 113. City and ISD Tax Rates for Springtown and Azle, Texas for Various Years

Year	Springtown		Azle	
	City	ISD	City	ISD
1986	0.3200%	1.2100%	0.3000%	0.6400%
1989	0.4244%	1.5000%	0.2940%	0.8730%
1992	**0.5308%**	**0.4495%**	**0.4400%**	**1.2840%**
1995	0.5308%	1.4469%	0.493984%	1.3440%

Source: Parker County Appraisal Office.

Table 114. Estimated County Property Tax Revenue From Property Abutting Construction on S.H. 199 in Azle, Texas for Various Years

Year	Number of Properties	County Taxes ($)	Average County Tax ($)	Real County Taxes (1996 = 100)	Real Average County Taxes (1996 = 100)
1986	132	23,038.10	174.53	32,980.63	242.68
1989	138	36,263.74	262.78	45,885.33	322.97
1992	**138**	**46,890.57**	**339.79**	**52,438.57**	**369.10**
1995	138	74,618.50	540.71	83,447.20	587.35

Table 115. Estimated Total Property Tax Revenue from Property Abutting S.H. 199 in Azle, Texas for Various Years

Year	Number of Properties	Total Taxes ($)	Average Total Taxes ($)	Real Total Taxes (1996 = 100)	Real Average Total Taxes (1996 = 100)
1986	132	64,616.44	489.52	92,502.92	700.78
1989	138	103,407.00	749.33	130,843.21	948.15
1992	**138**	**127,895.00**	**926.78**	**143,027.26**	**1,036.43**
1995	138	159,919.40	1,158.84	164,641.43	1,193.05

Table 116. Estimated County Property Taxes Paid on Property Abutting Construction on S.H. 199 in Springtown for Various Years

Year	Number of Properties	County Taxes ($)	Average County Tax ($)	Real County Taxes (1996 = 100)	Real Average County Taxes (1996 = 100)
1986	116	22,029.72	189.91	31,537.07	271.88
1989	118	26,772.11	226.88	33,875.35	287.08
1992	**124**	**103,322.30**	**833.24**	**115,547.17**	**931.83**
1995	124	74,060.53	597.26	76,247.36	614.89

Table 117. Estimated Total Property Taxes Paid on Property Abutting Construction on S.H. 199 in Springtown for Various Years

Year	Number of Properties	Total Taxes ($)	Average Total Taxes ($)	Real Total Taxes (1996 = 100)	Real Average Total Taxes (1996 = 100)
1986	116	102,542.90	883.99	146,797.27	1,265.49
1989	118	121,714.00	1,031.50	154,007.47	1,305.17
1992	**124**	**156,997.00**	**1,266.11**	**175,572.56**	**1,415.91**
1995	124	188,730.20	1,522.02	211,060.36	1,702.10

of the Springtown properties are in the Springtown city limit, so the city tax does not apply to all Springtown properties.

CITY OF AZLE

Sales Tax Revenue

The amount of Azle gross sales subject to sales tax is presented in Table 118. The sales tax rate was 0.01 during the period of study, 1987 through 1996. The average nominal sales tax revenue between 1990 and 1993 increased 15% over the 1987-1989 average, while real sales tax revenue increased 13%. Nominal sales tax revenue in 1994 increased 2% and real sales tax revenue increased 7% over the 1990-1993 average.

CITY OF SPRINGTOWN

Sales Tax Revenue

The amount subject to sales tax is presented in Table 119. The sales tax rate was 0.01 during 1987 and 0.015 thereafter. The 1992-1994 average nominal sales tax revenue increased 13% but decreased 1% in real terms over the 1987-1991 average.

Property Tax Revenue

The net property values, property tax rates, and estimated property tax receipts for Springtown are presented in Table 120. Estimated Springtown property tax receipts fell in 1992, during construction, but the change was due to the change in tax rates associated with the CED. Property values steadily increased from 1989 to 1995. Therefore, the property tax receipts would have increased had the tax rates not changed. The tax rates rose above their 1989 levels in 1995.

PARKER COUNTY

Sales Tax Revenue

Parker County sales subject to sales tax are presented in Table 121. Parker County initiated a 0.005 county sales tax rate in 1988. For the purposes of the analysis, the sales tax rates are also applied to the 1987 amount subject to tax. The 1990-1994 average sales tax revenue was 16% higher than the 1987-1989 average in nominal terms and 1% higher in real terms.

Property Tax Revenue

The net property values, property tax rates, and property tax receipts for Parker County are presented in Table 122. Property tax rates and receipts have steadily

Table 118. Sales Tax Revenue for Azle, Texas, 1987 - 1994

Year	Amount Subject to Sales Tax[1]	Real Amount Subject to Sales Tax ($) (1996=100)	Sales Tax Rate	Total Sales Tax Revenue ($)	Real Total Sales Tax Revenue ($) (1996=100)
1987	45,580,684	62,954,307	0.01	455,807	629,543
1988	47,677,566	63,234,236	0.01	476,776	632,342
1989	50,881,313	64,381,274	0.01	508,813	643,813
1990	**53,989,678**	**64,812,398**	**0.01**	**539,897**	**648,124**
1991	**54,866,301**	**63,205,012**	**0.01**	**548,663**	**632,050**
1992	**57,869,096**	**64,716,045**	**0.01**	**578,691**	**647,160**
1993	**60,198,335**	**65,364,144**	**0.01**	**601,983**	**653,641**
1994	65,494,251	69,339,055	0.01	654,943	693,391

Table 119. Sales Tax Revenue for Springtown, Texas, 1987-1994

Year	Amount Subject to Sales Tax[1]	Real Amount Subject to Sales Tax ($) (1996=100)	Sales Tax Rate	Total Sales Tax Revenue ($)	Real Total Sales Tax Revenue ($) (1996=100)
1987	7,659,913	10,579,581	0.010	76,599	105,796
1988	7,689,195	10,198,095	0.015	115,338	152,971
1989	8,409,205	10,640,357	0.015	126,138	159,605
1990	**8,750,257**	**10,504,325**	**0.015**	**131,254**	**157,565**
1991	**8,690,119**	**10,010,864**	**0.015**	**130,352**	**150,163**
1992	**9,072,287**	**10,145,701**	**0.015**	**136,084**	**152,186**
1993	**9,208,281**	**9,998,473**	**0.015**	**138,124**	**149,977**
1994	10,129,201	10,723,830	0.015	151,938	160,857

Table 120. Springtown, Texas Net Property Values, Property Tax Rates, and Property Tax Revenues for Various Years

Year	Total Taxable Value ($)[1]	Property Tax Rate ($ per $100 Valuation)[2]	Estimated Property Tax Receipts ($)[3]	Real Estimated Property Tax Receipts ($) (1996 = 100)
1986	215,142,237	1.5300	3,291,676.23	4,712,262.77
1989	191,405,879	1.9244	3,683,414.74	4,660,707.85
1992	**196,268,016**	**0.9803**	**1,924,015.36**	**2,151,660.80**
1995	201,674,424	1.9777	3,988,515.08	4,106,286.20

1 Source: Parker County Appraisal District.
2 Source: City of Springtown
3 column 2 * column 3.

Table 121. Sales Tax Revenue for Parker County, Texas, 1987 - 1994

Year	Amount Subject to Sales Tax[1]	Real Amount Subject to Sales Tax ($) (1996=100)	Sales Tax Rate	Total Sales Tax Revenue ($)	Real Total Sales Tax Revenue ($) (1996=100)
1987	151,813,915	209,679,606	0.010	1,518,139	2,096,796
1988	160,997,872	213,529,722	0.015	2,414,968	3,202,946
1989	173,829,584	219,950,498	0.015	2,607,444	3,299,257
1990	**181,155,015**	**217,469,180**	**0.015**	**2,717,325**	**3,262,038**
1991	**183,042,003**	**210,861,162**	**0.015**	**2,745,630**	**3,162,917**
1992	**198,814,286**	**222,337,573**	**0.015**	**2,982,214**	**3,335,064**
1993	**216,288,452**	**234,848,845**	**0.015**	**3,244,327**	**3,522,733**
1994	255,295,260	270,282,229	0.015	3,829,429	4,054,233

increased since 1990. Property value increased during all construction years except 1995. Property tax revenue declined for that year as well.

