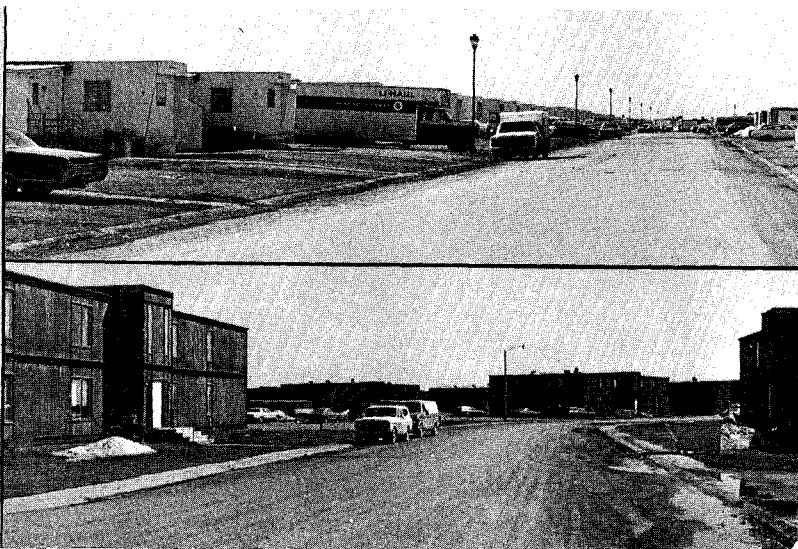
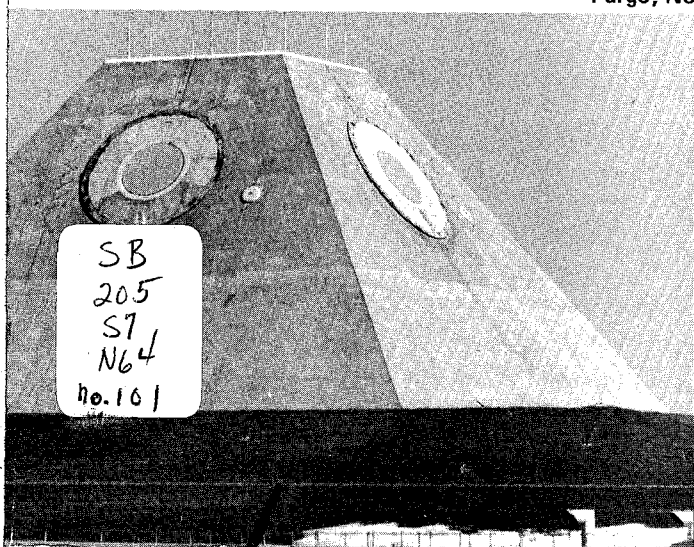


# THE IMPACT OF THE SAFEGUARD ANTIBALLISTIC MISSILE SYSTEM CONSTRUCTION

On  
Northeastern North Dakota

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## FOREWORD\*

Federal defense projects have led to rapid population changes in many communities. These communities often have experienced rapid growth during the construction and installation phase, followed by a population decrease when the project became operational and labor requirements declined. Large industrial construction projects (e.g., construction of coal conversion plants) may confront other communities with similar adjustment problems.

A case study of a region affected by a large federal defense construction project (the Safeguard AEM Project) was undertaken in 1974 to determine the changes in the local economy and community and the acceptance of these changes. The Safeguard project led to substantial population and economic growth, but in late 1975 it was learned that the project might be abandoned. It is hoped that this report will provide useful information for other communities which may experience rapid growth and also provide information useful to northeastern North Dakota officials in planning for the changes that may result from abandonment of the AEM project.

The authors extend special appreciation to the residents of Langdon and surrounding communities for their cooperation and assistance in the study. Special thanks are due Mr. Edsel Boe, former Cavalier County area extension agent; Mr. Glen Robinson, public relations officer at the MSR site; and former Langdon mayor, Dr. Harold Blanchard; for their valuable contributions to the study. Special acknowledgments are due Mr. James Wieland and Mr. Mark Schaffner for their assistance in conducting the personal interviews and compilation of data.

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\*As this report was going to press, it was announced that the MSR site would be decommissioned and most of the project's personnel would be transferred or terminated. It is anticipated a subsequent study will be conducted to monitor the effects of the phase-out of the project.

## TABLE OF CONTENTS

	<u>Page</u>
Highlights . . . . .	ii
Purpose of Study . . . . .	3
Survey Procedures . . . . .	4
Effects on Housing and Public Services . . . . .	4
Planning Information and Assistance Provided to Affected Communities . . . . .	4
Commuting and Residential Patterns of the Work Force . . . . .	6
Population in Northeastern North Dakota . . . . .	8
Effects on Housing . . . . .	8
Effects on Public Utilities . . . . .	10
Effects on Schools . . . . .	11
Effect on Transportation Systems . . . . .	14
Effects on Law Enforcement . . . . .	15
Effects on Medical Facilities . . . . .	16
Effects on Local Government . . . . .	17
Effects on Local Economic Activity . . . . .	21
Employment Changes . . . . .	22
Changes in Retail Sales Volume and Number of Firms . . . . .	23
Changes in Income and Earnings . . . . .	24
Effects on Financial Institutions . . . . .	25
Changes in Costs of Goods and Services . . . . .	25
Effects on Community Activities and Quality of Life . . . . .	27
Effects of Recreational Activities . . . . .	28
Effects on Churches . . . . .	29
Effects on the Local Newspaper . . . . .	29
Changes in Community Leadership . . . . .	29
Overall Effects on the Community and Individuals . . . . .	30
Conclusions . . . . .	30
Appendix . . . . .	35
List of Tables . . . . .	67
List of Appendix Tables . . . . .	69

## Highlights

The purpose of this report is to describe the effect the Safeguard Antiballistic Missile System construction had on communities in northeastern North Dakota. The objectives of the study were to describe the local economic situation before, during, and after the construction project and to evaluate the impacts of the ABM construction on public services, governmental units, and the way of life in the communities involved. Data for this report were obtained from personal interviews of local residents and community officials/leaders and from secondary sources.

The ABM construction, which began in April, 1970, had a major effect on the rural communities in northeastern North Dakota, especially Langdon. The population of Langdon increased from 2,182 in 1970 to 3,957 in 1973, bringing with it numerous adjustments. Housing was immediately affected as a peak construction work force of about 4,000 moved into the area. About 83 percent of the respondents felt that failure to provide adequate housing in the short run caused housing costs and rents to increase significantly. Public utilities had to be upgraded to meet the requirements of the increased population. Water and waste systems were expanded at a cost of about \$1.3 million, while \$98,000 was spent remodeling the sewage lagoon.

