



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Retail Trade Area Analysis

Rugby North Dakota

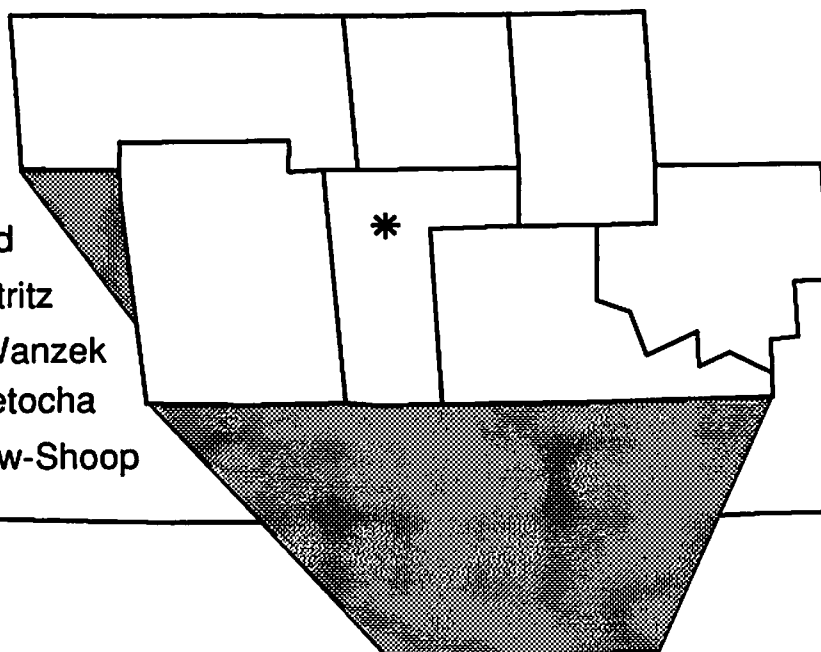
Dean A. Bangsund

F. Larry Leistritz

Janet K. Wanzek

Dale Zetocha

Holly E. Bastow-Shoop



ACKNOWLEDGMENTS

The information in this report was assembled through the combined efforts of a number of people and organizations. First, the authors wish to express appreciation to the Center for Rural Revitalization and the Institute for Business and Industry Development at North Dakota State University for their partial financial support of the study and to Ronald Anderson and Wallace Eide of those organizations, respectively, for their support and encouragement. The authors also wish to thank our former colleagues, Tim Mortensen and Brenda Ekstrom, whose assistance in designing and conducting the survey were invaluable.

The authors also extend sincere appreciation to Sharon Hilber for her editorial and graphics assistance, to Charlene Lucken for her editorial contribution, and to numerous support personnel whose efforts in coding and inputting the survey data made this report possible. Thanks are also extended to our colleagues in the Department of Agricultural Economics for their helpful reviews.

The authors accept sole responsibility for any remaining errors or omissions.

TABLE OF CONTENTS

	<u>Page</u>
List of Tables	iii
List of Figures	iv
Highlights	v
Introduction	1
Purpose	1
Methods and Scope	2
Rugby and Surrounding Area Profile	2
Trade Area Delineation	8
Characteristics of Rugby Area Residents	10
Demographic Profile of Shoppers in Rugby	
Main Trade Area	11
Distance Traveled by Rugby Area Shoppers	12
Area Shoppers' Utilization of Goods and Services	
Provided in Rugby	13
Where Services Are Purchased When Not	
Purchased in Rugby	16
Analysis of Outshoppers in Rugby Main Trade Area	18
Newspaper Subscriptions of Rugby Area Residents	19
Radio Stations of Rugby Area Residents	21
Comparison of Current and Previous Rugby	
Trade Area Boundaries	21
Summary and Conclusions	22
References	24
Appendix	25

List of Tables

<u>Table</u>	<u>Page</u>
1 CITY AND TRADE AREA POPULATION FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 AND 1988 . . .	3
2 POPULATION, AVERAGE ANNUAL EMPLOYMENT, AND PER CAPITA INCOME FOR PIERCE AND SURROUNDING COUNTIES, NORTH DAKOTA, 1980 TO 1989	5
3 DEFLATED TAXABLE SALES AND PURCHASES FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 TO 1989 . . .	6
4 PULL FACTORS FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 TO 1989	7
5 DEMOGRAPHIC PROFILE OF RESPONDENTS IN MAIN TRADE AREA, RUGBY, NORTH DAKOTA, 1989	11
6 AVERAGE DISTANCE TRAVELED BY AREA RESIDENTS WHO PURCHASED 50 PERCENT OR MORE OF SELECTED SERVICES IN RUGBY, NORTH DAKOTA, 1989	12
7 MILEAGE BREAKDOWN FOR AREA SHOPPERS PURCHASING 50 PERCENT OR MORE OF A CONVENIENCE AND SPECIALTY SERVICE IN RUGBY, NORTH DAKOTA, 1989	14
8 RELATIVE IMPORTANCE OF RUGBY TO SHOPPERS PURCHASING SOME GOODS AND SERVICES AND FOR THOSE PURCHASING A MAJORITY OF THEIR GOODS AND SERVICES IN RUGBY, NORTH DAKOTA, 1989	15
9 MOST POPULAR CITIES FOR THE PURCHASE OF GOODS AND SERVICES BY RUGBY MAIN TRADE AREA RESIDENTS WHO DID NOT PURCHASE A MAJORITY OF THE GOOD OR SERVICE IN RUGBY, NORTH DAKOTA, 1989	17
10 DEMOGRAPHIC CHARACTERISTICS FOR PEOPLE IN THE MAIN TRADE AREA WHO PURCHASE LESS THAN 50 PERCENT AND THOSE WHO PURCHASE MORE THAN 50 PERCENT OF THEIR SERVICES IN RUGBY, NORTH DAKOTA, 1989	19
11 NEWSPAPER SUBSCRIPTIONS FOR MAIN AND GREATER TRADE AREA RESPONDENTS, RUGBY, NORTH DAKOTA, 1989	20
12 MOST POPULAR RADIO STATIONS FOR RESPONDENTS IN THE MAIN TRADE AREA, RUGBY, NORTH DAKOTA, 1989	21

List of Figures

<u>Figure</u>	<u>Page</u>
1 Main and Greater Trade Areas for Rugby, North Dakota, 1989	10

HIGHLIGHTS

This report is intended to provide an indepth trade area analysis of Rugby, North Dakota. Specific analyses included determining Rugby's main and greater trade areas, identifying the demographic profile of Rugby shoppers, examining important and less important services for patron shoppers of Rugby, identifying neighboring cities that area shoppers patronize, determining distances area shoppers traveled to Rugby, and listing popular newspapers and radio stations among area residents.

Current trade area information for Rugby was obtained from a statewide trade area survey conducted by the Department of Agricultural Economics at North Dakota State University in 1989.

Recent trends (1980 to 1989) in Rugby population, retail sales, per capita income, and pull factors, and in Pierce County population and employment were identified and discussed. Rugby's population, trade area population, retail sales, and pull factors along with Pierce County population and average annual employment have all decreased throughout the 1980s. Although most demographic and economic measurements have decreased, Rugby has fared as well as other North Dakota cities with similar populations, and has fared favorably compared to smaller competing trade centers. The economic situation found in Rugby and Pierce County are somewhat typical of the problems found in rural North Dakota communities in the 1980s.

Rugby's trade areas were broken down into main and greater trade areas. A main trade area (MTA) was defined as an area where the majority of township residents purchase a majority of selected goods and services in one city. A greater trade area (GTA) was defined as the area beyond the MTA where some township residents purchase some selected goods and services in one city. Rugby's MTA decreased in size by one township, compared to MTA boundaries determined in 1973.