SUMMARY

Sales Tax Receipts

Real sales tax receipts from 16 abutting businesses whose managers were willing to report their sales decreased 7% for Azle businesses during construction. None of the Azle businesses reported their sales after construction. Azle sales tax receipts increased 13% (2% in real terms) during construction and 15% (7% in real terms) after construction, while Parker County sales tax receipts increased 16% nominally and 1% in real terms during construction. Assuming that the responding businesses are representative of all abutting Azle businesses, sales tax receipts were negatively impacted during construction.

Estimated real sales tax receipts from 18 abutting Springtown businesses increased by less than 1% during construction, but increased 31% after construction for four responding businesses. Springtown tax receipts increased 13% nominally but decreased 1% in real terms. Therefore, Springtown sales tax receipts were not as affected as Azle sales tax receipts were.

Property Tax Receipts

Abutting property tax receipts in Azle and Springtown increased by a greater percentage than Springtown and Parker County property tax receipts increased before, during, and after construction, both in real and nominal terms.

Table 122. Parker County Property Values, Property Tax Rates, and Property Tax Revenues for Various Years

Year	Total Net Appraisal Value ($)[1]	Property Tax Rate ($ per $100 Valuation)[2]	Estimated Property Tax Revenue ($)[3]	Real Estimated Property Tax Revenue ($) (1996 = 100)
1986	2,415,909,349	0.3820	9,228,773.71	13,211,629.52
1989	2,402,721,030	0.4840	11,629,169.79	14,714,651.12
1992	**2,530,417,385**	**1.5228**	**38,533,195.94**	**43,092,362.39**
1995	2,671,859,824	1.1435	30,552,717.09	31,454,864.25

[1] Source: Parker County Appraisal District.
[2] Source: Parker County Tax Assessor-Collector.
[3] column 2 * column 3.

ESTIMATED IMPACT OF THE CONTRACTOR'S EXPENDITURES

Employment and output multipliers were developed from the 1986 Texas Input-Output Model to produce statewide estimates of impacts from S.H. 199 widening expenditures. Impact estimates were made using the most applicable expenditure category in the input-output model, which is Category 20, New Road/Highway Construction. The estimated employment multiplier in 1986 for New Road/Highway Construction is 53.7601 jobs per million dollars of expenditures. This includes the direct impact of the construction expenditures, the indirect impacts on the suppliers, and the induced effect of increased consumer spending. Since costs have fallen since 1986, the multiplier can be adjusted using the Annual Price Trends for Federal-Aid Highway Construction, which gives a composite index for Texas of 114.60 for 1986 and 109.98 for 1995. An adjusted employment multiplier of 56.02 is generated by dividing the 1995 composite index by the 1986 composite index, and dividing the 1986 employment multiplier for New Road/Highway Construction by the ratio of the indices. The 1986 total output multiplier for New Road/Highway Construction is 3.69 dollars of output per dollar of expenditures.

AZLE

In Table 123, the Azle contractor's expenditures are broken down by location of the supplier and type of expenditure.

Employment Impacts

Applying the employment multiplier calculated above to the $3.620 million of construction expenditures in Azle indicates that widening S.H. 199 generated approximately 202 new jobs for the Texas economy. It is unknown how much employment was generated in the Azle area. However, using the multipliers, the estimated increase in Azle employment was 10 new jobs (see Table 124).

Output Impacts

Applying the output multiplier to the $3.620 million dollars of Azle expenditures indicates that widening S.H. 199 generated about $13.4 million in additional output. Again, it is unknown how much of this increase benefitted the Azle area, but an estimate using the multipliers is $680,000 (see Table 125).

SPRINGTOWN

The Springtown contractor did not provide a location-breakdown of his expenditures, but TxDOT provided the total cost of the Springtown construction, $8.082 million.

Table 123. Distribution of the Azle Contractor's Expenditures by Location of Supplier and Type of Material

Type of Cost	Expenditures by Location of Suppliers ($)			Total Cost by Type of Material ($)
	Azle and Springtown	Elsewhere in Texas	Outside Texas	
Labor	54,173	758,418	270,864	1,083,455
Materials	103,419	1,964,953	206,837	2,275,209
Overhead	26,155	183,085	52,310	261,550
Total Cost by Location	183,747	2,906,456	530,011	3,620,214

Table 124. Estimated Number of Jobs Generated From the Azle Contractor's Expenditures by Location of Supplier and Type of Material

Type of Cost Generating Jobs	Estimated Number of Jobs Generated by Contractor Expenditures by Location of Suppliers			Total Estimated Number of Jobs by Type of Material
	Azle and Springtown	Elsewhere in Texas	Outside Texas	
Labor	3	42	15	60
Materials	6	110	12	128
Overhead	1	10	3	14
Total Number of Jobs by Location	10	162	30	202

Table 125. Estimated Additional Output Generated From the Azle Contractor's Expenditures by Location of Supplier and Type of Material

Type of Cost Generating Additional Output	Estimated Additional Output Generated by Contractor Expenditures by Location of Suppliers ($ million)			Total Estimated Additional Output by Type of Material ($ million)
	Azle and Springtown	Elsewhere in Texas	Outside Texas	
Labor	0.20	2.80	1.00	4.00
Materials	0.38	7.25	0.76	8.39
Overhead	0.10	0.68	0.19	0.97
Total Output by Location	0.68	10.73	1.95	13.36

Employment Impacts

Applying the employment multiplier to the $8.082 million of construction expenditures in Springtown indicates that widening S.H. 199 generated about 453 new jobs for the Texas economy.

Output Impacts

Applying the output multiplier to the Springtown construction expenditures indicates that widening S.H. 199 generated about $29.82 million in additional output.

IMPACT ON ENVIRONMENT AND GENERAL APPEARANCE

Impacts on the environment were assessed using the answers to opinion questions on the surveys described in the Business Impact chapter, the Residential Impact chapter, and the Relocation Impact chapter. The impacts are divided into three categories: those on residents, those on the individual abutting businesses, and those on all abutting businesses. The general impacts are those on noise level, air pollution level, the general appearance of S.H. 199, and the desirability of living abutting S.H. 199.

RESIDENTS' OPINIONS

Noise Level

Non-Relocated Residents' Opinions

There was no consensus among non-relocated residents about the change in noise level. Fifty percent of the residents thought that the noise level increased on S.H. 199 due to construction, while 20% thought that it decreased (Table 126). Thirteen percent thought it did not change. One resident thought that the noise level was worse since the highway was elevated, and another thought it would improve when both sides are open. An elderly couple did not appreciate the noise all night long, and was considering relocating.

Relocated Residents' Opinions

Three of the residents thought that the noise level decreased on S.H. 199 due to construction (Table 126). One thought that there was no change.

Air Pollution Level

Non-Relocated Residents' Opinions

Thirty-eight percent of the residents thought that the air pollution level on S.H. 199 increased due to construction (Table 127). Twenty-nine percent thought that it did not change. One resident said that the dust and dirt were awful during the construction, but he thought it would improve when the construction was finished.

Relocated Residents' Opinions

Two relocated residents thought that the air pollution level on S.H. 199 decreased due to construction (Table 127). Two thought that it did not change.

Table 126. Distribution of Responding Abutting Residents' Opinions About the Change in Noise Level Due to Construction

Change in Noise Level	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	7	29	0	0
Up 25% - 50%	1	4	0	0
Up 10% - 25%	1	4	0	0
Up 5% - 10%	3	13	0	0
Up 0% - 5%	0	0	0	0
No Change	3	13	1	25
Down 0% - 5%	2	8	0	0
Down 5% - 10%	0	0	0	0
Down 10% - 25%	2	8	1	25
Down 25% - 50%	0	0	1	25
Down 50% - 100%	1	4	1	25
Don't Know	0	0	0	0
No Answer	4	17	0	0
Total	24	100	4	100

Table 127. Distribution of Residents' Opinions on the Change in Air Pollution Level Due to Construction on S.H. 199

Change in Air Pollution Level	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	3	13	0	0
Up 25% - 50%	2	8	0	0
Up 10% - 25%	3	13	0	0
Up 5% - 10%	1	4	0	0
Up 0% - 5%	0	0	0	0
No Change	7	29	2	50
Down 0% - 5%	2	8	0	0
Down 5% - 10%	0	0	0	0
Down 10% - 25%	0	0	0	0
Down 25% - 50%	0	0	1	25
Down 50% - 100%	1	4	1	25
Don't Know	0	0	0	0
No Answer	5	21	0	0
Total	24	100	4	100

General Appearance

Non-Relocated Residents' Opinions

Most residents (46%) thought that the general appearance of S.H. 199 improved due to construction (Table 128). Thirteen percent thought there was no change, while 29% thought that it worsened.