In the first year of the construction project, 637 children of ABM workers were enrolled in the area's school systems. About 50 percent of these students were in the Langdon school system, causing overcrowded school facilities. Impact payments for educational purposes totaling \$2.3 million were made in the area for school construction and operation, with Langdon receiving construction grants of \$537,388. Enrollment in the Nekoma school system increased 155 percent during the project.

Law enforcement personnel and facilities were expanded as the project was being constructed. Federal grants paid for the enlarging of the law enforcement staffs in Langdon and in Cavalier County. Sixty-four percent of those interviewed indicated that there was no increase in the crime rate since the ABM project began. However, police data revealed crime rates increased significantly. Hospital capacity in Langdon was increased from 28 to 38 beds, primarily as a result of federal impact funds.

The economy of the Langdon area was greatly stimulated by the impact of the ABM construction. Employment increased 47.1 percent from 1969 to 1973 in Cavalier County compared to an 8.3 percent increase for North Dakota. From 1969 to 1971 total sales by Langdon businesses increased by 40.2 percent. Cavalier County total personal income increased 202 percent between 1969 and 1972 compared to 27 percent for the state during the same time period.

Respondents were questioned as to whether they felt the ABM development was generally good or bad for the area--four out of five respondents indicated the effect had been beneficial and only one in ten indicated the effect had been detrimental. When asked if they felt they were personally better or worse off as a result of the ABM impact, more than half believed the changes brought by the project were beneficial, while approximately one in six indicated the effects had been detrimental.

THE IMPACT OF THE SAFEGUARD ANTIBALLISTIC MISSILE  
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by  
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During the period of 1969 through 1974, northeastern North Dakota was affected by the construction of a large-scale federal defense installation--the Antiballistic Missile (ABM) Complex. This complex, which consisted of two major sites and four smaller sites, was part of the Department of Defense Safeguard System. The major construction sites were the Missile Site Radar (MSR) near Nekoma, North Dakota, and the Perimeter Acquisition Radar (PAR) near Concrete, North Dakota. Four smaller backup Sprint missile sites are located near the larger sites (Figure 1).

The announcement of the project was made in late 1969, with local residents first learning of it during the Christmas season of that year. Construction began April 6, 1970, at which time the area began to feel the influx of migration by project employees and their dependents.

The ABM project was an immense undertaking which required 4,000 workers during the peak construction period with a project cost of \$468 million.<sup>1</sup> The area where the complex was built was an agricultural area and no major population centers were within easy commuting distance. The nearest major population center, Grand Forks (with a 1970 population of 39,008), is located about 90 miles to the southeast of the sites; Devils Lake (with a 1970 population of 6,670) is located about 70 miles to the southwest (Figure 1). As a result, the ABM workers settled primarily in two small towns near the construction sites--Langdon and Cavalier. As Langdon was centrally located in relation to the various sites, it received the bulk of the population influx. Langdon's population nearly doubled in three years, rising from 2,182 in 1970 to 3,957 in 1973--an average annual growth rate of 22 percent per year.<sup>2</sup> As a result, Langdon and the surrounding area experienced many of the problems associated with rapid population growth.

The Langdon area was not particularly well equipped to handle the increased demand for housing, public services, and private services that resulted from rapid growth. However, federal impact payments aided the

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<sup>1</sup>This figure includes total cost of construction (\$293 million), installation and testing (\$153 million), and contractual maintenance and service (\$22 million) through October 1, 1974. The cost data were obtained from Mr. Glen Robinson, Public Affairs Officer at the MSR Site.

<sup>2</sup>U.S. Department of Commerce, "Summary of Special Censuses Conducted by the Bureau of the Census Between July 1, 1973, and December 31, 1973," Current Population Reports: Special Censuses, Series P-28, No. 1508, March, 1974.