The typical household for survey respondents appears to be a middle-aged married couple, who have completed high school, have few children at home, primarily are employed in agriculture and professional/technical professions, and have resided in the area a large portion of their lives.

Main trade area residents traveled an average of 17.7 and 17.2 miles to Rugby to purchase selected convenience and specialty goods and services, respectively. Nearly half (45.5 percent) of all respondents who purchased 50 percent or more of convenience and specialty goods in Rugby traveled over 25 miles to purchase the item.

Rugby appears to be capturing most of the potential market for most goods and services on the survey questionnaire; however, Rugby could capture more of the available market for clothing items, electronic goods, and selected medical services.

Minot, Harvey, Devils Lake, Balta, and Rolette were the most popular cities for the purchase of nonagricultural goods and services by Rugby MTA residents who did not purchase a majority of the good or service in Rugby. Wolford, York, Towner, and Leeds were popular for purchasing agricultural goods and services.

Outshopping analysis revealed no substantial demographic or socioeconomic differences between Rugby MTA residents purchasing 50 percent or more and those purchasing less than 50 percent of selected goods and services in Rugby. Slight differences between groups were evident in miles traveled and average income.

The Forum (Fargo) and the Minot Daily News were the most popular daily newspapers for both Rugby MTA and GTA residents. Pierce County Tribune and the Benson County Farmers Press were the most popular weekly newspapers for Rugby MTA and GTA residents, respectively. The most popular radio stations for Rugby MTA residents included KZZJ of Rugby, KFYZ of Bismarck, and KZZY of Rugby.

Although economic times have been difficult, Rugby appears to be doing a good job of retaining most of its past trade area and remaining an important trade center in north central North Dakota.

RETAIL TRADE AREA ANALYSIS: RUGBY, NORTH DAKOTA

Dean A. Bangsund, F. Larry Leistritz, Janet K. Wanzek,
Dale Zetocha, and Holly E. Bastow-Shoop*

INTRODUCTION

North Dakota has witnessed considerable demographic and economic change in the 1980s. Rural population in North Dakota has continued to decline, due, in part, to instate migration to larger cities and outmigration of state residents. The economic base for many of North Dakota's smaller cities has continued to decline due to economic stress in both the farm sector and the energy industries. The combination of rural economic stress and reduced population has had significant impacts on retail trade for most geographic areas of North Dakota.

In addition to demographic and economic influences on retail activity in North Dakota, relative income levels, improved transportation, and changes in consumer tastes and preferences contribute to changes in retail trade patterns. The number and severity of factors influencing retail activity in North Dakota during the 1980s make trade area information crucial to concerned businesses and policymakers interested in developing effective strategies to cope with changing economic conditions. Dissemination of trade area information to rural cities and towns can help communities meet the challenges of the 1990s.

Purpose

The Department of Agricultural Economics at North Dakota State University has prepared two levels of trade area reports. An overview report was prepared discussing previous trade area work, outlining the methods and procedures used to determine trade areas for all cities in North Dakota, determining trade areas for the 11 largest North Dakota cities, and comparing purchases of services by patrons of different sized trade centers within the state (Bangsund et al. 1991). Other reports have been prepared to disseminate specific trade area information for

*Research assistant, professor, and research assistant, respectively, Department of Agricultural Economics; extension associate, North Dakota State University Extension Service; and associate professor, Department of Apparel, Textiles, and Interior Design; North Dakota State University, Fargo.

individual cities.¹ The purpose of this report is to provide specific information about the Rugby trade area.

This report will describe Rugby's main and greater trade areas, provide information on the demographic characteristics of Rugby area shoppers, and identify essential and nonessential services Rugby businesses provide.

Methods and Scope

The data for this report were obtained from a statewide trade area survey which the Department of Agricultural Economics at NDSU conducted in 1989. The NDSU Extension Service and the North Dakota Agricultural Experiment Station, through their respective Rural Development Center projects, partially financed the study.

The survey was designed to obtain information about geographic shopping preferences for 37 nonagricultural and 12 agricultural goods and services and selected demographic characteristics of those responding. Although the survey provided information on all North Dakota cities and towns where people purchase goods and services, material presented in this report primarily covers the Rugby trade area.

This report is organized into four sections: (1) population and other demographic information about Rugby, (2) trade area delineation criteria and boundaries, (3) trade patterns of Rugby area shoppers, and (4) summary and conclusions.

RUGBY AND SURROUNDING AREA PROFILE

Understanding changes in population and economic activity is helpful to businesses and community planners. Much of the prosperity of rural trade areas hinges on the population base. The following briefly highlights the patterns and trends from 1980 to 1989 in Rugby population, retail sales, market share, per capita income, pull factors, and Pierce County population and employment.

Population figures presented in this section are based on the 1980 Decennial Census count, with population estimates for years 1981 through 1989 reflecting adjustments to the 1980 Census

¹Copies of individual city reports can be obtained from the Department of Agricultural Economics, North Dakota State University, Fargo, North Dakota, 58105, (701) 237-7441.

count. Population figures from the 1990 Decennial Census count were not available for use in this report. Trade area information in this section is based on trade area boundaries which were determined in the 1970s. Although population and trade area information in this section was not adjusted for current findings (i.e., 1990 Census numbers and new trade area boundaries), the economic information used was current and the general condition of rural communities can be described using this information.

Rugby's population declined about 9.5 percent from 1980 to 1988 (Table 1). Of the North Dakota cities in the population range 2,500 to 10,000, only three had population increases from 1980 to 1988. If Beulah, whose population increased almost 90 percent, was removed from the group, the size category would have

TABLE 1. CITY AND TRADE AREA POPULATION FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 AND 1988

City	County	City Population		Percent Change 1980-88	Trade Area Population ^a		Percent Change 1980-88
		1980	1988		1980	1988	
Population over 10,000							
Group Total		253,628	274,280	8.14	--	--	--
Population 2,500 to 10,000							
Beulah	Mercer	2,908	5,520	89.82	4,720	7,525	59.43
Bottineau	Bottineau	2,829	2,700	-4.56	6,902	6,627	-3.98
Carrington	Foster	2,641	2,440	-7.61	5,782	5,240	-9.37
Devils Lake	Ramsey	7,442	7,970	7.09	18,258	17,963	-1.62
Grafton	Walsh	5,293	4,770	-9.88	11,374	11,080	-2.58
Harvey	Wells	2,527	2,460	-2.65	6,463	5,957	-7.83
Rugby	Pierce	3,335	3,020	-9.45	6,723	5,882	-12.51
Valley City	Barnes	7,774	7,060	-9.18	13,959	13,120	-6.01
Wahpeton	Richland	9,064	9,710	7.13	12,240	12,820	4.74
----- Group Total		43,813	45,650	4.19	9,602	9,579	2.52
Population 1,500 to 2,500							
Group Total		39,095	37,540	-3.98	--	--	--
Population 1,000 to 1,500							
Cando	Towner	1,496	1,680	12.30	3,416	3,330	-2.52
Group Total		29,622	27,540	-7.03	--	--	--
Population 500 to 1,000							
Leeds	Benson	678	600	-11.50	1,111	930	-16.29
Rolette	Rolette	667	610	-8.55	1,728	1,870	8.22
Towner	McHenry	867	680	-21.57	1,885	1,750	-7.16
Group Total		32,154	31,200	-2.97	--	--	--
Population 200 to 500							
Group Total		28,746	27,373	-4.78	--	--	--
All Population Categories							
State Total		427,058	443,583	3.87	--	--	--

^aTrade areas were based on previous work by North Dakota State University Extension Service.

SOURCE: Leistritz et al. 1990.

negative population growth. Rugby's trade area population decreased about 12.5 percent from 1980 to 1988, the largest decrease for any town in the category. The population of Rugby's competing trade centers and their trade area populations (those cities with populations less than 2,500) also decreased, except for Cando and the Rolette trade area.