One respondent did not like the fact that the ditch in front of his house was not cleaned or maintained well. Another said that TxDOT let the weeds grow head high. It was unsightly as well as dangerous since people couldn't see oncoming traffic when trying to enter the highway. Another resident said that a ditch three meters from her house was too steep to mow. When it was not mowed and got dry, it was a fire hazard.

Relocated Residents' Opinions

Two relocated residents thought that the general appearance of S.H. 199 improved due to construction (Table 128). Two thought that it did not change.

Desirability as a Place to Live

Non-Relocated Residents' Opinions

There was no consensus on whether the desirability of living abutting S.H. 199 increased, decreased, or stayed the same due to construction (Table 129). Twenty-five percent thought it increased, 25% thought that it stayed the same, and 38% thought that it decreased.

One resident did not like the fact that the highway was higher than his building after construction. It felt like the building was in a hole, and the driveway was steep. Another said there is increased runoff due to the elevation of the highway. Another resident said that the grade level of the highway should have been discussed with residents before construction began. Another resident felt that TxDOT messed up his property, did not finish his driveway, cut it short, put the highway drainage almost in his driveway, and cut the drainage ditches so he couldn't even mow it. The standing drainage water and the unmowed grass were creating conditions favorable to mosquitos.

Relocated Residents' Opinions

There was no consensus on whether the desirability of living abutting S.H. 199 increased, decreased, or stayed the same due to construction (Table 129). One thought it increased 50% to 100%, two thought that it stayed the same, and one thought that it decreased less than 5%.

Table 128. Distribution of Residents' Opinions About Construction Impacts on the General Appearance of S.H. 199

Change in General Appearance of Area	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	1	4	1	25
Up 25% - 50%	4	17	0	0
Up 10% - 25%	3	13	1	25
Up 5% - 10%	2	8	0	0
Up 0% - 5%	1	4	0	0
No Change	3	13	2	50
Down 0% - 5%	0	0	0	0
Down 5% - 10%	1	4	0	0
Down 10% - 25%	1	4	0	0
Down 25% - 50%	1	4	0	0
Down 50% - 100%	4	17	0	0
Don't Know	0	0	0	0
No Answer	3	13	0	0
Total	24	100	4	100

Table 129. Distribution of Responding Residents' Opinions on Construction Impacts on Desirability of Living Abutting S.H. 199 in Azle and Springtown

Change in Desirability as a Place to Live	Non-Relocated Residents		Relocated Residents	
	Number of Residences	Percent of Residences	Number of Residences	Percent of Residences
Up 50% - 100%	0	0	1	25
Up 25% - 50%	2	8	0	0
Up 10% - 25%	3	13	0	0
Up 5% - 10%	1	4	0	0
Up 0% - 5%	0	0	0	0
No Change	6	25	2	50
Down 0% - 5%	0	0	1	25
Down 5% - 10%	0	0	0	0
Down 10% - 25%	3	13	0	0
Down 25% - 50%	2	8	0	0
Down 50% - 100%	4	17	0	0
Don't Know	0	0	0	0
No Answer	3	13	0	0
Total	24	100	4	100

OPINIONS ON EFFECTS ON INDIVIDUAL BUSINESSES

Noise Level

Azle

During Construction. Most Azle abutting business managers (60%) indicated that the noise level around their business increased during construction (Table 130). Twenty-eight percent indicated that it did not change.

After Construction. Most Azle abutting business managers (71%) indicated that the noise level around their business did not change after construction (Table 130). Twenty-nine percent indicated that it increased.

Springtown

During Construction. Almost half (49%) of the Springtown business managers did not think the noise level changed near their business during the construction (Table 131). Slightly more than one-fourth thought it increased 50% to 100%, and slightly less than one-fourth thought that it increased up to 50%.

After Construction. Most Springtown abutting business managers (72%) indicated that the noise level around their business did not change after construction (Table 131). Nineteen percent indicated that it increased.

Air Pollution Level

Azle

During Construction. Thirty-nine percent of the business managers indicated that the air pollution level around their businesses increased 50% or more during construction, while 24% thought it increased up to 50% (Table 132). Twenty-eight percent indicated that there was no change. One manager said that the asphalt made people sick. Another manager was allergic to the tar. A third stated that dirt and dust settled in the building.

After Construction. Most Azle abutting business managers (83%) indicated that the noise level around their business did not change after construction (Table 132). Sixteen percent indicated that it increased.

Springtown

During Construction. Thirty-nine percent of the business managers thought that the air pollution level near their business did not change during construction (Table 133). One-third thought that it increased 50% or more, and approximately one-fourth thought that it increased 10% to 50%. Two managers mentioned that there was a lot of dust.

After Construction. Most Springtown abutting business managers (85%)

Table 130. Responding Business Managers' Estimates of the Impact on the Noise Level Near Their Business and on S.H. 199 in Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	16	35	1	4
Up 25 - 49%	8	17	0	0
Up 10 - 24%	2	4	4	17
Up 5 - 9%	1	2	2	8
Up 0 - 4%	1	2	0	0
No Change	13	28	17	71
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	1	2	0	0
Don't Know	1	2	0	0
No Answer	3	7	0	0
Total Respondents	46	100	24	100

Table 131. Responding Business Managers' Estimates of the Change in Noise Level Near Their Business and on S.H. 199 in Springtown

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	16	26	0	0
Up 25 - 49%	5	8	2	4
Up 10 - 24%	7	11	2	4
Up 5 - 9%	2	3	4	9
Up 0 - 4%	1	2	1	2
No Change	30	49	33	72
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	1	2
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	0	0	2	4
No Answer	0	0	1	2
Total Respondents	61	100	46	100

Table 132. Responding Business Managers' Estimates of the Impact on the Air Pollution Level Near Their Business on S.H. 199 in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	18	39	0	0
Up 25 - 49%	6	13	0	0
Up 10 - 24%	1	2	2	8
Up 5 - 9%	1	2	2	8
Up 0 - 4%	3	7	0	0
No Change	13	28	20	83
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	1	2	0	0
No Answer	3	7	0	0
Total Respondents	46	100	24	99*

* Percentages may not add to 100% due to rounding.

Table 133. Business Manager's Estimates of the Change in Air Pollution Level Near Their Business in Springtown

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	20	33	0	0
Up 25 - 49%	8	13	0	0
Up 10 - 24%	6	10	0	0
Up 5 - 9%	2	3	3	7
Up 0 - 4%	0	0	1	2
No Change	24	39	39	85
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	1	2
Down 10 - 24%	0	0	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	0	0	0	0
Don't Know	0	0	1	2
No Answer	1	2	1	2
Total Respondents	61	100	46	100

indicated that the noise level around their business did not change after construction (Table 133). Nine percent indicated that it increased.

OPINIONS ON EFFECTS ON ALL STATE HIGHWAY 199 BUSINESSES

Noise Level

Azle

During Construction. Similarly, most managers (70%) indicated that the noise level on S.H. 199 increased during the construction (Table 134). Twenty-eight percent of the managers indicated that it did not change.

After Construction. Managers were almost evenly split between thinking that the noise level did not change on S.H. 199 after construction (46%), and that it increased up to 24% (50%).

Springtown

During Construction. Thirty-nine percent of the business managers thought that the noise level on S.H. 199 did not change during construction (Table 135). Two managers (3%) thought that it decreased during construction, but the remaining managers (58%) thought it increased. Slightly more than one-fourth thought it increased by 50% to 100% and nearly one-third thought it increased up to 50%. One manager noted that the pavement is still not even so trucks make lots of noise.

After Construction. Slightly over half of the Springtown abutting business managers (59%) indicated that the noise level on S.H. 199 did not change after construction (Table 135). Thirty-nine percent indicated that it increased.

Air Pollution Level

Azle

During Construction. Forty-one percent of the managers indicated that the air pollution level on S.H. 199 increased 50% or more during construction, while 36% thought it increased up to 50% (Table 136). One-fifth said that it did not change.

After Construction. Slightly over half of the Azle abutting business managers (58%) indicated that the air pollution level on S.H. 199 did not change after construction (Table 136). Thirty-eight percent indicated that it increased.