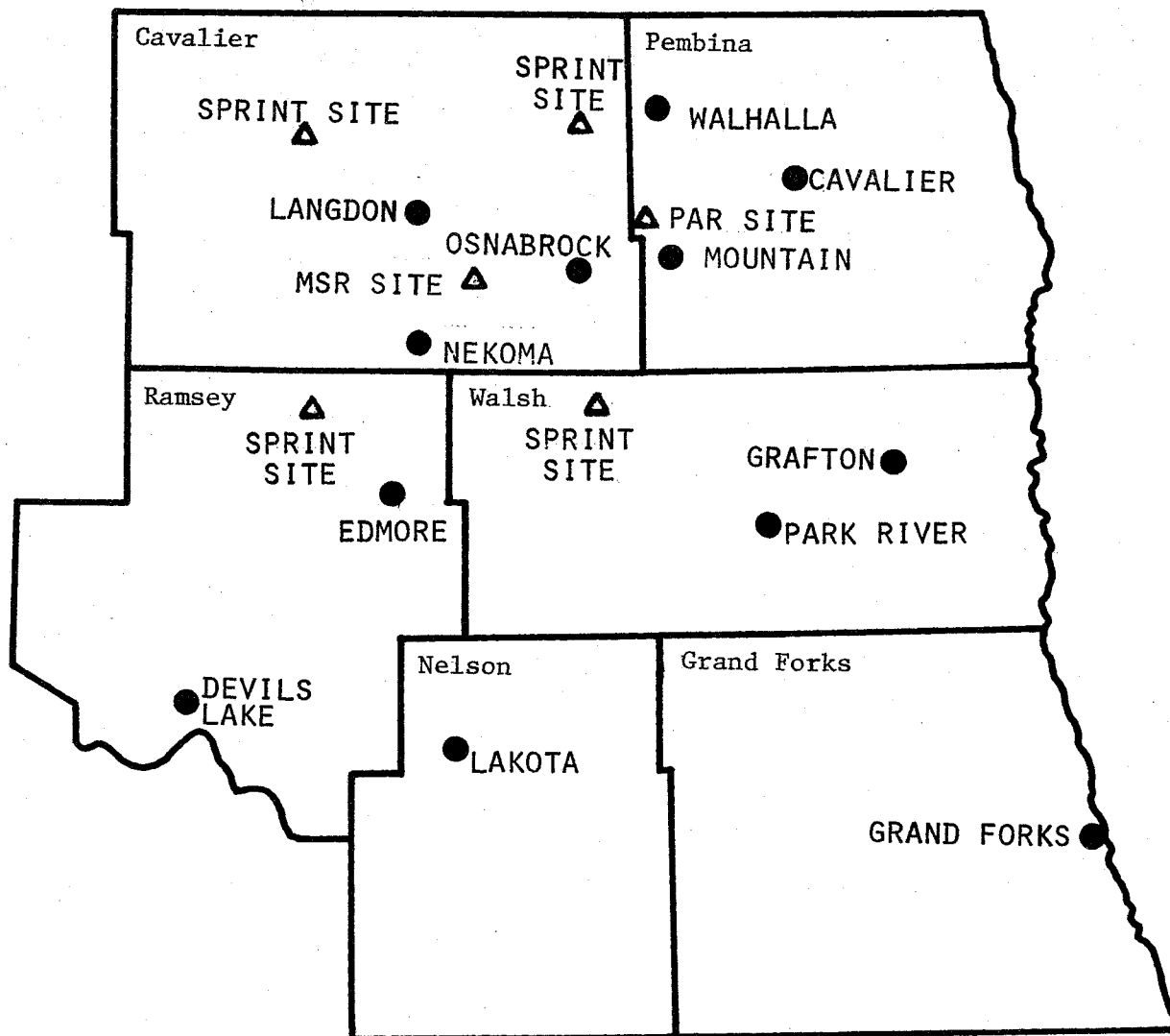


FIGURE 1. SIX-COUNTY ABM IMPACT AREA

communities in adjusting to the new situation. Congress initially made no provisions for community impact funds when it passed the first legislation authorizing construction of the Safeguard system. Consequently, Senators Young of North Dakota and Mansfield of Montana sponsored new legislation known as "The Young-Mansfield Amendment" (Section 610 of Public Law 91-511), which was signed into law in January of 1971 and appropriated \$14 million to help defray local community costs resulting from Safeguard construction in North Dakota and Montana. (The Montana project was later canceled.) Although the first payments were not received until March of 1971, the community impact payments did much to alleviate the fiscal difficulties of the impact area.

The ABM construction work force reached 2,200 by October of 1970 and peaked in 1972 when about 4,000 workers were employed at the sites. Construction was completed early in 1974 and the facility was turned over to an operating work force of about 2,000 (of which 600 were military personnel) for a training and testing period. The operating work force was expected to stabilize at about 1,300 workers by mid-1975.<sup>3</sup> However, in the fall of 1975 Langdon area residents learned that the ABM complex would be decommissioned. Although the schedule for this "phase-out" of the installation was uncertain, it appeared likely that most of the complex would soon be dismantled and/or abandoned.

The experience of the Langdon area provides an example of the effect of a large-scale construction project on a rural, agricultural area. An analysis of the impact of the ABM project may provide some insights into the various adjustments that may be required of rural communities affected by other large construction projects (e.g., construction of coal conversion facilities in western North Dakota). This report covers only the effects of the construction phase of the ABM project. However, it is anticipated that the abandonment phase will be covered in a subsequent report.

#### Purpose of Study

The purpose of this study was to provide information on the effects of the construction and operation of the Antiballistic Missile (ABM) System on the communities surrounding the ABM site in northeastern North Dakota. The specific objectives were:

1. To describe the local economic situation and the general infrastructure of the communities near the ABM site before, during, and after the ABM construction.
2. To evaluate the impacts of the ABM project on public services, governmental units, and the way of life in the communities involved.

The primary emphasis of the study was directed at the immediate Langdon area. A personal interview survey was conducted in June, 1974. A sample of the general populace was personally interviewed as were community leaders, such as mayors, law enforcement representatives, bank

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<sup>3</sup>Mr. Glen Robinson, public affairs officer, MSR Site, Nekoma, North Dakota, personal communication, June, 1974.

presidents, school officials, and other officials of selected public services. The timing of the survey allowed observation of the situation at the end of the construction phase as site employment was dropping from the construction peak to the operation level.

Information from federal, state, county, and city records was used where possible to supplement the data collected in the survey.

### Survey Procedures

The survey had two parts. A standard questionnaire was administered to all respondents to identify the effects of the ABM project as perceived by the population in general. Additional specific questions were addressed to certain public officials and community leaders in order to gain detailed information regarding effects on the local economy and various community services.

A stratified sample was selected, consisting of approximately 3 percent of the residents of Langdon and adjacent mobile home courts and about 1 percent of the rural farm families in the surrounding area. In addition, selected public officials in nearby communities were interviewed. A total of 142 questionnaires were completed by personal interview; 77 percent of the respondents were from Langdon and the adjacent mobile home courts, while 10 percent were rural farm residents. The remainder of the respondents were from Cavalier, Grafton, and Nekoma. Approximately 46 percent of the respondents were male and 54 percent female. The respondents ranged from high school students to retired citizens, with the mean age of the sample being 41.5 years. More than 99 percent of the people interviewed were Caucasian. Household heads made up 51.5 percent of the respondents.

More than half of the respondents had lived in the community longer than 10 years and less than 10 percent had lived in the community less than one year (Table 1). Approximately 30 percent of the respondents had moved to the Langdon area from another state (Table 1). Of the respondents who had moved to the area from other North Dakota counties, no one county was the previous residence of more than two persons.

The survey respondents were composed of a wide variety of occupations, with ABM employees, farmers, business proprietors, and (non-ABM) government employees accounting for the largest numbers of respondents.

### Effects on Housing and Public Services

An immediate effect of the ABM project was a substantial increase in the population of nearby communities as large numbers of workers and their families moved into the area. This influx of workers led to considerable increases in the demand for housing and put pressure on such public services as water and sewer facilities, transportation facilities, and the educational system.