Since Rugby's trade area covers parts of counties other than Pierce County, population, average annual employment, and per capita income have been identified for surrounding counties (Table 2). Population in Pierce County decreased (1980 to 1988) substantially more than in surrounding counties, although they too lost population during the same time period, except for Rolette County.

Average annual employment in Pierce County decreased 14 percent from 1980 to 1988. Employment in most counties surrounding Pierce declined substantially. Although population and employment declined in Pierce County during 1980 to 1988, real per capita income (i.e., adjusted for inflation) actually increased from 1979 to 1987 while per capita income decreased in all but one of the surrounding counties.

Rugby's deflated taxable sales (i.e., adjusted for inflation) decreased from 1980 to 1989; however, deflated taxable sales increased from 1987 to 1989 (Table 3). Rugby had the largest increase (6.39 percent) in taxable sales from 1987 to 1989 of any city in the population range 2,500 to 10,000. Although Rugby fared favorably compared to other cities in the same population category, average taxable sales for the group decreased 5.27 percent (1987 to 1989). Competing cities also suffered large decreases in their adjusted taxable sales for the same time periods. Statewide, taxable sales decreased 17.77 and 0.24 percent from 1980 to 1989 and 1987 to 1989, respectively.

Pull factors measure a community's success in capturing the potential purchasing power of residents in its trade area. Pull factors greater than 1.0 mean a community's retail sales are greater than the purchasing power of its trade area, suggesting the community may be "pulling" customers from outside its normal trade area. Conversely, if a pull factor is less than 1.0, the community is not capturing its share of the purchasing power in its trade area.

TABLE 2. POPULATION, AVERAGE ANNUAL EMPLOYMENT, AND PER CAPITA INCOME FOR PIERCE AND SURROUNDING COUNTIES, NORTH DAKOTA, 1980 TO 1989

County	1980	1982	1984	1986	1988	1989	<u>Percent Change</u> <u>1980-88/89</u>
----- Population -----							
Pierce	6,166	6,100	6,000	5,600	5,400	---	-12.42
Surrounding Counties							
McHenry	7,858	7,600	7,700	7,500	7,200	---	-8.37
Bottineau	9,239	9,300	9,300	8,800	8,700	---	-5.83
Rolette	12,177	12,500	13,500	12,300	12,200	---	0.19
Towner	4,052	4,100	4,200	3,900	3,900	---	-3.75
Benson	7,944	7,800	7,800	7,600	7,400	---	-6.85
Wells	6,979	6,800	6,900	6,500	6,400	---	-8.30
Sheridan	2,819	3,000	2,700	2,600	2,600	---	-7.77
North Dakota	652,717	672,000	687,000	679,000	667,000	---	2.19
----- Average Annual Employment ^a -----							
Pierce	2,847	2,885	2,585	2,525	2,470	2,448	-14.01
Surrounding Counties							
McHenry	2,901	2,975	2,717	2,588	2,331	2,313	-20.27
Bottineau	3,788	3,999	3,653	3,512	3,310	3,221	-14.97
Rolette	4,090	4,239	4,396	4,561	3,875	3,964	-3.08
Towner	1,968	2,022	1,744	1,713	1,718	1,704	-13.41
Benson	2,879	2,974	3,041	3,108	3,205	2,782	-3.37
Wells	3,146	3,160	2,898	2,830	2,675	2,640	-16.08
Sheridan	1,186	1,184	1,226	1,156	1,108	1,114	-6.07
North Dakota	228,002	297,002	310,953	313,001	316,000	317,000	10.07
----- Per Capita Income ^b -----							
	<u>1979^c</u>		<u>1987</u>		<u>Percent Change</u> <u>1979 to 1987</u>		
Pierce	\$8,260		\$8,472		2.6		
Surrounding Counties							
McHenry	7,744		7,199		-7.0		
Bottineau	9,020		9,101		0.9		
Rolette	6,489		6,117		-5.7		
Towner	9,720		9,082		-6.6		
Benson	7,758		7,296		-6.0		
Wells	8,637		8,622		-0.2		
Sheridan	7,723		7,425		-3.9		
North Dakota	10,041		9,641		-4.0		

^aJob Service North Dakota. Various Issues. North Dakota Labor Force by County, by Region. Bismarck.

^bU.S. Department of Commerce, Bureau of the Census, "Current Population Reports," Series P-26 (Spring 1990).

^cReal Dollars, 1979 dollars inflated to 1987 dollars using Consumer Price Index inflators (U.S. Department of Labor, Bureau of Labor Statistics).

SOURCE: Leistritz et al. 1990.

TABLE 3. DEFLATED TAXABLE SALES AND PURCHASES FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 TO 1989

City	Deflated Taxable Sales and Purchases (1989 Dollars)			Percent Change	
	1980	1987	1989	1980-89	1987-89
----- dollars -----					
Population over 10,000					
Group Total	2,578,781,160	2,337,648,605	2,396,999,678	-7.05	2.54
Population 2,500 to 10,000					
Beulah	21,109,496	13,690,513	13,789,391	-34.68	0.72
Bottineau	35,721,366	20,603,595	18,404,403	-48.48	-10.67
Carrington	31,294,111	20,160,691	19,453,390	-37.84	-3.51
Devils Lake	82,959,489	75,131,207	71,490,321	-13.83	-4.85
Grafton	49,064,196	44,218,845	42,582,528	-13.21	-3.70
Harvey	26,336,412	18,606,611	15,490,268	-41.18	-16.75
Rugby	30,349,378	22,029,173	23,437,887	-22.77	6.39
Valley City	64,593,431	47,077,069	41,925,021	-35.09	-10.94
Wahpeton	57,303,733	53,978,847	52,301,959	-8.73	-3.11
Group Total	398,731,612	315,496,552	298,875,168	-25.04	-5.27
Population 1,500 to 2,500					
Group Total	415,612,668	251,583,986	226,276,758	-45.56	-10.06
Population 1,000 to 1,500					
Cando	15,032,301	7,930,244	6,214,370	-58.66	-21.64
Group Total	222,752,746	141,859,953	130,721,134	-41.32	-7.85
Population 500 to 1,000					
Leeds	5,128,376	2,889,190	2,064,052	-59.75	-28.56
Rolette	5,668,616	2,579,671	2,271,592	-59.93	-11.94
Towner	4,358,028	2,527,078	2,446,935	-43.85	-3.17
Group Total	197,005,522	124,426,751	123,454,776	-37.33	-0.78
Population 200 to 500					
Group Total	150,696,574	96,258,478	83,084,913	-44.87	-13.69
All Population Categories					
State Total	3,963,580,282	3,267,274,325	3,259,412,427	-17.77	-0.24

SOURCE: Leistritz et al. 1990.

Rugby's pull factor decreased almost 20 percent from 1980 to 1989 (Table 4). Only Devils Lake and Wahpeton, in the population group 2,500 to 10,000, increased their pull factor from 1980 to 1989. Rugby's pull factor, however, is above the group average, indicating the community captures a greater percentage of its trade area purchasing power than most of the cities with similar population. Pull factors for competing cities decreased substantially from 1980 to 1989. Pull factors in 1989 for cities competing with Rugby were about half of Rugby's pull factor, suggesting Rugby does a better job of capturing its available market than do neighboring cities.