Springtown

During Construction. Thirty-nine percent of the business managers thought that the air pollution level on S.H. 199 did not change during construction (Table 137). Three managers (6%) thought that it decreased. Twenty-eight percent thought that it

Table 134. Responding Business Managers' Estimates of the Impact on the Noise Level on S.H. 199 in Azle

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	12	26	0	0
Up 25 - 49%	9	20	0	0
Up 10 - 24%	9	20	5	21
Up 5 - 9%	1	2	2	8
Up 0 - 4%	1	2	5	21
No Change	13	28	11	46
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	1	2	0	0
Down 50 - 100%	0	0	0	0
Don't Know	0	0	1	4
No Answer	0	0	0	0
Total Respondents	46	100	24	100

Table 135. Responding Business Managers' Estimates of the Change in Noise Level on S.H. 199 Between F.M. 2257 and Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	16	26	1	2
Up 25 - 49%	4	7	2	4
Up 10 - 24%	9	15	4	9
Up 5 - 9%	4	7	8	17
Up 0 - 4%	2	3	3	7
No Change	24	39	27	59
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	1	2
Down 25 - 49%	0	0	0	0
Down 50 - 100%	2	3	0	0
Don't Know	0	0	0	0
No Answer	0	0	0	0
Total Respondents	61	100	46	100

Table 136. Responding Business Managers' Estimates of the Impact on the Air Pollution Level on S.H. 199 Between F.M. 2257 and Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	19	41	0	0
Up 25 - 49%	4	9	0	0
Up 10 - 24%	9	20	4	17
Up 5 - 9%	0	0	2	8
Up 0 - 4%	3	7	3	13
No Change	9	20	14	58
Down < 5%	0	0	0	0
Down 5 - 9%	0	0	0	0
Down 10 - 24%	0	0	0	0
Down 25 - 49%	1	2	0	0
Down 50 - 100%	0	0	0	0
Don't Know	1	2	1	4
No Answer	0	0	0	0
Total Respondents	46	101*	24	100

* Percentages may not add to 100% due to rounding.

increased 50% to 100%, while 27% thought that it increased up to 50%. Two managers mentioned that there was a lot of dust.

After Construction. Most Springtown abutting business managers (70%) indicated that the air pollution level on S.H. 199 did not change after construction (Table 137). Twenty-six percent indicated that it increased.

General Appearance of S.H. 199

Azle

During Construction. There was no consensus among the business managers about the change in the general appearance of S.H. 199 during construction. Approximately one-fifth indicated that it looked better, 41% said that it did not change, and one-third said that it was worse (Table 138). Two managers said that the appearance of the roadside was fine for construction. Another did not see how they could have done anything differently. One manager said they cleaned up parts of it as a result of the construction. Most think that it looks better since the construction, but one thinks it looks worse now because they let the weeds grow.

After Construction. Most Azle abutting business managers (67%) indicated that the general appearance of S.H. 199 improved after construction (Table 138). Twenty-one percent indicated that it did not change.

Springtown

During Construction. There was no consensus among the business managers about the change in the general appearance of S.H. 199 during construction. Approximately one-third indicated that it looked better, one-fourth said that it did not change, and 39% said that it was worse (Table 139). One manager summed it up - sometimes it looked good and sometimes it looked bad. Some noted that the workers kept things neat most of the time and did a good job at clearing up the roadside. Another noted that they had good roadside maintenance and spent time on the appearance. On the other hand, one manager said that it was trashy because it was torn up. Another said that the workers would eat their lunch and throw the trash on the street.

After Construction. Most Springtown abutting business managers (84%) indicated that the general appearance of S.H. 199 improved after construction (Table 139). Nine percent indicated that it did not change.

SUMMARY

Over half of the responding business managers thought that noise and air pollution levels increased near their own business and on S.H. 199 during construction. Over half of the responding residents thought that the noise level near their residence increased during construction. Most of the remaining respondents thought that the levels did not change. There was no consensus on the general appearance of S.H. 199, or the

Table 137. Business Managers' Estimates of the Change in Air Pollution Level on S.H. 199 During Construction Between F.M. 2257 and Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	17	28	0	0
Up 25 - 49%	7	11	1	2
Up 10 - 24%	7	11	1	2
Up 5 - 9%	2	3	7	15
Up 0 - 4%	1	2	3	7
No Change	24	39	32	70
Down < 5%	1	2	0	0
Down 5 - 9%	0	0	1	2
Down 10 - 24%	1	2	0	0
Down 25 - 49%	0	0	0	0
Down 50 - 100%	1	2	0	0
Don't Know	0	0	1	2
No Answer	0	0	0	0
Total Respondents	61	100	46	100

Table 138. Respondents' Estimates of the Change in General Appearance of the Roadside and Area Near S.H. 199 in Azle, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	3	7	5	21
Up 25 - 49%	1	2	1	4
Up 10 - 24%	1	2	5	21
Up 5 - 9%	2	4	4	17
Up 0 - 4%	3	7	1	4
No Change	19	41	5	21
Down < 5%	1	2	1	4
Down 5 - 9%	0	0	1	4
Down 10 - 24%	2	4	0	0
Down 25 - 49%	3	7	0	0
Down 50 - 100%	9	20	0	0
Don't Know	1	2	1	4
No Answer	1	2	0	0
Total Respondents	46	100	24	100

Table 139. Responding Business Managers' Estimates of the Change in General Appearance of S.H. 199 in Springtown, Texas

Percentage Change	During Construction		After Construction	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Up 50 - 100%	8	13	8	17
Up 25 - 49%	1	2	5	11
Up 10 - 24%	4	7	17	37
Up 5 - 9%	3	5	8	17
Up 0 - 4%	3	5	1	2
No Change	16	26	4	9
Down < 5%	1	2	1	2
Down 5 - 9%	2	3	1	2
Down 10 - 24%	5	8	0	0
Down 25 - 49%	11	18	0	0
Down 50 - 100%	5	8	0	0
Don't Know	0	0	1	2
No Answer	2	3	0	0
Total Respondents	61	100	46	99*

* Percentages may not add to 100% due to rounding.

residents' opinion of the desirability of living abutting S.H. 199 and change in air pollution during construction.

After construction, most business managers thought that the air pollution and noise level at their business did not change. Fifty percent to 60% thought that the noise and air pollution levels on S.H. 199 increased, and 30% to 50% thought that they did not change after construction. Sixty-seven percent to 84% of the respondents thought that general appearance of S.H. 199 improved after construction.

CONTRACTOR AND TXDOT PERFORMANCE

Businesses were asked to rate the performance of the contractor and the TxDOT personnel involved in widening S.H. 199 between Azle and Springtown, Texas. Supporting comments were encouraged.

CONTRACTOR'S PERFORMANCE

Azle

It is difficult to give a definite evaluation of the contractor's performance. There were three contractors on the project, and businesses' evaluations were probably based on the contractor who worked near their business. Many did not know who the contractor was. This may be part of the reason that there is no consensus among business managers about the contractor's performance, although the comments were more negative than positive. Approximately one-third said that the contractor did a very good or good job, 15% that he did a fair job, and 46% that he did a poor or very poor job (Table 140).

The contractors used 114% of their allotted working days taking into consideration the extension they were granted, or 130% based only on the original number of days they were allotted. In October 1992, with 100% of the allotted time expended, the area engineer rated the contractor overall at 7.70. A "7" rating is marginal and an "8" rating is good. All aspects of the work were good except for the prosecution and progress of the earthwork, which was marginal.

Abutting business managers had some positive comments. The contractor gave a hardware store lots of business. He always tried to leave in and out access for another business. If he could not, he tried to do things quickly. Another manager noted that he seemed willing to work with people to fix things. Several businesses said that he did a good job. One noted that the workers hit a water line, but they fixed it quickly.

There were more negative comments. These related to the quality of the work and how the work was done. The two aspects of quality concerned the drainage and the driveways. These problems could be due to TxDOT's design or the contractor's implementation. However, the workers poured and tore out the storm drains several times near one business. Another business still has problems with flooding. A third business manager would like them to come back and straighten up his driveway.

Other comments related to how the contractor did his job. Tar and hay were sprayed on cars near one business. The workers blocked driveways and crossovers at another. People would not use the crossovers because they could not see if it was safe to pull out. The workers also parked their cars along the construction, which presented a hazard.

Several businesses noted that the highway was initially closed on the Fourth of July weekend and opened after construction on the Easter weekend, both holiday weekends associated with increased traffic. There was no warning that there would be a change in the direction and lanes of travel. In addition, the changes were poorly marked, so it was not clear where people should be driving.