### Planning Information and Assistance Provided to Affected Communities

The Safeguard Project was a national defense project constructed on a "crash" schedule, and so the affected communities had less planning lead



TABLE 1. CHARACTERISTICS OF SURVEY RESPONDENTS, JUNE, 1974

Item	Number of Respondents	Percent of Total
Place of Residence:		
Langdon	82	57.7
ABM Housing <sup>a</sup>	28	19.7
Cavalier	10	7.0
Nekoma	1	0.7
Grafton	7	4.9
Rural Farms	14	9.9
Total	<u>142</u>	<u>100.0<sup>b</sup></u>
Length of Residence:		
Less Than 1 Year	14	9.9
1 - 3 Years	26	18.3
3 - 5 Years	17	12.0
5 - 10 Years	9	6.3
More Than 10 Years, But Not Entire Life	20	14.1
Entire Life	56	39.4
Total	<u>142</u>	<u>100.0<sup>b</sup></u>
Location of Previous Residence:		
Within County	74	52.1
Another North Dakota County	19	13.4
Out of State	41	28.9
Foreign Country	3	2.1
No Response	5	3.5
Total	<u>142</u>	<u>100.0<sup>b</sup></u>
Position in Household:		
Male Head of Household	61	43.0
Female Head of Household	12	8.5
Spouse of Head of Household	62	43.7
Child of Head of Household	7	4.9
Total	<u>142</u>	<u>100.0<sup>b</sup></u>
Employment of Household Head:		
ABM Worker	28	19.7
Agriculture	24	16.9
Government	29	20.4
Trade	17	12.0
Other	39	27.5
No Response	5	3.5
Total	<u>142</u>	<u>100.0<sup>b</sup></u>

<sup>a</sup>ABM housing refers to the mobile home courts located north and west of Langdon.  
<sup>b</sup>The sum of the percentage of total may not equal 100 percent due to rounding.

time than is typically the case for nondefense projects. To aid the communities in planning to meet the impact, the Safeguard Command prepared two reports indicating the population increases likely to be experienced by each community and assessing the adequacy of existing facilities to meet the increased needs. The first report was issued in April of 1970 (about the time that the construction began).<sup>4</sup>

The second report was issued in November of 1971 and contained revisions of the initial projections.<sup>5</sup> The revisions were based in part on a survey of the construction work force conducted in November of 1970. This survey provided information on the residence and commuting patterns and demographic characteristics of the construction force which proved helpful in preparing more accurate impact projections. Revisions in school enrollment projections were substantial because many workers did not bring families to the area and, among those who did, a high percentage of the children were of preschool age.<sup>6</sup> The revised projections of increased population and school enrollment through the construction period were quite accurate, particularly for Langdon and Cavalier.

Another effort to provide planning assistance to the impacted communities involved the assignment of an Area Resource and Development Agent to serve as a liaison between the Safeguard Command and local leaders. Mr. Edsel Boe, who had been serving as the Extension Agent for Cavalier County, was assigned to this new position in 1970 by the Cooperative Extension Service. The Safeguard project provided office space and reimbursed the Extension Service for Mr. Boe's services. The agent served in a liaison and technical assistance capacity from 1970 through 1974 and was able to furnish considerable aid to local officials. As most of these officials were employed full-time in their businesses or professions, they welcomed the help of Mr. Boe in preparing and monitoring grant applications, coordinating with Safeguard officials, and many other aspects of growth management.

#### Commuting and Residential Patterns of the Work Force

About 70 percent of the workers employed on the ABM project over the period 1970-1974 relocated to the area, while the other 30 percent already lived in the impact area. A survey conducted by the Safeguard System Command in November of 1970 provides information on the residential and commuting patterns of the workers.<sup>7</sup> Out of a work force numbering 2,245--1,075 workers

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<sup>4</sup>U.S. Army Safeguard System Command, Community Impact Report, Grand Forks Deployment Area, Prepared by Corps of Engineers, U.S. Army Engineer District, Omaha, Nebraska, April, 1970.

<sup>5</sup>U.S. Army Safeguard System Command, Community Impact Report, Grand Forks Deployment Area, Update Supplement, Prepared by Corps of Engineers, U.S. Army Engineer District, Omaha, Nebraska, November, 1971.

<sup>6</sup>Ibid.

<sup>7</sup>Ibid., p. III-3.

responded to the survey. Of these, 72.1 percent were nonlocal or relocated workers. Most of the nonlocal workers (81 percent) lived within 20 miles of one of the work sites and almost 97 percent were located within a 50-mile driving distance.

Based on the survey, the Safeguard Command estimated that on the average each nonlocal worker had brought about 1.1 dependents with him to the area.<sup>8</sup> This relocating population was estimated (using survey results and school enrollments) to be distributed as shown in Table 2. About 38 percent of the relocating population (1,430 people) was located in Langdon, while almost 13 percent (470 people) was located in Cavalier. Grand Forks was the place of residence of about 10 percent of the relocating population.

The survey was not repeated in the later years of the project. However, information obtained from both local officials and Safeguard System personnel indicates that much of the subsequent population increase occurred in Langdon and Cavalier, with very limited increases in most of the other communities.

TABLE 2. PEAK NONLOCAL SAFEGUARD WORKERS AND DEPENDENTS BY COMMUNITY OF RESIDENCE, 1970-71 (ESTIMATES FOR OCTOBER, 1970, UNLESS OTHERWISE NOTED)

Community of Residence	Total Workers and Dependents	
	Number	Percent
Langdon <sup>a</sup>	1,430	38.3
Cavalier <sup>b</sup>	470	12.6
Grand Forks	360	9.7
Walhalla <sup>b</sup>	200	5.4
Lakota	170	4.6
Nekomab	150	4.0
Park River	140	3.8
Osnabrock <sup>b</sup>	130	3.5
Mountain <sup>b</sup>	130	3.5
Edmore <sup>b</sup>	110	2.9
Others	440	11.8
Total	3,730	100.0

<sup>a</sup>Population estimate as of March, 1971.

<sup>b</sup>Population estimate as of May, 1971.

Source: U.S. Army Safeguard System Command, Community Impact Report, Grand Forks Deployment Area, Update Supplement, Prepared by U.S. Army Engineer District, Omaha, Nebraska, November, 1971, Table III-2, p. III-6.

<sup>8</sup>Ibid., p. III-6.

### Population in Northeastern North Dakota

The population of six northeastern North Dakota counties and selected incorporated areas for the period 1950-1974 is shown in Table 3. However, data on population changes since April 1, 1970 (the date of the last regular census) are spotty at best. Special censuses have been conducted at various times since 1970 for Cavalier County and for several incorporated places in the area, and these provide some indication of the magnitude of population growth.

Langdon and Cavalier experienced the greatest population increases among the communities in the immediate area of the ABM sites. Langdon gained 1,775 people from 1970 to 1973, while Cavalier added 1,052 (Table 3). Several smaller Cavalier County villages also gained in population (i.e., Milton, Nekoma, and Osnabrock). Lakota in Nelson County had a population increase of 180 between April 1, 1970, and August 3, 1971. Park River in Walsh County added 376 people between 1970 and 1972. Devils Lake and Grand Forks also gained population during this period, but it appears likely that only a fraction of their growth can be attributed to the ABM project.