TABLE 4. PULL FACTORS FOR RUGBY AND SELECTED CITIES, NORTH DAKOTA, 1980 TO 1989

City	Pull Factor			Percent Change		
	1980	1987	1989	1980-87	1980-89	1987-89
Population over 10,000 Group Average	1.12	0.96	1.01	-14.20	-9.63	5.32
Population 2,500 to 10,000						
Beulah	0.63	0.33	0.39	-47.36	-37.67	18.41
Bottineau	0.90	0.64	0.53	-28.78	-41.10	-17.31
Carrington	0.88	0.80	0.68	-8.72	-23.02	-15.67
Devils Lake	0.73	0.86	0.80	16.91	9.34	-6.48
Grafton	0.84	0.86	0.70	2.69	-16.60	-18.78
Harvey	0.74	0.67	0.47	-9.79	-36.86	-30.01
Rugby	0.88	0.80	0.70	-9.32	-19.96	-11.73
Valley City	0.77	0.78	0.59	2.04	-23.59	-25.13
Wahpeton	0.76	0.79	0.86	3.64	12.61	8.66
-----	----	----	----	-----	-----	-----
Group Average	0.79	0.73	0.64	-8.40	-19.82	-12.47
Population 1,500 to 2,500 Group Average	0.89	0.65	0.52	-26.93	-42.26	-20.99
Population 1,000 to 1,500						
Cando	0.72	0.49	0.35	-32.84	-51.17	-27.29
Group Average	0.65	0.53	0.43	-18.35	-34.55	-19.84
Population 500 to 1,000						
Leeds	0.96	0.70	0.34	-26.88	-64.69	-51.72
Rolette	0.82	0.46	0.16	-43.60	-81.13	-66.54
Towner	0.47	0.37	0.21	-21.14	-55.68	-43.79
Group Average	0.60	0.49	0.42	-18.94	-29.78	-13.38
Population 200 to 500 Group Average	0.41	0.35	0.28	-14.30	-30.65	-19.07

SOURCE: Leistritz et al. 1990.

Both city and county populations have declined in the geographic area near Rugby. Only Rolette County's population increased from 1980 to 1988. Deflated taxable sales in Rugby and average annual employment in Pierce County have decreased substantially in the 1980s. Although real per capita income in Pierce County increased from 1979 to 1987, Rugby's pull factor has continued to decrease (1980 to 1989). Changes in economic activity and population for Rugby have been similar to other North Dakota cities in the 2,500 to 10,000 population range, suggesting Rugby is no worse off than other cities of comparable size.

Although Rugby suffers from decreased economic activity and population declines, the city is doing better compared to its smaller competing cities. Smaller cities and towns competing with Rugby also face tough economic pressures; however, they appear to be suffering more economic decline than is evident in

larger cities. Economic pressures and population declines found in Rugby and Pierce County are somewhat typical of the economic problems found in rural North Dakota communities in the 1980s.

TRADE AREA DELINEATION

A trade area can be loosely defined as the geographic area from which a business or city draws its customers. Determining a trade area depends heavily on the city size, location of the city with respect to other trade centers, and the criteria used to distinguish the trade area boundaries. Trade area criteria can vary according to trade center classification and type of trade area, and these trade areas can be broken down into primary and secondary trade areas.

Generally, primary (main) trade areas (MTAs) are those geographic regions where a trade center draws a significant portion of its retail activity. Secondary (greater) trade areas (GTAs) are geographic areas outside of the primary trade area where the trade center still extends some retail influence; however, only limited retail or service activity is generated from this region.

A primary trade area (main) was defined as an area where the majority of the people purchase a majority of their goods and services at one location. A secondary trade area (greater) was defined as an area where some of the people purchase some of their goods and services at one location.

Two major criteria were used in determining trade areas in North Dakota. The first criteria was to classify each trade center according to the level of retail activity and use the trade center classification to determine a mix of goods and services, and the second criteria determined how townships were included in the main trade area and greater trade area (Bangsund et al. 1991). The scope of this report does not permit the detailed discussion of all the procedures involved in determining a city's main and greater trade area; however, a brief synopsis is included of the trade area criteria used for Rugby.

North Dakota cities were put in seven size classifications, and the types of services expected to be provided by each size classification were outlined (Bangsund et al. 1991). Each size of trade center was expected to provide a different number of goods and services and different amounts of similar services across trade center sizes. Thus, trade area boundaries were defined by using a mix of goods and services most appropriately provided by a city of that size.

Rugby was classified as a partial shopping center based on average retail sales from 1987 to 1989. The mix included some convenience, specialty, and agricultural goods and services. Convenience goods and services are those that typically have a small unit value, are frequently purchased with a minimum of effort, and are purchased soon after the idea of the purchase enters the buyer's mind. Specialty goods are those nonstandardized goods and services that typically have a large unit value, are purchased only after comparing price, quality, features, and type among stores, and customers are willing to travel and exert more energy to secure the good or service than convenience items.

Convenience Goods and Services

Banking and savings	Groceries
Eating places	Hardware
Gas and diesel service	Prescription drugs

Specialty Goods and Services

Auto repair	Legal services
Beautician	Men's clothing
Furniture	Radios, TVs, VCRs
Hospital	Sporting goods

Agricultural Goods and Services

Farm machinery	Farm supplies
----------------	---------------

The main trade area for Rugby was defined by townships where 50 percent or more of the residents purchased 50 percent or more of the selected mix of goods and services in Rugby. The greater trade area was defined by townships where 10 percent or more of the residents purchased at least 10 percent of a selected mix of goods and services in Rugby.

Several problems arise when trying to define trade areas using survey information. The most common problems were lack of usable responses from some townships and unclear distinction of purchase behavior in some townships, i.e., respondents diversified their shopping equally among several trade centers. Bangsund et al. (1991) discussed the procedures and criteria for handling townships which did not clearly meet the requirements for the main and greater trade areas.

Rugby's MTA captures a relatively even distribution of townships around the city; however, the GTA reflects the influences of Harvey and Devils Lake (Figure 1). The Rugby GTA has more influence on the townships located to the north and west of town. Rugby's ability to attract customers from the east and south appears limited due to competition from other trade centers, primarily Harvey and Devils Lake.

CHARACTERISTICS OF RUGBY AREA RESIDENTS

Business people and community leaders usually are interested in the characteristics of local shoppers and shopping patterns. The characteristics of Rugby shoppers were analyzed, using 164 survey responses from the Rugby MTA. Other analyses included examination of important and less important services for patron shoppers of Rugby, identification of neighboring cities area shoppers patronize, determination of distances area shoppers traveled to Rugby, and listing popular newspapers and radio stations among area residents.