Table 140. Evaluation of the Contractor's Performance During Construction of S.H. 199 Between Springtown and Azle, Texas

Evaluation	Azle		Springtown	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Very Good	3	7	17	28
Good	12	26	12	20
Fair	7	15	14	23
Poor	10	22	11	18
Very Poor	11	24	4	7
Don't Know	2	4	3	5
No Answer	1	2	0	0
Total	46	100	61	101

One business manager did not like the fact that the construction was not carried out in sequence along the highway: they started on one end, then moved to the other end, and then started in the middle. Other business managers said that the contractor's workers did not work. They would run the machinery up and down the highway and stand in groups talking. One manager noted that when the beams were brought out for the bridge, the workers would not unload them until they were ready to use the beams. Then, the drivers waited until everyone was unloaded so they could drive back in a group. If they had worked during these times, they would have been done in half the time.

Furthermore, many business managers were not satisfied with the way they were treated. One manager said that the contractor would ignore people -- one man was half-way decent, and the others did not care. Another manager said that if that contractor is ever hired by the state of Texas again, he will quit paying his taxes.

Springtown

There were two contractors for the Springtown project, so it is difficult to give a definite evaluation of the contractor's performance. Business managers' evaluations were probably based on the contractor who worked near their business and are presented in

Table 140. Almost half of the managers rated the contractor good or very good, while 23% rated him fair. One-fourth rated him poor or very poor.

The project director rated the contractor an 8.85 overall in October 1992. An "8" rating is "good" and a "9" rating is "very good." The earthwork and small structures work received very good ratings, while the barricade signs and traffic handling received a good rating. In January 1994, the rating was 7.70, with similar earthwork and small structures ratings. The barricade, traffic handling, and large structures received mixed good and marginal ratings. Curb and gutter work was rated good. In December 1994 the rating was 8.0, with good ratings for earthwork and barricade/traffic handling, marginal on reflective pavement markings, and mixed good and marginal on installing traffic signals. The contractor finished using 99% of the allotted time.

Many business managers noted that the construction proceeded slowly. Some noticed that the workers sat around doing nothing. Others indicated that weeks would go by, including pretty days, without any construction activity. Also, if it looked like rain they would be gone four or five days. They did not work on Mondays or Fridays. The first contractor did not show up half the time. Therefore, it seemed that the construction could have been completed faster.

Some thought that part of the delay was due to unwise use of time. Some managers thought that time was wasted because the contractor was not prepared or organized. The road was finished but did not have a center line or signs up, so it took several weeks before they opened it. They had to redo the bridge several times. Toward the end they were in a hurry and now some parts of the road are coming apart. Many managers are concerned that the highway will not hold up.

Other poor management incidents noted by managers included keeping the main intersection in town closed for over a year when it could have been completed in 60 days. The problem was that they would start on it, move on, and then come back to finish. Another business manager noted that the contractors needed to provide notice of ramp or crossover closures. One business manager wanted better access to his business, particularly during the rain since his building was below road level. Another manager thought that the way the highway was divided during construction was poorly done and was the reason there were so many accidents. One manager thought that they should not have worked during school bus hours, and they should not have pulled dirt in front of people.

The last problem was the contractors' attitude. One manager thought the men were rude. Another manager was not pleased because the crew would park in his driveway and block it. He said they needed to work better with the business managers.

Other business managers thought more favorably of the contractor. One manager said that the contractor always provided what he needed, such as dirt and gravel. Another said that he was patient with people and would fix things when needed. He always provided an alternate route to businesses. He was very polite and reasonable, and always tried to help. One manager noted that the workers did an excellent job on the curbing. They did their job. They always let them know when they would be working and were very accommodating. They moved signs for a doctor's patients when needed.

Garey, the second contractor, was always there and working. One manager noted that it was nice in this area, but in Azle it was slow.

TXDOT PERFORMANCE

Azle

There is no general consensus about TxDOT performance, but it is more positive than the general opinion of the contractor's performance. Forty-four percent said TxDOT did a very good or good job, 15% a fair job, and 26% a poor or very poor job (Table 141). One manager likes the width of the intersections and another said that the construction increased accessibility. Negative comments generally fell into three categories: poor public relations, poor management, and poor design.

One manager said that the highway department did not care. He thought TxDOT personnel should have at least talked to the business managers. He thinks TxDOT is going to have to take into consideration how much the construction hurts. Another knew a lot of people who were not satisfied with the way they were treated. He said that the contractor was willing to work with people, but the state would not let him. TxDOT had one business' blacktop removed, and it took a long time to get it replaced. Another bought his property because it was road level. He was told that aspect was not supposed to change during construction but a cost factor resulted in a deep ditch.

Another concern was poor management. One manager attributed the duration of the project to poor management. Another noted that it took too long to get rid of the contractors that were not working. A third said that the construction was needed, but it could have been handled better.

Finally, some managers disliked some aspects of the completed construction. One business has a driveway over a ditch. There was no ditch there before the construction, and it was easier to get in. It is now a safety hazard for commercial vehicles. TxDOT personnel would not allow him to have a wider driveway, and it almost put him out of business.

Another aspect concerns the access roads. One side of the highway has one-way access roads, and the other side has two-way access roads. On the side where they are one-way, people have to go half way to Springtown to turn around, and it is very inconvenient.

A third aspect of the construction that some managers dislike relates to crossovers. Turning around is inconvenient because there are few crossovers. In addition, some managers would like to see signs on the crossovers so people can give better directions than "the fourth crossover from the FINA." Other managers would like to see the crossovers marked so people will know how to use them.

One business manager wants his mailbox to be on the same side of the highway as the business. A child was picking up their mail and throwing it on the road. Another said that one business was moved too far back from the road. A third is concerned that there are no guardrails or reflectors on the ditches. He also questioned the use of bar ditches instead of paved areas. Another issue is whether the problems with the drainage

Table 141. Evaluation of TxDOT Performance During the Construction on S.H. 199 Between Springtown and Azle, Texas

Evaluation	Azle		Springtown	
	Number of Businesses	Percent of Businesses	Number of Businesses	Percent of Businesses
Very Good	3	7	18	30
Good	17	37	13	21
Fair	7	15	7	11
Poor	3	7	6	10
Very Poor	9	20	4	7
Don't Know	6	13	12	20
No Answer	1	2	1	2
Total	46	101*	61	101*

* Percentages may not add to 100% due to rounding.

and driveways are with TxDOT's designs or with the way the contractor implemented TxDOT's designs.

Springtown

Springtown business managers' evaluations of TxDOT performance are presented in Table 141. Slightly over half of the business managers said that TxDOT personnel did a good or very good job, while 11% said they did a fair job. Seventeen percent said they did a poor or very poor job, and 20% did not have an opinion on their performance.

Several business managers viewed TxDOT personnel as liaisons between the contractor and themselves. Therefore, they were disappointed because they thought TxDOT personnel did not communicate well with the business managers. Another business manager had problems with runoff during the rain, and he felt he got the run around when he asked them for help in cleaning up the mess. Finally, TxDOT personnel did help him.

Other business managers expected TxDOT personnel to supervise the contractor. One manager said that TxDOT personnel should have motivated the contractor more. Another said that they should have shut the contractor down when he wasn't paying his bills. A widow feels that her husband's heart attack and subsequent death were due to

TxDOT personnel's unprofessional handling of $1700 in unpaid purchases from their business for materials for S.H. 199 by the unbonded contractor. Two other business managers cannot believe that TxDOT personnel approved the construction because they believe the job was done poorly.

The widening design was not optimal in some business managers' opinions. One manager had trouble getting TxDOT personnel to put a driveway to her house, which was next door to a restaurant. Another is worried about vehicles sliding into his building because of the elevated highway. It looks like they did not plan to have a transition to the existing roads from the highway. One manager had problems with cars parking near the culvert, falling in, and ruining their tires. TxDOT personnel's response was that people should not be parking there because it was state highway property. One manager said that TxDOT personnel wanted him to put in a culvert on his own. Another manager would have liked a crossover in front of his business.

Other managers were upset because TxDOT personnel would not allow some improvements that the managers felt were reasonable. One told TxDOT he would pay them to pave his driveway, but TxDOT personnel said they could not do it.

On the other hand, some business managers said that TxDOT personnel were very cooperative, very kind and effective, always there and always on top of things. Now that it is done it is a good, safe highway. There were a lot of accidents prior to the widening, and it takes less time to get to Fort Worth. The guy over the whole job, Highway Billy, was very easy to work with.