Detailed information on the population of the six-county area as of April 1, 1970, is available from the 1970 U.S. Census of Population. Census information on population by age and sex, educational attainment, labor force status, occupation, migration, and housing characteristics is presented in Appendix Tables 1-9.

### Effects on Housing

A housing shortage occurred in the Langdon area as the population nearly doubled between 1970 and 1973. Of the workers employed in the project, about 70 percent relocated to the area--so there was a need for almost 3,000 additional housing units (including group quarters) in the impact area within a two- to three-year period. The need for additional housing was met in a number of ways. One of the major contractors established a mobile home court with 200 lots adjacent to Langdon. The United States Army Corps of Engineers constructed 200 homes at the Tactical Command site near Nekoma for military personnel. Another contractor developed 22 eight-plex units in Langdon and 33 units in Cavalier to aid in housing his personnel. In addition, private developers built mobile home courts, houses, and apartment units. However, in the interim all available dwellings were rented to the workers. Vacant farmsteads, dilapidated houses, and basement rooms were utilized, and rental rates increased substantially. In one instance, an apartment renting for \$75 per month jumped to \$200 per month almost overnight. Local residents were sometimes forced to absorb increases in rent to avoid losing their residence. Competition for housing caused rental rates to rise substantially relative to most local residents' increases in income. People living on retirement payments and other types of fixed incomes were most greatly disadvantaged by the increase in rental rates. Living conditions for the ABM workers were often overcrowded and substandard, especially in the early years of the project.

Approximately 83 percent of the survey respondents felt the ABM impact had an effect on rents, while only 8.5 percent felt that local rents were not affected (Table 4). The general comment by residents indicated the extreme shortage of housing permitted landlords to demand and receive higher rental rates.

TABLE 3. POPULATION OF COUNTIES AND SELECTED INCORPORATED AREAS, NORTHEASTERN NORTH DAKOTA, 1950-74

Area	Population						
	1950 <sup>a</sup>	1960	1970 <sup>b</sup>	1971	1972	1973	1974
Cavalier County	11,840	10,064	8,213	9,200 <sup>c</sup>	10,100 <sup>c</sup>	10,977 <sup>d</sup>	
Langdon	1,838	2,151	2,182	—	—	3,957 <sup>d</sup>	
Milton	322	264	198	—	—	293 <sup>d</sup>	
Nekoma	140	143	84			138 <sup>d</sup>	
Osnabrock	284	289	255			335 <sup>d</sup>	
Grand Forks County	39,443	48,677	61,102	63,400 <sup>c</sup>	63,900 <sup>c</sup>	65,000 <sup>c</sup>	
Grand Forks	26,836	34,451	39,008	40,060 <sup>e</sup>			
Nelson County	8,090	7,034	5,807	5,800 <sup>c</sup>	6,000 <sup>c</sup>	6,000 <sup>c</sup>	
Lakota	1,032	1,066	964	1,144 <sup>f</sup>			
Pembina County	13,990	12,946	10,728	11,100 <sup>c</sup>	11,600 <sup>c</sup>	12,100 <sup>c</sup>	
Cavalier	1,459	1,423	1,381		2,433 <sup>g</sup>		
Walhalla	1,463	1,432	1,471				
Ramsey County	14,373	13,443	12,915	12,900 <sup>c</sup>	13,600 <sup>c</sup>	13,900 <sup>c</sup>	
Devils Lake	6,427	6,299	7,078				7,354 <sup>h</sup>
Edmore	458	405	398				
Walsh County	18,859	17,997	16,257	16,500 <sup>c</sup>	16,900 <sup>c</sup>	17,000 <sup>c</sup>	
Grafton	4,901	5,885	5,946			5,931 <sup>i</sup>	
Minto	592	642	636				
Park River	1,692	1,813	1,680		2,056 <sup>j</sup>		
Total--Northeastern North Dakota	106,595	110,161	115,022	118,900 <sup>c</sup>	122,100 <sup>c</sup>	124,300 <sup>c</sup>	
Total, North Dakota	619,636	632,446	617,761	628,000 <sup>c</sup>	634,000 <sup>c</sup>	640,000 <sup>c</sup>	

<sup>a</sup>Source: Ostenson, Thomas K., Reference Tables: Population Change in Counties and Incorporated Places in North Dakota, 1950-1970, Agricultural Economics Statistical Series, Issue No. 5, Department of Agricultural Economics, North Dakota Agricultural Experiment Station, North Dakota State University, Fargo, December, 1971.

<sup>b</sup>Source: U.S. Department of Commerce, 1970 Census of Population, Final Population Counts, North Dakota Advance Report, Series PC(VI)-36, 1970.

<sup>c</sup>These 1971-1973 figures are estimates as of July 1. Source: Ludtke, Richard L., and Richard W. Blair, North Dakota Population, 1970-1973, Division of Health Planning, North Dakota State Department of Health, 1974.

<sup>d</sup>From special census conducted September 26, 1973. Source: U.S. Department of Commerce, "Summary of Special Censuses Conducted by the Bureau of the Census Between July 1, 1973, and December 31, 1973," Current Population Reports: Special Censuses, Series P-28, No. 1508, March, 1974.

<sup>e</sup>From special census conducted October 7, 1971. Source: U.S. Department of Commerce, "Summary of Special Censuses Conducted by the Bureau of the Census Between April 1, 1970, and December 31, 1972," Current Population Reports: Special Censuses, Series P-28, No. 1500, April, 1973.

<sup>f</sup>From special census conducted August 3, 1971. Source: Same as e.

<sup>g</sup>From special census conducted November 13, 1972. Source: Same as e.

<sup>h</sup>From special census conducted November 14, 1974. Source: U.S. Department of Commerce, "Summary of Special Censuses Conducted by the Bureau of the Census Between July 1, 1974, and December 31, 1974," Current Population Reports: Special Censuses, Series P-28, No. 1512, June, 1975.

<sup>i</sup>From special census conducted August 13, 1973. Source: Same as d.

<sup>j</sup>From special census conducted June 19, 1972. Source: Same as e.

TABLE 4. RESPONSES REGARDING THE EFFECT OF THE ABM PROJECT ON THE COST OF HOUSING RENTAL

Response	Number	Percent of Total
Increased Rent	118	83.1
Did Not Increase Rent	12	8.5
Do Not Know	10	7.0
No Comment	2	1.4
Total	142	100.0

The number of building permits issued in Langdon during the period 1970-75 indicates considerable building activity during the ABM project (Table 5). (Building permit records were not kept prior to 1970.)