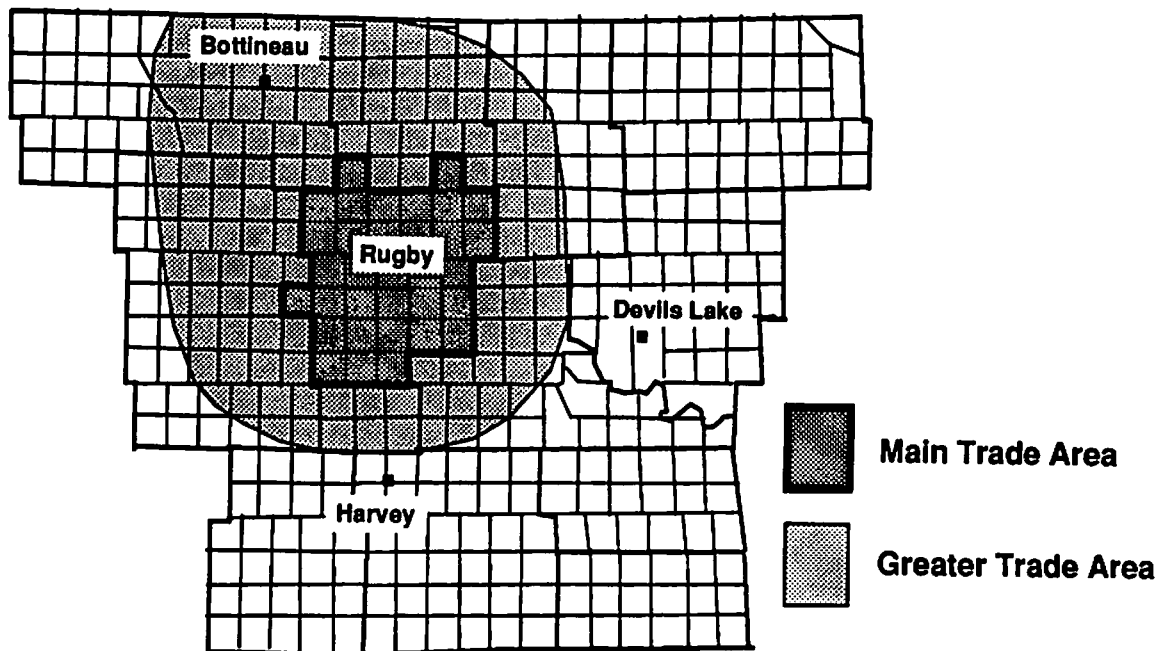


Figure 1. Main and Greater Trade Areas for Rugby, North Dakota, 1989

Demographic Profile of Shoppers in Rugby Main Trade Area

Demographic characteristics of the survey respondents for the Rugby MTA were identified (Table 5). The typical household for survey respondents appears to be a middle-aged married couple who have completed high school, have few children at home, are primarily employed in agriculture and professional/technical professions, and have resided in the area a large portion of their lives.

TABLE 5. DEMOGRAPHIC PROFILE OF RESPONDENTS IN MAIN TRADE AREA, RUGBY, NORTH DAKOTA, 1989

Demographic Characteristic	Average of Survey Responses	
Age (Years)	51.8	
Education (Years)	12.4	
Lived in County (Years)	36.7	
Household Size (People)	2.97	
Average Household Income	\$22,570	
Occupation	Respondent	Spouse
	---%---	---%---
Farming	43.8	45.7
Retired	17.1	7.6
Professional	13.0	13.3
Tech/Sales/Admin	13.0	13.3
Service Jobs	6.2	3.8
Craft/Repair	2.7	3.8
Housewife	2.7	2.9
Other	1.4	3.8
Equipment Operator	---	5.7
Martial Status	--- % ---	
Single	6.2	
Separated/Divorced	8.0	
Married	77.2	
Widowed	8.6	
Male	56.7	
Female	43.3	

Distance Traveled by Rugby Area Shoppers

Average distances that area residents traveled to Rugby were determined for each good or service in the 16-item goods and services mix (Table 6). Respondents (who purchased 50 percent or more, regardless of residence) traveled more miles to purchase specialty goods and services in Rugby than to purchase

TABLE 6. AVERAGE DISTANCE TRAVELED BY AREA RESIDENTS WHO PURCHASED 50 PERCENT OR MORE OF SELECTED SERVICES IN RUGBY, NORTH DAKOTA, 1989^a

<u>All Respondents Purchasing 50 Percent or More of the Service in Rugby</u>			
<u>Convenience Items</u>		<u>Specialty Items</u>	
<u>Goods and Services</u>	<u>Average Miles Traveled</u>	<u>Goods and Services</u>	<u>Average Miles Traveled</u>
Gas & Diesel Stations	16.2	Auto Repair	20.5
Groceries	19.0	Beautician	18.2
Eating Places	19.5	Radios, TVs, VCRs	20.4
Banking and Savings	20.2	Sporting Goods	18.2
Hardware	20.2	Men's Clothing	21.9
Prescription Drugs	22.4	Hospital	25.6
		Legal Services	19.7
		Furniture	23.0
Average	<u>19.8</u>	Average	<u>21.7</u>
<u>MTA Respondents Only Who Purchase 50 Percent or More of the Service in Rugby</u>			
<u>Convenience Items</u>		<u>Specialty Items</u>	
<u>Goods and Services</u>	<u>Average Miles Traveled</u>	<u>Goods and Services</u>	<u>Average Miles Traveled</u>
Gas & Diesel Stations	15.3	Radios, TVs, VCRs	16.3
Eating Places	17.5	Auto Repair	17.3
Prescription Drugs	18.4	Furniture	17.2
Groceries	18.1	Beautician	16.2
Banking and Savings	18.2	Legal Services	17.2
Hardware	18.3	Hospital	17.4
		Men's Clothing	18.5
		Sporting Goods	15.6
Average	<u>17.7</u>	Average	<u>17.2</u>

^aOne-way distance to Rugby only.

convenience goods and services. Respondents who were MTA residents and who purchased 50 percent or more traveled slightly farther (0.5 miles) to purchase convenience goods and services in Rugby than to purchase specialty goods and services. Distances were determined by averaging respondents' estimated miles between Rugby and their home residence. Rugby residents and any respondents who lived one mile or less from Rugby were not included in the analysis. Once the average distance was determined for each township, the number of respondents purchasing 50 percent or more of the 16 items in the service mix in Rugby was multiplied by the average distance to determine total miles of travel for that township (for the specific good or service).

Townships included in the distance analysis were not limited to those in the MTA; instead distances traveled were included for anyone (living in surrounding counties) who purchased 50 percent or more of the selected good or service in Rugby. Total miles of travel were summed for all townships for that good or service and divided by the total number of respondents who purchased 50 percent or more of that item in Rugby. The average distance traveled to Rugby to purchase convenience goods and services was less than that traveled for specialty goods and services for all respondents (regardless of residence location). The average distance traveled to purchase convenience goods and services was more than that traveled for specialty goods and services for respondents in the MTA who purchased 50 percent or more of the item in Rugby. For those respondents living in the MTA, the average distance traveled for both types of goods and services was nearly identical.

Distance traveled by type of good or service (convenience and specialty) was broken down into distance categories. Most (45.5 percent) respondents (regardless of residence location) who purchase 50 percent or more of a convenience and specialty good or service travel over 25 miles to purchase the item in Rugby (Table 7). For those living in the MTA, both the number of respondents per distance category and most common distance traveled were similar.

Area Shoppers' Utilization of Goods and Services Provided in Rugby

The importance of Rugby as a trade center for those who shop in Rugby and the ability of Rugby to capture the MTA market for selected goods and services were determined (Table 8). The importance of shopping in Rugby was determined by examining the number of respondents who purchased some of their goods and services in Rugby and comparing those responses to the number who

TABLE 7. MILEAGE BREAKDOWN FOR AREA SHOPPERS PURCHASING 50 PERCENT OR MORE OF A CONVENIENCE AND SPECIALTY SERVICE IN RUGBY, NORTH DAKOTA, 1989

<u>All Respondents Purchasing 50 Percent or More of a Service in Rugby</u>				
Distance (Miles) ^a	<u>Convenience Goods</u>		<u>Specialty Goods</u>	
	Number	Percent	Number	Percent
1 to 5	9	5.1	9	3.6
6 to 10	15	8.6	15	6.1
11 to 15	20	11.4	19	7.7
16 to 20	27	15.4	42	17.0
21 to 25	34	19.4	40	16.2
over 25	70	40.1	122	49.4

<u>MTA Respondents Only Who Purchase 50 Percent or More of the Service in Rugby</u>				
Distance (Miles) ^a	<u>Convenience Goods</u>		<u>Specialty Goods</u>	
	Number	Percent	Number	Percent
1 to 5	8	8.2	8	8.3
6 to 10	15	15.3	15	15.6
11 to 15	17	17.3	16	16.7
16 to 20	19	19.4	18	18.8
21 to 25	21	21.4	20	20.8
over 25	18	18.4	19	19.8

^aThose living in Rugby or traveling less than one mile to Rugby were not included in the analysis.

purchased a majority of their goods and services in Rugby. A high percentage meant if respondents shopped in Rugby, they likely would purchase a majority of those goods and services in Rugby. A low percentage meant that, although some of the goods and services were purchased in Rugby, the majority of the goods and services was purchased elsewhere.