SUMMARY

There were three contractors for the Azle construction, so it is hard to determine which contractor a given respondent is referring to. The Azle contractor was generally regarded more negatively than positively by the respondents. Several respondents were unhappy with the quality of the work performed on the driveways or drains and with the way the contractor's workers performed their job. Major issues involved beginning and ending construction on holiday weekends, poorly marking changes in the direction and lanes of travel, poor public relations, and not working diligently.

There were two contractors for the Springtown segment. Almost half the respondents rated the contractor as good or very good, one-fourth fair, and one-fourth poor or very poor. Business managers said that the construction took longer than it could have due to poor time management. They were concerned about poor road quality because the road was being repaired shortly after it opened. Some did not like the workers' attitudes, either.

TxDOT was considered to have performed more positively than the contractors. However, some managers disliked their public relations, management, and aspects of the highway design for both segments.

CONCLUSIONS

The following conclusions are based on the findings of this study. They are not the only conclusions that might be supported by the findings, but seem to be the most meaningfully supported.

1. The purchase of 179 properties for right-of-way affected 193 owners and tenants. Property owners who were displaced experienced the most negative economic effects. The more properties and amounts of right-of-way taken, the greater the effect.

2. During construction, Springtown businesses lost 16% of their parking spaces, while Azle businesses lost 33% of their parking spaces, while only 9% and 3% were lost after construction. There were 31% to 36% fewer occupied parking spaces during construction and 7% to 8% fewer after construction, but there was no consensus of the impact on the number of customers per day. Therefore, businesses were affected more negatively during construction than after construction.

3. Sales of businesses selling unique products were not affected as much as those selling readily available products.

4. Managers' opinions about changes in their number of parking spaces, full-time employees, and part-time employees agreed with the numbers they reported before, during, and after construction at least 70% of the time. This relationship between opinions and facts supports our ability to rely on opinions, which are more readily available, when conclusions are made.

5. Nominal Springtown and Parker County property values have been decreasing since 1989, while real values have been increasing. Therefore, the property value decline cannot be attributed solely to the construction.

6. Motorists using the widened facility will benefit greatly. During construction, traffic volume decreased and travel time increased, while accidents increased in Azle and decreased in Springtown. After construction, travel time decreased 13% to 19% below 1991 levels, and the number of accidents in 1995 was lower than any year between 1990 and 1995. The negative user costs generated during construction were more than offset by the benefits, as calculated using the MicroBENCOST benefit-cost model. The Azle construction yielded a benefit-cost ratio of 2.95 while the Springtown benefit-cost ratio was 1.48.

7. Abutting sales tax revenues were based on 16 to 18 respondents' sales before construction, and the sales of five Springtown businesses after construction. During construction, abutting Azle sales tax receipts decreased 7%, while

Springtown receipts increased during and after construction. The construction period produced a negative impact on some businesses and tax revenues, but these negative effects were offset by construction expenditures in the Azle and Springtown area. Business customers and motorists will greatly benefit from the widened facility in the years to come. Therefore, it has and will continue to produce a positive effect on the economy of the Azle and Springtown area.

8. The overall economic impact of the S.H. 199 widening project in Azle and Springtown, Texas has been positive on business activity after construction was completed and is expected to accelerate in the future.

REFERENCES

1. Buffington, J. L. and M. T. Wildenthal. *Estimated Economic Impact of Widening U.S. Highway 80 (Marshall Avenue) in Longview, Texas*. Research Report TX-92/968-1F, Texas Transportation Institute, The Texas A&M University System, College Station, Texas, November 1992.

APPENDIX A-1
AZLE DURING-CONSTRUCTION BUSINESS SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.____

STATE HIGHWAY 199 WIDENING BUSINESS IMPACT SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name or the name of your business will not be used in any way that would identify you.

Highway Widening Impact on Your Business During Construction

1. There are several ways that widening of State Highway 199 could have affected your business DURING the construction period. How do you think the construction activities impacted the following things? (Please give your best estimate of the percentage impact, up or down, on your business!)

Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1. Number of usable parking spaces?											
2. Number of customers per day?											
3. Number of full-time employees?											
4. Number of part-time employees?											
5. Gross sales?											
6. Net profit?											
7. Property values?											
8. Noise level?											
9. Air pollution level?											
10. Other effects (state)? ___ _____ _____											

2. There are several ways that widening State Highway 199 could have affected the people, businesses, and travelers in the cities of Azle, La Junta, Reno, and Springtown DURING the construction period. How do you think the construction activities impacted the following things? (Please give your best estimate of the percentage impact, up or down, on the cities of Azle, La Junta, Reno, and Springtown!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	The time it takes to travel through Azle, La Junta, Reno, and Springtown?											
2.	Number of accidents on Highway 199?											
3.	Traffic volumes on Highway 199?											
4.	Employment in other parts of Azle, La Junta, Reno, and Springtown?											
5.	Gross sales volumes for all businesses on Highway 199?											
6.	Gross sales volumes for all other businesses in Azle, La Junta, Reno, and Springtown?											
7.	Property values on Highway 199?											
8.	Property values for all properties in Azle, La Junta, Reno, and Springtown?											
9.	Noise level on Highway 199?											
10.	Air pollution level on Highway 199?											
11.	General appearance of the roadside and area near Highway 199?											
12.	Other effects (state)?____ _____ _____											

Evaluation of Performance of Contractor and TxDOT Personnel

1. How would you rate the overall performance of the Highway 199 project contractor? (Please check one below.)

   Very good__Good__Fair__Poor__Very poor__Don't know__

   Comments_____
   _____
   _____

2. How would you rate the overall performance of the TxDOT personnel supervising the Highway 199 project? (Please check one below.)

   Very good__Good__Fair__Poor__Very poor__Don't know__

   Comments_____
   _____
   _____

Other comments about widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown?_____
_____

Basic Information About Your Business

To help us to properly analyze the answers given by all the Highway 199 businesses, would you furnish the following information about your business?

1. What primary type is your business?

   Retail sales__Retail service__Professional service__Other (Please describe.)___
   If both retail sales and service, please give:

   percent sales ___ percent service ___

2. Do you own or lease this building?

   Owned__Leased____

3. About how old is this building?

   Number of years___Don't know____

4. Did you have to move your business due to the state taking property to widen Highway 199? If yes, where was the original location?

   Front of the property?___ Other location?___

   If other location, where? _____

5. When did you start business abutting Highway 199?

	Month	Year
at this location?	_____	_____
at other location?	_____	_____

6. If you had to move, how much did you spend to relocate?

   Moving expenses? $_____

   Land purchase? $_____

   Building cost? $_____

   Change in rent (if tenant)? $_____

   Other expenses (please list):_____

   _____

7. How many parking spaces did you have for your customers in 1987 before widening Highway 199 and from 1988-1992, during the highway widening?

   Number before_____ Number during_____

8. How many of your parking spaces were occupied by customers during the busiest hour of an average day in 1987 before highway widening and from 1988-1992 during the highway widening?

   Number before_____ Number during_____

9. What percent of your customers were from out of town in 1987 before highway widening and from 1988-1992 during the highway widening?

   Percent before_____ Percent during_____

10. How many people were employed by your business in 1987 before highway widening and from 1988-1992 during the highway widening?(Please give the average annual number, including working owner and/or manager.)

	1987	1988-1992
Full-time	___	___
Part-time	___	___

11. What was the annual gross sales volume of this business in 1987 before the highway widening and in 1988-1992 during the widening?

Before widening volume ($)?

1987 _____

During widening volumes ($)?

1988 _____ 1989 _____

1990 _____ 1991 _____

1992 _____

AND/OR check proper annual gross sales category as follows:

	1987	1988-1992
Less than $100,000	___	___
$100,000 to $500,000	___	___
$500,000 to $1,000,000	___	___
More than $1,000,000.	___	___

APPENDIX A-2
SPRINGTOWN AFTER-CONSTRUCTION BUSINESS SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.____

STATE HIGHWAY 199 WIDENING BUSINESS IMPACT SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name or the name of your business will not be used in any way that would identify you.