TABLE 5. BUILDING PERMITS ISSUED FOR THE CITY OF LANGDON, 1970-75

Year	Number of Building Permits
1970	72
1971	44
1972	86
1973	94
1974	90
1975	86

Source: Records of the Langdon City Auditor.

Effects on Public Utilities

Demands on public utilities in Langdon increased greatly as a result of the ABM project, and both water and sewer systems were expanded considerably. Water mains were extended and replaced and a new water tower was constructed. Serious problems occurred when increased water pressure led to breaks in the old water lines in the original part of town. Over 100 water main breaks occurred during the first winter of major ABM activity (1970-71). The total cost of upgrading and expanding the water and waste water system was about \$1.3 million, 64 percent of which was covered by federal grants. A loan was obtained from the Farmers Home Administration to cover the city's portion of the cost (\$465,000).<sup>9</sup>

The sewer system did not present as much difficulty as the water system. The city's lagoon was in the process of being improved prior to ABM construction and was simply made larger than otherwise would have been necessary. The total cost of remodeling the lagoon was \$98,000, \$20,564 of which was covered by federal grants. Planning of the lagoon project was adequate, but there was a time lag in receipt of the federal funds.

<sup>9</sup>Boe, Edsel, Personal Communication, Cooperative Extension Service, Langdon, North Dakota, June, 1974.

Solid waste disposal also posed some problems during the early stages of the ABM project. Langdon had an open dump until 1969, when the city was forced to establish a sanitary landfill. The city purchased the necessary land and equipment to establish and operate the landfill with no federal assistance.

A great increase in the number of telephone installations occurred in Langdon during the period of the ABM construction. The number of phones on the local exchange increased from 4,164 in 1968 to 5,934 in 1974. Service rates were increased to help offset the expansion costs of the telephone company. The telephone company experienced difficulty in meeting the rapid increase in demand for telephones and in hiring experienced employees. The company also experienced a considerable number of defaulted bills.

The local electric company did not have serious difficulty in meeting the increased electrical demands resulting from the ABM project. Delinquent bills did not pose a major problem as the required deposit was usually sufficient to cover any unpaid bills.

### Effects on Schools

Public school systems of northeastern North Dakota were affected substantially by the ABM project. In the first school year of the project (1970-71), 637 children of relocating project workers were enrolled in the elementary and secondary schools (Table 6). The school districts with the largest numbers of these students were Langdon, Grand Forks, Cavalier, Lakota, Edmore, and Nekoma.

School enrollments from 1968-69 to 1975-76 for selected school districts in the six-county area are shown in Appendix Table 9. It should be noted that the ABM project occurred at a time when North Dakota school enrollments were declining. Statewide enrollment fell from 167,012 for the 1968-69 school year to 146,636 for the 1975-76 school year--a decline of 12.3 percent. This trend of declining enrollments eased the adjustment of many districts to the ABM project.

A large number of new students were added to the Langdon school system as a result of the ABM project. The enrollment of the public schools increased from 963 in the 1969-70 school year to 1,589 in the 1973-74 school year (Table 7). To accommodate these new students, the Langdon school district built 13 new elementary and five new high school classrooms.<sup>10</sup> The number of teachers increased from 47 during the 1969-70 school year to 70.5 for the 1973-74 school year (Table 7). The school district borrowed \$200,000 (its legal limit) for operating capital and held five elections in an unsuccessful attempt to increase the school mill levy. The voters resisted increasing the mill levy because many expected aid from the federal government and there were times when the school board considered closing the schools. The financial problems of the district were complicated because the mill levy was quite low during the initial stages of the project. In 1969 Langdon had a school levy of 34 mills compared to a statewide average of 54 mills.

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<sup>10</sup>Ibid.

TABLE 6. DEPENDENTS OF RELOCATED (NONLOCAL) SAFEGUARD PROJECT WORKERS ENROLLED IN SCHOOL, 1970-71 SCHOOL YEAR

School District	Number of Students	Percent
Langdon	318	49.9
Grand Forks	66	10.4
Cavalier	40	6.3
Lakota	32	5.0
Edmore	30	4.7
Nekoma	29	4.6
Park River	26	4.1
Walhalla	20	3.1
Others	76	11.9
Total	637	100.0

Source: U.S. Army Safeguard System Command, Community Impact Report, Grand Forks Deployment Area, Update Supplement, Prepared by U.S. Army Engineer District, Omaha, Nebraska, November, 1971, Table III-4, p. III-12.

TABLE 7. SCHOOL ENROLLMENT AND TEACHERS IN LANGDON PUBLIC SCHOOLS, 1967-76

School Year	Grades 1-8			Grades 9-12		
	Students	Teachers	Ratio	Students	Teachers	Ratio
1967-68	546	20	27.3	272	12	22.7
1968-69 <sup>a</sup>	654	22	29.7	362	18	20.1
1969-70	595	30	19.8	368	17	21.6
1970-71	861	31	27.8	440	17	25.9
1971-72	962	37	26.0	457	18	25.4
1972-73	971	37	26.2	506	24	21.1
1973-74	1,040	45.5	22.9	549	25	22.0
1974-75	908	44.5	20.4	525	27.5	19.1
1975-76	826	41.5	19.9	506	27.5	18.4

<sup>a</sup>In 1968 the St. Alphonsus High School was closed and many of these students were added to the Langdon public school enrollment.

Source: North Dakota Educational Directory, Department of Public Instruction, State Capitol, Bismarck, North Dakota, 1967-68 through 1975-76.

Federal impact funds were provided to aid both school construction and operation and maintenance. More than \$2.3 million in impact payments to aid education were made in the area, of which \$1.4 million was for construction and \$0.9 million was for operation and maintenance.<sup>11</sup> In Langdon, \$557,388

<sup>11</sup>Ibid.



was granted for school construction. However, the federal assistance was not always available when needed. The first construction assistance funds were not provided until March, 1971. Operating assistance was provided to the Langdon school in April and May of 1971 to keep the school from closing.

Other school systems also were affected by the ABM development (Table 8). The enrollment in the Nekoma schools increased 155 percent (124 students) from the 1969-70 school year to the 1973-74 school year, while the enrollment in the Cavalier school system increased 35 percent (275 students) during the same period.