Goods and services that appear to be most utilized by those shopping in Rugby include accounting, computers, florist, barber, mortician, heating fuel and propane, family doctor, hardware, building supplies, banking and saving, dentist, and legal services (services where 95 percent of those buying the service in Rugby purchase a majority of the service in Rugby). The goods and services that people are less likely to purchase a majority of in Rugby include shoes, teenage clothing, women's clothing and coats, sporting goods, alcohol drinking places, radios-TVs-VCRs, veterinary services, and grain marketing.

TABLE 8. RELATIVE IMPORTANCE OF RUGBY TO SHOPPERS PURCHASING SOME GOODS AND SERVICES AND FOR THOSE PURCHASING A MAJORITY OF THEIR GOODS AND SERVICES IN RUGBY, NORTH DAKOTA, 1989

Goods and Services	Responses in Rugby Main Trade Area					
	Purchase the Goods & Services Somewhere	Purchase Some of the Goods & Services in Rugby		Purchase Majority of the Goods & Services in Rugby		Measure of Market Capture
		No.	% ^a	No.	% ^b	
Accounting Services	118	96	81.4	96	100.0	81.4
Computers	25	14	56.0	14	100.0	56.0
Florist	138	132	95.7	130	98.5	94.2
Barber	124	108	87.1	106	98.1	85.5
Mortician	103	93	90.3	91	97.8	88.3
Heating Fuel/Propane	141	108	76.6	105	97.2	74.5
Family Doctor	158	143	90.5	139	97.2	88.0
Hardware	152	149	98.0	144	96.6	94.7
Building Supplies	145	139	95.9	134	96.4	92.4
Banking and Savings	161	152	94.4	146	96.1	90.7
Dentist	150	125	83.3	120	96.0	80.0
Legal Service	127	106	83.5	101	95.3	79.5
Plumber	122	110	90.2	104	94.5	85.2
Hospital	153	138	90.2	130	94.2	85.0
Nursery (Plants)	132	118	89.4	111	94.1	84.1
Groceries	164	160	97.6	150	93.8	91.5
Optometrist	150	111	74.0	104	93.7	69.3
Appliance/Elec Repair	134	122	91.0	114	93.4	85.1
Auto Sales	151	130	86.1	121	93.1	80.1
Auto Repair	151	141	93.4	130	92.2	86.1
Beautician	130	115	88.5	106	92.2	81.5
Prescription Drugs	158	149	94.3	137	91.9	86.7
Eating Places	148	146	98.6	134	91.8	90.5
Gas/Diesel Service	152	137	90.1	125	91.2	82.2
Chiropractor	76	59	77.6	53	89.8	69.7
Major Appliances	146	126	86.3	113	89.7	77.4
Furniture	136	117	86.0	100	85.5	73.5
Jewelry	112	103	92.0	88	85.4	78.6
Veterinarian (Sm Animals)	88	59	67.0	50	84.7	56.8
Men's Clothing	147	128	87.1	102	79.7	69.4
Radios, TVs, VCRs	138	120	87.0	94	78.3	68.1
Drinking Places	91	83	91.2	65	78.3	71.4
Sporting Goods	120	111	92.5	86	77.5	71.7
Women's Coats	127	96	75.6	68	70.8	53.5
Women's Clothing	146	127	87.0	87	68.5	59.6
Teenage Clothing	58	52	89.7	33	63.5	56.9
Shoes	146	117	80.1	72	61.5	49.3
----- Agricultural Goods and Services -----						
Commercial Feeds	56	49	87.5	46	93.9	82.1
Crop Consultants	35	32	91.4	30	93.8	85.7
Farm Machinery	72	69	95.8	63	91.3	87.5
Crop Seeds	72	52	72.2	47	90.4	65.3
Livestock Marketing	55	50	90.9	45	90.0	81.8
Farm Mach Repair/Parts	81	77	95.1	68	88.3	84.0
Other Farm Supplies	62	57	91.9	49	86.0	79.0
Other Farm Chemicals	73	48	65.8	40	83.3	54.8
Fertilizer	67	40	59.7	33	82.5	49.3
Farm Fuel & Lubricant	80	53	66.2	41	77.4	51.2
Veterinary Services	57	33	57.9	24	72.7	42.1
Grain Marketing	76	54	71.1	38	70.4	50.0

^aDetermined by dividing number of responses of those who purchase some of the service in Rugby by the number who purchase some of the service anywhere. Number indicates how many buyers of the service are willing to purchase some of the service in Rugby.

^bDetermined by dividing number of responses of those who purchase majority of the service in Rugby by the number who purchase some of the service in Rugby. Number is proxy for relative importance of Rugby as a provider of the service for those purchasing the item.

^cDetermined by dividing number of responses who purchase majority of the service in Rugby by the number who purchase some of the service anywhere. Number is proxy for ability of Rugby to capture potential market for that service.

The ability of Rugby to capture the potential market within the MTA was determined by comparing those who purchase the good or service (not necessarily in Rugby) to the number of respondents who purchase a majority of the good or service in Rugby. A high percentage meant that Rugby captures a large amount of the potential market for the good or service. A low percentage meant that Rugby does not capture much of the market for that good or service.

Goods and services for which Rugby is capturing a large amount of the potential market (90 percent or more) within the MTA include hardware, florist, building supplies, groceries, banking and savings, and eating places. Goods and services for which Rugby does not capture the existing market (less than 70 percent) include shoes, women's coats, computers, veterinarian (small animals), teenage clothing, women's clothing, radios-TVs-VCRs, optometrist, men's clothing, chiropractor, crop services, other farm chemicals, fertilizer, farm fuel and lubrication, and veterinary services (livestock).

Goods and services that are important to Rugby shoppers and those for which Rugby is capturing a large percentage of the market include florist, banking and saving, hardware, mortician, and building supplies. Relatively underutilized services (those for which Rugby is not capturing much of the market) include shoes, women's clothing and coats, teenage clothing, computers, veterinary services, fertilizer, farm fuel and lubricant, and grain marketing. Computers, heating fuel and propane, and optometrist services are important to shoppers in Rugby, but few of the potential buyers purchase a majority of those goods and services in Rugby. This suggests some loyalty for those shopping in Rugby yet a good portion of the market has not been captured. Most of the goods and services for which Rugby is capturing much of the potential market are also important to Rugby shoppers, suggesting that most of the potential shoppers (within the MTA) feel Rugby is an important source for most of their services.

Where Services Are Purchased When Not Purchased In Rugby

For most of the goods and services listed in the survey, some respondents did not purchase any of the good or service in Rugby or purchased more of the good or service in other cities. For people living in the Rugby MTA and not purchasing a majority of the services in Rugby, the cities where the majority of those services were purchased were identified (Table 9). Minot was the most popular choice for services purchased outside of the Rugby

TABLE 9. MOST POPULAR CITIES FOR THE PURCHASE OF GOODS AND SERVICES BY RUGBY MAIN TRADE AREA RESIDENTS WHO DID NOT PURCHASE A MAJORITY OF THE GOOD OR SERVICE IN RUGBY, NORTH DAKOTA, 1989