Highway Widening Impact on Your Business During Construction

1. There are several ways that widening of State Highway 199 could have affected your business DURING the construction period. How do you think the construction activities impacted the following things? (Please give your best estimate of the percentage impact, up or down, on your business!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	Number of usable parking spaces?											
2.	Number of customers per day?											
3.	Number of full-time employees?											
4.	Number of part-time employees?											
5.	Gross sales?											
6.	Net profit?											
7.	Property values?											
8.	Noise level?											
9.	Air pollution level?											
10.	Other effects (state)? ___ _____ _____											

2. There are several ways that widening State Highway 199 could have affected the people, businesses, and travelers in the cities of Azle, La Junta, Reno, and Springtown DURING the construction period. How do you think the construction activities impacted the following things? (Please give your best estimate of the percentage impact, up or down, on the cities of Azle, La Junta, Reno, and Springtown!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	The time it takes to travel through Azle, La Junta, Reno, and Springtown?											
2.	Number of accidents on Highway 199?											
3.	Traffic volumes on Highway 199?											
4.	Employment in other parts of Azle, La Junta, Reno, and Springtown?											
5.	Gross sales volumes for all businesses on Highway 199?											
6.	Gross sales volumes for all other businesses in Azle, La Junta, Reno, and Springtown?											
7.	Property values on Highway 199?											
8.	Property values for all properties in Azle, La Junta, Reno, and Springtown?											
9.	Noise level on Highway 199?											
10.	Air pollution level on Highway 199?											
11.	General appearance of the roadside and area near Highway 199?											
12.	Other effects (state)?____ _____ _____											

Evaluation of Performance of Contractor and TxDOT Personnel

1. How would you rate the overall performance of the Highway 199 project contractor? (Please check one below.)

   Very good__Good__Fair__Poor__Very poor__Don't know__

   Comments_____
   _____
   _____

2. How would you rate the overall performance of the TxDOT personnel supervising the Highway 199 project? (Please check one below.)

   Very good__Good__Fair__Poor__Very poor__Don't know__

   Comments_____
   _____
   _____

Other comments about widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown?_____
_____

Basic Information About Your Business

To help us to properly analyze the answers given by all the Highway 199 businesses, would you furnish the following information about your business?

1. What primary type is your business?

   Retail sales__Retail service__Professional service__Other (Please describe.)___
   If both retail sales and service, please give:

   percent sales ___ percent service ___

2. Do you own or lease this building?

   Owned__Leased____

3. About how old is this building?

   Number of years___Don't know____

4. Did you have to move your business due to the state taking property to widen Highway 199? If yes, where was the original location?

   Front of the property?___ Other location?___

   If other location, where? _____

5. When did you start business abutting Highway 199?

	Month	Year
at this location?	_____	_____
at other location?	_____	_____

6. If you had to move, how much did you spend to relocate?

   Moving expenses? $_____

   Land purchase? $_____

   Building cost? $_____

   Change in rent (if tenant)? $_____

   Other expenses (please list):_____

   _____

7. How many parking spaces did you have for your customers in 1987 before widening Highway 199 and from 1988-1994, during the highway widening?

   Number before_____ Number during_____

8. How many of your parking spaces were occupied by customers during the busiest hour of an average day in 1987 before highway widening and from 1988-1994 during the highway widening?

   Number before_____ Number during_____

9. What percent of your customers were from out of town in 1987 before highway widening and from 1988-1994 during the highway widening?

   Percent before_____ Percent during_____

10. How many people were employed by your business in 1987 before highway widening and from 1988-1994 during the highway widening?(Please give the average annual number, including working owner and/or manager.)

	1987	1988-1994
Full-time	___	___
Part-time	___	___

11. What was the annual gross sales volume of this business in 1987 before the highway widening and in 1988-1994 during the widening?

Before widening volume ($)?

1987 _____

During widening volumes ($)?

1988 _____ 1989 _____

1990 _____ 1991 _____

1992 _____ 1993 _____

1994 _____

AND/OR check proper annual gross sales category as follows:

	1987	1988-1994
Less than $100,000	___	___
$100,000 to $500,000	___	___
$500,000 to $1,000,000	___	___
More than $1,000,000.	___	___

APPENDIX B
RELOCATED BUSINESS SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.____

STATE HIGHWAY 199 DISPLACED BUSINESS IMPACT SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses. TxDOT is particularly interested in obtaining information on displaced businesses. Please take a little time and answer all questions pertaining to you. Also, please return this form to us as soon as possible. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name and the name of your business will not be used in any way that would identify you.

1. What is your current business address?

   _____

2. Did you have to relocate your business due to the widening?

   Yes ___ No ___

   If you had to relocate your business due to the widening of Highway 199, please give the following addresses:

   address relocated from? _____

   address relocated to? _____

3. How long did your business operate at each location?

	Months	Years
at old highway address?	_____	_____
at relocation address?	_____	_____
at current address?	_____	_____

If you closed your business due to the state taking property to widen Highway 199, check here ___ and skip to the "Closed Business" section on the last page.

If you relocated your business due to the state taking property to widen Highway 199, check here ___ and continue.

Information on Relocated Businesses

3. How much of your business relocation expenditures were not paid for by TxDOT?

Moving expenses? $_____
Land/lot purchase? $_____

Building cost? $_____

Change in monthly rent (if tenant)? $_____

Other expenses (please list):_____

_____

4. How much of the above expenditures for replacement facilities for business represents an improvement over the original facilities taken for right-of-way? $___

_____

Purchase of property?

Land and building? $_____

Other improvements? $_____

Change in monthly rent (if tenant)? $_____

5. How was your business affected by the relocation? (Please give your best estimate of the percentage impact, up or down, on your business).

Possible Effects		Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	Number of usable parking spaces?											
2.	Number of customers per day?											
3.	Number of full-time employees?											
4.	Number of part-time employees?											
5.	Gross sales?											
6.	Net profit?											
7.	Property values?											
8.	Noise level?											
9.	Air pollution level?											
10.	Other effects (state)? ___ _____ _____											

6. How many people were employed by your business in 1987 before the highway widening and from 1988-1992 during the highway widening?(Please give the average annual number, including working owner and/or manager.)

	1987	1988-1992
Full-time	___	___
Part-time	___	___

7. What was the annual gross sales volume of this business in 1987 before the highway widening and in 1988-1992 during the widening?

Before widening volume ($)?

1987 _____

During widening volumes ($)?

1988 _____ 1989 _____

1990 _____ 1991 _____

1992 _____

AND/OR check proper annual gross sales category as follows:

	1987	1988-1992
Less than $100,000	___	___
$100,000 to $500,000	___	___
$500,000 to $1,000,000	___	___
More than $1,000,000.	___	___

Information on Closed Businesses

1. What were the primary reasons why you closed your business instead of relocating and continuing to operate it?

Reasons _____

_____

2. What was your annual gross sales in 1987? $_____

In the last year of operation of the business? $_____

What was the last year your business operated? _____

3. How does your present income compare to what you earned from the highway business?

Up ____% Down ___% About the Same ___%

4. How many people were employed by your business before it closed?

Full-time ___ Part-time ___

5. Comments:_____

APPENDIX C-1
AZLE AFTER-CONSTRUCTION BUSINESS SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.___

STATE HIGHWAY 199 WIDENING BUSINESS IMPACT SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name or the name of your business will not be used in any way that would identify you.

Highway Widening Impact on Your Business After Construction

1. There are several ways that widening of State Highway 199 could have affected your business AFTER the construction period. How do you think the widened highway has impacted the following things? (Please give your best estimate of the percentage impact, up or down, on your business!)

Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1. Number of usable parking spaces?											
2. Number of customers per day?											
3. Number of full-time employees?											
4. Number of part-time employees?											
5. Gross sales?											
6. Net profit?											
7. Property values?											
8. Noise level?											
9. Air pollution level?											
10. Other effects (state)? ___ _____ _____											

2. There are several ways that widening State Highway 199 could have affected the people, businesses, and travelers in the cities of Azle, La Junta, Reno, and Springtown AFTER the construction period. How do you think the widened highway has impacted the following things? (Please give your best estimate of the percentage impact, up or down, on the cities of Azle, La Junta, Reno, and Springtown!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	The time it takes to travel through Azle, La Junta, Reno, and Springtown?											
2.	Number of accidents on Highway 199?											
3.	Traffic volumes on Highway 199?											
4.	Employment in other parts of Azle, La Junta, Reno and Springtown?											
5.	Gross sales volumes for all businesses on Highway 199?											
6.	Gross sales volumes for all other businesses in Azle, La Junta, Reno, and Springtown?											
7.	Property values on Highway 199?											
8.	Property values for all properties in Azle, La Junta, Reno, and Springtown?											
9.	Noise level on Highway 199?											
10.	Air pollution level on Highway 199?											
11.	General appearance of the roadside and area near Highway 199?											
12.	Other effects (state)?____ _____ _____											

Other comments about widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown?