TABLE 8. SCHOOL ENROLLMENT CHANGES, SELECTED DISTRICTS, NORTHEASTERN NORTH DAKOTA, 1969-70 TO 1973-74

Community	School Year Enrollment		Change	
	1969-1970	1973-1974	Number	Percent
Langdon <sup>a</sup>	1,168	1,821	653	55.9
Cavalier	783	1,058	275	35.1
Walhalla <sup>a</sup>	821	773	-48	-5.9
Edmore	349	341	-8	-2.3
Osnabrock	104	109	5	4.8
Milton	123	150	27	22.0
Nekoma	80	204	124	155.0

<sup>a</sup>Figures include enrollment of nonpublic grade schools.

Source: Appendix Table 10.

The faculty of the Nekoma school system was doubled (from 8.25 to 16.5) during the period 1969-70 to 1974-75 to handle the additional enrollment (Appendix Table 11). The increased costs of the Nekoma schools were largely covered by federal impact payments, so the school district did not experience severe financial problems. The Cavalier school system added 3.7 faculty members during the same period (Appendix Table 12).

Overcrowding of school facilities was a common problem during the early years of the ABM project. The rapid turnover of construction worker children added to the problem of overcrowded school facilities. At Langdon lack of space hampered efforts to expand the instructional staff. The Nekoma school system became extremely crowded, but a temporary solution was achieved through the purchase of a metal building which was remodeled to provide additional classroom space. The Langdon school system dropped home economics courses from its curriculum during the 1971-72 school year because of a shortage of funds. Vocational agriculture was also voted to be discontinued for the 1971-72 school year, but was reinstated during the summer of 1971. Despite the changes brought by the ABM project, local school administrators indicated that truancy and dropout rates did not change substantially. They did indicate that while the ABM workers' children had different backgrounds and interests from those of local students, they rapidly became integrated into the student body. ABM students participated in extracurricular activities and four of the five honor students in the Langdon high school's 1974 graduating class were from ABM families.

More than 50 percent of the local residents who were interviewed indicated that the ABM project led to an overall improvement in the area's school system (Table 9). On the other hand, 25 percent believed that the changes resulting from the ABM development had been detrimental to the schools.

TABLE 9. RESPONSES REGARDING THE EFFECT OF THE ABM PROJECT ON THE QUALITY OF SCHOOL SYSTEM

Responses	Number	Percent of Total
Improved the School System	74	52.1
Same	20	14.1
Detrimental to School System	36	25.4
Do Not Know	11	7.7
No Comment	1	0.7
Total	142	100.0

Interviews with five Langdon high school students provided additional qualitative information on the effects on the Langdon school system. These students indicated that extracurricular activities had improved as a result of the ABM impact. Some additional activities had been added, the system had been reorganized, and (as a result) student participation increased. Athletics appeared to be the extracurricular activity most affected. The new students added a variety of talents and skills which acted as a stimulant to the other students. One student felt he had achieved a better background for college as a result of the ABM impact.

However, some of the local students had a difficult time adjusting to the different backgrounds and ideas of the new students in their school. Students cited shortages of books, desks, equipment, and room as the major problems resulting from the rapid increase in enrollment.

#### Effect on Transportation Systems

A number of major street and highway construction and repair projects were undertaken as a result of the ABM project. Improvement of roads providing access to the sites was funded by Defense Access Funds. Heavy truck traffic during the initial phases of the project caused considerable damage to roads and streets and several projects were undertaken to repair the damages. By early 1974 about \$700,000 of federal funds had been used to repair the streets of Langdon. Meanwhile, the city had incurred an added \$227,000 in bonded indebtedness for streets in new residential areas.<sup>12</sup> Nekoma experienced considerable street damage from truck traffic. An impact grant of \$115,000 aided in repair and improvement of Nekoma streets. The total cost of street and highway improvement in the ABM impact area was \$11.6 million by March 31, 1974. Federal funds covered 74 percent of the total.<sup>13</sup>

<sup>12</sup>Ibid.

<sup>13</sup>Woodward-Envicon, Inc., The Langdon Report, Bismarck, North Dakota, 1974.

In 1969 the city of Langdon completed construction of an airport. The total cost of the project was \$112,000, of which 50 percent came from federal aid and about 9 percent came from state aid. The new airport had a 3,000-foot runway and was used frequently by both military and civilian Safeguard personnel. In 1974 Langdon received a federal airport grant of \$134,000 for construction of an additional parking apron and taxiway and upgrading the existing runway, taxiway, and parking apron. The federal grant consisted of 25 percent Department of Defense impact funds and 75 percent Federal Aviation Administration funds.<sup>14</sup>

#### Effects on Law Enforcement

The ABM project created a need for additional law enforcement personnel and facilities in the Langdon area. The Cavalier County law enforcement staff prior to the project consisted of one sheriff and one secretary. By 1974 the staff had grown to one sheriff, one secretary, three deputies, and 20 special deputies. The Langdon city police force of one full-time and one part-time employee in 1968 increased to six full-time and one part-time employee in 1972. Between 1971 and 1974 federal assistance of \$71,000 was provided to the city of Langdon, while \$104,000 was provided to Cavalier County. A total of \$481,000 in federal law enforcement assistance was provided to cities and counties in northeastern North Dakota between January 1, 1971, and March 31, 1974.<sup>15</sup>

The Langdon city police department had more difficulty obtaining sufficient funding than did the Cavalier County sheriff's office. City police revenues are derived from city taxes, which are assessed once a year. This causes a one-year time lag in revenues for the city. There were also 99 federal government mobile homes parked within the Langdon city limits. These mobile home residents were not assessed city taxes, but still benefited from the city's water and sewer system and police and fire protection.

Survey respondents did not feel that the ABM project resulted in a substantial change in the crime rate. Sixty-four percent of those interviewed indicated that there was no change in the crime rate, while 29 percent believed that crime rates had increased. However, local law enforcement personnel regarded the crime problem to be more serious. The Cavalier County sheriff said the increase in drugs was substantial in Langdon following the ABM impact. The Langdon city police chief said shoplifting, drug and alcohol violations, and burglaries had increased since the ABM development. The percentage change in traffic and liquor violations, prisoners in custody, patrol vehicle miles traveled, civil papers served, and police man-hours worked indicated crime rates had increased more than was perceived by the local residents (Table 10).

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<sup>14</sup>Ibid.

<sup>15</sup>Ibid.