Goods and Services	Most Popular Cities	Responses Per City	Percent Purchased	Goods and Services	Most Popular Cities	Responses Per City	Percent Purchased
Grocery	Minot	3	66.7	Eating Places	Minot	7	46.4
	Balta	2	80.0		Harvey	2	67.5
	Harvey	2	72.5		Devils Lake	2	22.0
Drinking Places	Balta	5	62.0	Men's Clothing	Minot	29	67.0
	Wolford	4	83.8		Fargo	4	68.8
	Barton	4	57.0		Devils Lake	4	53.5
	Knox	4	47.5		Grand Forks	3	73.3
Women's Clothing	Minot	44	65.3	Teen Clothing	Minot	18	75.0
	Catalog Sales	4	66.3		Shoes	Minot	57
Woman's Coats	Minot	46	66.6	Devils Lake		5	44.0
	Grand Forks	4	62.5	Fargo		4	52.3
Jewelry	Minot	18	61.8	Radios, TVs, VCRs	Minot	31	68.5
Major Appliance Repair	Minot	7	83.6	Florist	Devils Lake	3	76.7
	Harvey	3	63.3		Harvey	2	75.0
Auto Sales	Minot	11	75.9	Gas Station	York	8	83.8
	Devils Lake	7	54.3		Balta	7	80.7
	Harvey	4	88.8		Rolette	4	87.5
Furniture	Minot	29	70.7	Plumber	Rolette	5	72.0
Auto Repair	Harvey	4	67.5		Leeds	3	90.0
	Minot	3	66.7	Nursery (Plants)	Minot	7	94.3
Heating Fuel/Propane	York	10	97.0		Surrey	5	93.0
	Balta	5	98.0	Legal Service	Devils Lake	6	83.3
	Rolette	4	82.5		Minot	5	95.0
Beautician	Minot	5	81.0		Towner	4	91.3
	Esmond	4	87.5	Accounting Service	Bottineau	5	100.0
	Leeds	4	90.0		Devils Lake	4	95.0
Optometrist	Minot	27	90.4		Rolla	4	95.0
	Devils Lake	8	82.5	Barber	Minot	4	72.5
	Harvey	4	90.0		Family Doctor	Minot	6
Computers	Minot	9	100.0	Harvey		4	86.3
	Major Appliance	Minot	22	72.0	Banking and Services	Leeds	4
Devils Lake		4	47.5	Maddock		3	86.7
Rolette		3	90.0	Building Supplies	Esmond	2	65.0
Chiropractor	Bottineau	6	84.2		Leeds	2	60.0
	Minot	6	73.3	Mortician	Leeds	4	100.0
	Devils Lake	3	93.3		Maddock	3	83.3
	Dentist	Harvey	7	91.4	Hospital	Minot	8
Maddock		5	98.0	Harvey		5	85.0
Prescription Drugs	Out of State	4	92.5	Hardware	Balta	2	90.0
	Minot	4	80.0		Willow City	2	77.5
Vet (Small Animal)	Towner	26	90.0	Farm Machinery	Rolla	3	78.3
		5	74.0		Leeds	2	85.0
Sporting Goods	Minot	27	59.4	Crop Consultant	Five cities with one response each		
	Devils Lake	4	52.3		Fertilizer	York	10
Farm Machinery Repair	Leeds	3	71.7	Wolford		9	81.7
	York	8	91.3	Willow City		3	96.7
	Rolette	7	82.9	Crop Seeds	Harlow	4	75.0
Balta	6	99.2	Balta		3	83.3	
Commercial Feed	Willow City	2	100.0		Willow City	3	76.6
	Harvey	2	77.5	Grain Marketing	Esmond	8	80.0
Farm Chemical	Wolford	12	82.1		Harlow	6	72.5
	York	8	90.0		Wolford	6	58.8
	Balta	3	100.0	Farm Supplies	Balta	4	87.5
Livestock Marketing	Minot	7	88.6		York	3	71.7
	Veterinary Services	Towner	21	87.4			
Rolette		6	62.5				

MTA. Other popular cities included Harvey, Devils Lake, Balta, and Rolette. Wolford, York, Towner, and Leeds were popular for purchasing agricultural goods and services.

Rugby will always lose some shoppers to surrounding cities and towns for several reasons. First, many shoppers in the Rugby MTA live close to other towns where it may be more convenient to shop for some goods and services (e.g., some agricultural services and convenience items). Second, Minot, because of its size, will have an image of greater variety and more favorable prices for many goods and services. Thus, many people will travel to Minot to shop even if the same merchandise is available locally and is competitively priced. Third, some towns have businesses which have a reputation for providing excellent service and/or quality products, often drawing customers from areas not normally considered within its trade area. Finally, when people travel to other towns, primarily for reasons other than shopping, they likely may spend some time shopping (e.g., when parents/students travel to a state basketball tournament in Bismarck, Fargo, Minot, etc., they are likely to shop while in town; also trips to larger trade centers to see medical specialists or attend recreational events can result in considerable outshopping).

Analysis of Outshoppers in Rugby Main Trade Area

Responses were analyzed to determine if those who bought 50 percent or more of selected goods and services in Rugby differed from those who bought less than 50 percent. Differences between the two groups also were analyzed by convenience and specialty services.

According to selected demographic characteristics, little difference exists between those who purchase a majority of their goods and services in Rugby and those who purchase a majority of their goods and services elsewhere (Table 10). Also, little difference exists between groups and within each group for either convenience or specialty goods and services.

Household income was higher across all four services for the group purchasing 50 percent or more of the services in Rugby than for the group purchasing less than 50 percent. The group purchasing less than 50 percent of the four goods and services in Rugby traveled farther (for each of the services) than the group purchasing 50 percent or more of the same goods and services in Rugby.

TABLE 10. DEMOGRAPHIC CHARACTERISTICS FOR PEOPLE IN THE MAIN TRADE AREA WHO PURCHASE LESS THAN 50 PERCENT AND THOSE WHO PURCHASE MORE THAN 50 PERCENT OF THEIR SERVICES IN RUGBY, NORTH DAKOTA, 1989

Attribute	Group Purchasing 50 Percent or More of Goods in Rugby				Group Purchasing Less Than 50 Percent of Goods in Rugby			
	Groc-eries	Gas Station	Building Supplies	Major Appliances	Groc-eries	Gas Station	Building Supplies	Major Appliances
Age	52.1	51.1	51.4	52.2	48.9	48.3	47.9	47.8
Education	12.4	12.8	12.5	12.4	12.1	11.6	13.0	12.9
Years Lived In County	36.6	36.3	35.9	38.2	33.9	34.8	34.5	31.6
Number in Household	2.9	3.1	3.1	2.8	3.2	3.1	3.1	3.5
Number in Grade School	0.6	0.7	0.7	0.6	0.6	0.8	0.6	0.9
Number in High School	0.4	0.4	0.5	0.3	0.2	0.3	0.0	0.3
Household Income	\$23,031	\$23,966	\$23,086	\$23,779	\$18,958	\$18,077	\$19,722	\$22,738
Average Miles Traveled ^a	18.1	15.3	18.2	18.5	20.7	26.7	22.9	19.5

^aThose living in Rugby and those traveling less than one mile to Rugby were not included in the analysis.

Both the average age and years resided in county were very high, suggesting either that the survey respondents were older individuals or the MTA is composed of older clientele (providing the survey is a representative sample of the MTA). Other demographic variables suggest that households in the Rugby MTA are small, with few school children. Only slight differences were evident between the two main groups, with no substantial differences appearing between those purchasing 50 percent or more and those purchasing less than 50 percent of the goods and services in Rugby.

Newspaper Subscriptions of Rugby Area Residents

Newspaper subscriptions of respondents in the Rugby main and greater trade areas were identified (Table 11). Newspaper subscriptions were divided into daily and weekly papers for both main and greater trade area respondents. The most popular daily

newspapers for both the main and greater trade areas were *The Minot Daily News* and *The Forum* (Fargo). The most popular weekly papers for the main and greater trade areas were the *Pierce County Tribune* and *Benson County Farmers Press*, respectively. Other popular weekly newspapers for respondents included *Turtle Mountain Star*, *The Bottineau Courant*, *Mouse River Farmers Press*, and *Pierce County Tribune*.