_____

_____

_____

Basic Information About Your Business

To help us to properly analyze the answers given by all the Highway 199 businesses, would you furnish the following information about your business?

1. What primary type is your business?

   Retail sales___Retail service___Professional service___Other (Please describe.)___
   If both retail sales and service, please give:

   percent sales ___ percent service ___

2. Do you own or lease this building?

   Owned___Leased____

3. About how old is this building?

   Number of years___Don't know____

4. How many parking spaces did you have for your customers in 1987 before widening Highway 199 and after 1992, after the highway widening?

   Number before_____ Number after_____

5. How many of your parking spaces were occupied by customers during the busiest hour of an average day in 1987 before highway widening and after 1992, after the highway widening?

   Number before_____ Number after_____

6. What percent of your customers were from out of town in 1987 before highway widening and after 1992, after the highway widening?

   Percent before_____ Percent after_____

7. How many people were employed by your business in 1987 before highway widening and after 1992, after the highway widening?(Please give the average annual number, including working owner and/or manager.)

	1987	After 1992
Full-time	___	___
Part-time	___	___

8. What was the annual gross sales volume of this business in 1987 before the highway widening and after 1992, after the widening?

Before widening volume ($)?

1987 _____

After widening volumes ($)?

1993 _____ 1994 _____

1995 _____ 1996 _____

AND/OR check proper annual gross sales category as follows:

	1987	After 1992
Less than $100,000	___	___
$100,000 to $500,000	___	___
$500,000 to $1,000,000	___	___
More than $1,000,000.	___	___

APPENDIX C-2
SPRINGTOWN AFTER-CONSTRUCTION BUSINESS SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.____

STATE HIGHWAY 199 WIDENING BUSINESS IMPACT SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name or the name of your business will not be used in any way that would identify you.

Highway Widening Impact on Your Business After Construction

1. There are several ways that widening of State Highway 199 could have affected your business AFTER the construction period. How do you think the widened highway has impacted the following things? (Please give your best estimate of the percentage impact, up or down, on your business!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	Number of usable parking spaces?											
2.	Number of customers per day?											
3.	Number of full-time employees?											
4.	Number of part-time employees?											
5.	Gross sales?											
6.	Net profit?											
7.	Property values?											
8.	Noise level?											
9.	Air pollution level?											
10.	Other effects (state)? ___ _____ _____											

2. There are several ways that widening State Highway 199 could have affected the people, businesses, and travelers in the cities of Azle, La Junta, Reno, and Springtown AFTER the construction period. How do you think the widened highway has impacted the following things? (Please give your best estimate of the percentage impact, up or down, on the cities of Azle, La Junta, Reno, and Springtown!)

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	The time it takes to travel through Azle, La Junta, Reno, and Springtown?											
2.	Number of accidents on Highway 199?											
3.	Traffic volumes on Highway 199?											
4.	Employment in other parts of Azle, La Junta, Reno, and Springtown?											
5.	Gross sales volumes for all businesses on Highway 199?											
6.	Gross sales volumes for all other businesses in Azle, La Junta, Reno, and Springtown?											
7.	Property values on Highway 199?											
8.	Property values for all properties in Azle, La Junta, Reno, and Springtown?											
9.	Noise level on Highway 199?											
10.	Air pollution level on Highway 199?											
11.	General appearance of the roadside and area near Highway 199?											
12.	Other effects (state)?____ _____ _____											

Other comments about widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown?

_____

_____

_____

Basic Information About Your Business

To help us to properly analyze the answers given by all the Highway 199 businesses, would you furnish the following information about your business?

1. What primary type is your business?

   Retail sales___Retail service___Professional service___Other (Please describe.)____
   If both retail sales and service, please give:

   percent sales ____ percent service ____

2. Do you own or lease this building?

   Owned___Leased____

3. About how old is this building?

   Number of years____Don't know____

4. How many parking spaces did you have for your customers in 1987 before widening Highway 199 and after 1994, after the highway widening?

   Number before_____ Number after_____

5. How many of your parking spaces were occupied by customers during the busiest hour of an average day in 1987 before highway widening and after 1994, after the highway widening?

   Number before_____ Number after_____

6. What percent of your customers were from out of town in 1987 before highway widening and after 1994, after the highway widening?

   Percent before_____ Percent after_____

7. How many people were employed by your business in 1987 before highway widening and after 1994, after the highway widening?(Please give the average annual number, including working owner and/or manager.)

	1987	After 1994
Full-time	___	___
Part-time	___	___

8. What was the annual gross sales volume of this business in 1987 before the highway widening and after 1994, after the widening?

Before widening volume ($)?

1987 _____

During widening volumes ($)?

1994 _____

1995 _____

1996 _____

AND/OR check proper annual gross sales category as follows:

	1987	After 1994
Less than $100,000	___	___
$100,000 to $500,000	___	___
$500,000 to $1,000,000	___	___
More than $1,000,000.	___	___

APPENDIX D
RESIDENTIAL SURVEY

Date_____

Texas Transportation Institute
Texas A & M University System
College Station, Texas 77843-3135

CONFIDENTIAL
Code No.____

STATE HIGHWAY 199 WIDENING IMPACT RESIDENTIAL SURVEY

Azle, La Junta, Reno, and Springtown, Texas

Purpose of Survey

The Texas Transportation Institute is studying the economic impact of widening State Highway 199 through the cities of Azle, La Junta, Reno, and Springtown for the Texas Department of Transportation (TxDOT). TxDOT needs the findings of an impartial study to help it in planning highway widening projects to maximize positive impacts and minimize negative impacts during and after construction, especially on abutting businesses and residents. TxDOT is particularly interested in obtaining information on those that were displaced. Please take a little time and answer all questions pertaining to you. Also, please return this form to us as soon as possible. ALL ANSWERS TO THE FOLLOWING QUESTIONS WILL BE HELD CONFIDENTIAL. Your name and address will not be used in any way that would identify you.

1. What is your current address?

   _____

2. Did you have to relocate your business due to the widening?

   Yes ____ No ____

   If you had to relocate your residence due to the widening of Highway 199, please give the following addresses:

   address relocated from? _____

   address relocated to? _____

3. How long did you live at each place of residence?

	Months	Years
at old highway address?	_____	_____
at relocation address?	_____	_____
at current address?	_____	_____

4. Did you own or rent each place of residence?

at old highway address? own ___ rent ___

at relocation address? own ___ rent ___

at current address? own ___ rent ___

If you still live at your old address, please answer Questions 5 and 6.

If you have moved to another address abutting Highway 199 between Azle and Springtown, please answer Questions 5, 6, 7, and 8.

If your place of residence was taken for widening Highway 199 and you have moved away from Highway 199, please answer Questions 7, 8, 9, and 10.

5. What effects of the widening of Highway 199 have you and your family experienced and observed? (Please give your best estimate of the percentage impact, up or down, observed by you and your family).

Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1. Number of accidents?											
2. Traffic volume?											
3. Travel time to and from work?											
4. Travel time to buy gas/food?											
5. Desirability as a place to live?											
6. General appearance of area?											
7. Residential property values?											
8. Noise level?											
9. Air pollution level?											
10. Other effects (state)? ___ _____ _____											

6. Other comments:

_____

_____

7. How much of your relocation expenditures were not paid for by TxDOT?

Moving expenses? $_____

Land/lot purchase? $_____

Building cost? $_____

Change in monthly rent (if tenant)? $_____

Other expenses (please list):_____

_____

8. How much of the above expenditures for a replacement residence represents an improvement over the original residence taken for right-of-way? $_____

Purchase of property?

Land and building? $_____

Other improvements? $_____

Change in monthly rent (if tenant)? $_____

Other expenses (please list)?

_____ $_____

_____ $_____

_____ $_____

9. What effects of relocating have you and your family experienced or observed? (Please give your best estimate of the percentage impact, up or down, observed by you and your family).

	Possible Effects	Up 50% to 100%	Up 25% to 49%	Up 10% to 24%	Up 5% to 9%	Up 0% to 4%	No ch	Dwn less th 5%	Dwn 5% to 9%	Dwn 10% to 24%	Dwn 25% to 49%	Dwn more th 50%
1.	Number of accidents?											
2.	Traffic volume?											
3.	Travel time to and from work?											
4.	Travel time to buy gas/food?											
5.	Desirability as a place to live?											
6.	General appearance of area?											
7.	Residential property values?											
8.	Noise level?											
9.	Air pollution level?											
10.	Other effects (state)? ___ _____ _____											

10. Other comments: _____

_____

_____

_____