TABLE 11. NEWSPAPER SUBSCRIPTIONS FOR MAIN AND GREATER TRADE AREA RESPONDENTS, RUGBY, NORTH DAKOTA, 1989

Main Trade Area			Greater Trade Area		
Newspaper	Numbers of Respondents	Percent	Newspaper	Number of Respondents	Percent
----- Daily Newspapers -----					
Minot Daily News	69	80.2	Minot Daily News	176	67.1
Fargo Forum	6	7.0	Fargo Forum	42	16.0
Grand Forks Herald	6	7.0	Grand Forks Herald	22	8.4
Wall Street Journal	2	2.3	Devils Lake Journal	16	6.1
Devils Lake Journal	2	2.3	Others	6	2.4
USA Today	1	1.2			
	Total	86 ^a		Total	262 ^b
----- Weekly Newspapers -----					
Pierce County Tribune	135	75.9	Benson Co. Farmers Press	90	19.0
Benson Co. Farmers Press	20	11.2	Turtle Mountain Star	84	17.7
AgWeek-Grand Forks	4	2.2	Bottineau Courant	74	15.6
Turtle Mountain Star	4	2.2	Mouse River Farmers Press	69	14.5
Harvey Herald	4	2.2	Pierce Co. Tribune	47	9.9
Towner Co. Record Herald	3	1.7	Towner Co. Record Herald	39	8.2
Others	8	4.6	Harvey Herald	31	6.5
			AgWeek-Grand Forks	12	2.5
			Others ^c	30	6.1
	Total	178 ^d		Total	476 ^e

^a81 respondents subscribe to a daily paper with five respondents subscribing to more than one paper.

^b262 respondents subscribe to a daily paper with 19 respondents subscribing to more than one paper.

^cOther weekly newspapers included Golden Valley News, Cavalier Chronicle, Valley News and Views, Hebron Herald, Kenmare News, Emmons County Record, Traill County Tribune, McClusky Gazette, Fargo Forum, Grand Forks Herald, Wells County Herald, Grafton Record, and West Hope Standard.

^d143 respondents subscribe to a weekly paper with 35 respondents subscribing to more than one paper.

^e351 respondents subscribe to a weekly paper with 125 respondents subscribing to more than one paper.

Radio Stations of Rugby Area Residents

The most popular radio stations that respondents in Rugby's main trade area listened to were KZZJ of Rugby, followed by KFYR of Bismarck and KZZY of Rugby (Table 12).

Comparison of Current and Previous Rugby Trade Area Boundaries

Baldwin and Vangsness (1974) discussed general information on retail trade and identified both main and greater trade areas for Rugby. Information from the past Rugby retail trade report was based on a different questionnaire; however, some comparisons to information in this report can be made. Probably the most valid and worthwhile comparison is to examine changes in Rugby's main and greater trade areas. Although trade area delineation criteria used in the previous Rugby trade area report differ, enough similarity exists to make comparisons with the trade area boundaries determined in this report.

The main trade area for Rugby has changed little from 1974. Rugby lost one and gained one township from Rolette. Rugby lost one township each to Bottineau and Harvey but gained one township from Towner. Rugby lost only one township overall since the early 1970s. The greater trade area appears to have diminished slightly to the east and south of Rugby; however, the GTA appears to have remained constant or increased to the west and north of Rugby. Some of the differences in trade areas may be attributed to different trade area delineation criteria and to changes in the relative strength of the Harvey and Devils Lake trade centers.

TABLE 12. MOST POPULAR RADIO STATIONS FOR
RESPONDENTS IN THE MAIN TRADE AREA,
RUGBY, NORTH DAKOTA, 1989

Radio Station	Number of Respondents	Percent
KZZJ-Rugby	85	60.8
KFYR-Bismarck	10	7.1
KZZY-Rugby	8	5.7
KCJB-Minot	5	3.6
KHIT-Minot	4	2.9
KBTO-Bottineau	3	2.1
KIZZ-Minot	3	2.1
KDLR-Devils Lake	3	2.1
Others	19	13.6

SUMMARY AND CONCLUSIONS

Trade area analysis was conducted for Rugby based on a statewide trade area survey which the Department of Agricultural Economics at NDSU conducted in 1989. The demographic and economic profile for Rugby was discussed. Rugby has suffered in the 1980s from decreased population, reduced taxable sales, and lower pull factors. Changes in economic activity and population for Rugby have been similar to other North Dakota cities in the 2,500 to 10,000 population range, suggesting Rugby, during the 1980s, fared at least as well as other cities of comparable size. Although Rugby suffers from decreased economic activity and population declines, the city is doing relatively better than its smaller competing cities. The depressed economic conditions Rugby experienced in the 1980s were common to most cities in North Dakota.

Main and greater trade areas were defined for Rugby, using several delineation criteria. Townships where the majority of the respondents purchased 50 percent or more of a mix of goods and services in Rugby were included in the main trade area. Townships where 10 percent of the respondents purchased at least 10 percent of the goods and services mix in Rugby were included in the greater trade area (not including main trade area townships). The goods and services mix contained six convenience, eight specialty, and two agricultural items.

Rugby's main trade area appears to have decreased slightly since 1974. Rugby lost three townships to neighboring cities, but gained two townships, for an overall reduction in MTA size of one township. The greater trade area decreased slightly to the east and south; however, pull from the west and north may have increased slightly. The shape of the greater trade area appears to reflect competition from Harvey and Devils Lake.

Rugby appears to be doing a good job of capturing most of the available market (those respondents who purchase a majority of the service in Rugby divided by the total number of respondents in the Rugby main trade area who purchase the service) for most of the services listed on the survey questionnaire. Also, Rugby appears to be an important source of services for those shopping in Rugby (i.e., of those shopping in Rugby, most individuals will purchase a majority of the item from Rugby retailers).

Minot, Devils Lake, Harvey, and a few smaller towns provide most of the shopping locations for area residents who do not purchase their goods or services in Rugby. No substantial differences were found in the demographic characteristics of

those purchasing less than 50 percent and those purchasing more than 50 percent of selected convenience and specialty goods and services in Rugby. Those purchasing 50 percent or more of one or more convenience or specialty goods or services in Rugby traveled an average distance of about 20 miles.

Even though the 1980s have been difficult for rural North Dakota cities, Rugby appears to have fared as well as other cities of comparable size and somewhat better than smaller neighboring towns. Rugby is faced with decreasing city and county population and decreasing county employment. Although economic times have been difficult, Rugby appears to be doing a good job of retaining most of its past trade area and remaining an important trade center in north central North Dakota.

REFERENCES

- Baldwin, Eva and Elmer C. Vangsness. 1974. Retail Trade and Services Area Survey and Report: Rugby, North Dakota. North Dakota Agricultural Economics Extension Service Paper, North Dakota State University, Fargo.
- Bangsund, Dean A., F. Larry Leistritz, Janet Wanzek, Dale Zetocha, and Holly E. Bastow-Shoop. 1991. North Dakota Trade Areas: An Overview. Agricultural Economics Report No. 265. Fargo: North Dakota State University, Department of Agricultural Economics.
- Job Service of North Dakota. Various Issues. North Dakota Labor Force by County, by Region. Bismarck, N.D.
- Leistritz, F. Larry, Janet Wanzek, and Rita R. Hamm. 1990. North Dakota 1990: Patterns and Trends in Economic Activity and Population. Agricultural Economic Statistics Series No. 46. Fargo: North Dakota State University, Department of Agricultural Economics.
- U.S. Department of Commerce, Bureau of the Census, "Current Population Reports," Series P-26 (Spring 1990). Washington D.C.: U.S. Government Printing Office.
- U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index Inflatons. Washington D.C.: U.S. Government Printing Office.

APPENDIX