TABLE 10. TOTAL NUMBER OF POLICE PROCEEDINGS, NUMBER PER 1,000 POPULATION, AND PERCENT INCREASE FROM OCTOBER 1, 1968, TO OCTOBER 1, 1969, AND OCTOBER 1, 1971, TO OCTOBER 1, 1972, LANGDON, NORTH DAKOTA

Proceedings	1968-1969		1971-1972		% Change Per 1,000 Pop.
	Total	No. Per 1,000 Pop.	Total	No. Per 1,000 Pop.	
Traffic and Liquor Violations	57	26.1	347	87.7	236.0
Civil Papers Served	215	98.5	545	137.7	39.8
Prisoners	43	19.7	193	48.8	147.6
Patrol Vehicle Miles Traveled	9,600	4,399.6	80,400	20,138.4	357.7
Police Hours Worked	2,880	1,319.9	8,640	2,138.5	60.0

Source: Data acquired from Cavalier County Sheriff's Department, Langdon, North Dakota.

Law enforcement officials of the nearby towns of Grafton and Cavalier did not perceive major changes in the crime rates as a result of the impact. Grafton increased its police force from three in 1968 to six in 1974. Cavalier also increased its staff from a two- to a five-man department. Both departments received some federal impact payments.

#### Effects on Medical Facilities

The ABM project placed increased demands on local medical facilities. One response to the greater needs was an addition to the local hospital (Cavalier County Memorial Hospital), which increased hospital capacity from 28 to 38 beds. The total cost of \$449,180 was covered by Safeguard impact funds (98 percent) and Hill-Burton funds (Table 11). An addition to the Pembina County Memorial Hospital located in Cavalier also was built and federal funds covered 86 percent of the cost. The outpatient facility of the Pembina County Hospital also was expanded; but, of the total cost of \$300,000, only 15 percent was covered by Safeguard impact funding--while 32 percent came from Hill-Burton funds and 61 percent from local funds (Table 11).

The ABM project also resulted in a need for more trained medical personnel. In Langdon a new doctor joined the staff in 1971 bringing the total to three. Several nurses and technicians were added to the hospital staff. In addition, Safeguard funds were used to employ a public health nurse and a public health sanitarian for a two-year period. The administrator of the Cavalier County Memorial Hospital indicated there were increases in industrial and traffic accidents associated with the ABM impact. Langdon also experienced an increase in venereal disease. The hospital administrator felt the rise in venereal disease was not exceptional; however, he did attribute some of the increase to the ABM impact and to national trends regarding sexuality.

TABLE 11. CAPITAL COSTS FOR EXPANDED MEDICAL FACILITIES IN THE ABM IMPACT AREA AS OF JUNE, 1974

Project	Source of Funds			Total Cost
	Safeguard Impact Funds	Hill-Burton Funds	Local Sources	
Addition to Cavalier County Hospital	\$ 440,325	\$ 9,855	\$ 0	\$ 449,180
Addition to Pembina County Hospital	683,843	15,157	87,770	746,770
Addition to Out-Patient Facility of Pembina County Hospital	<u>45,000</u>	<u>71,300</u>	<u>183,700</u>	<u>300,000</u>
Total	\$1,169,168	\$96,312	\$271,470	\$1,495,950

Source: Woodward-Envicon, Inc., The Langdon Report, Bismarck, North Dakota, 1974.

Numerous problems with mental depression among migrant wives were experienced by Langdon doctors. The major causes of depression appeared to be a lack of activities outside the home and the extremely long cold winters. Many of the ABM families came from warmer climates and areas of larger population and experienced some difficulty in adjusting to life in rural North Dakota.

Although the ABM project strained the medical facilities of Langdon, 78 percent of interviewees thought medical services were better, or at least no worse, as a result of the ABM project. On the other hand, 22 percent of the respondents thought medical services were worse as a result of the ABM project. Respondents generally felt facilities were better because of the new hospital addition and because another doctor was added to the staff. Those who thought medical services were worse believed that with the addition of so many people the doctor shortage worsened despite one new doctor in the community. Many also complained about the long waits to get an appointment to see a doctor. A higher proportion of the people who had lived in Langdon 10 years or more thought the quality of the medical service had declined than was the case for residents who had lived there a shorter period of time, but less than 30 percent of even these long-term residents believed quality had declined.

#### Effects on Local Government

The communities affected by the ABM project experienced growth in both population and tax base. However, the rate of population growth far exceeded the rate of increase in the tax base. Cavalier County provides an example of this problem. Between 1969 and 1974 the total assessed value of real property for the county increased only 6.7 percent (Table 12), while the county's

TABLE 12. ASSESSED VALUATION OF REAL PROPERTY, CAVALIER COUNTY, NORTH DAKOTA, 1969-74

Year	Total Assessed Value of Land	Total Assessed Value of Business and Residential Property	Total Assessed Value of All Real Property
1969	\$18,102,396	\$3,393,129	\$21,495,525
1970	18,053,597	3,380,453	21,434,050
1971	18,011,630	3,816,201	21,827,831
1972	17,948,838	4,078,874	22,027,712
1973	17,902,763	4,813,013	22,715,776
1974	17,903,286	5,035,033	22,938,319
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Percent Change, 1969-1974	-1.1	+48.4	+6.7

Source: Appendix Table 13.

population grew more than 30 percent during the same period. Several factors contributed to the slow growth of the tax base. First, because the ABM installation itself was federal government property, it was not subject to taxation. Second, the relocating workers lived largely in mobile homes (which added little to the tax base) or in government housing which was tax exempt.

With a rapidly growing population and a slowly growing tax base, the communities affected by the project could have experienced severe financial difficulties. However, these problems were eased considerably by federal impact payments.

Congress initially made no provisions for community impact funds when it passed the first legislation authorizing construction of the Safeguard system. Consequently, Senators Young of North Dakota and Mansfield of Montana sponsored new legislation, Section 610 of Public Law 91-511, known as "The Young Mansfield Amendment," which was signed into law in January of 1971. Congress appropriated \$14 million to help defray local community costs resulting from Safeguard construction. Although the first payments were not received until March of 1971, the community impact payments did much to alleviate the fiscal difficulties of the impact area. By May 30, 1974, \$7,491,000 in Safeguard funds had been used for community impact payments along with \$9,475,000 in assistance from other federal sources (Table 13). In addition, \$175,000 of Safeguard funds and \$2,624,500 of other federal funds had been committed for future street and highway improvement. Although streets and highways (including site access) accounted for the largest impact payments, schools, hospitals, and water and sewer improvement were other major uses.

The impact funds were granted through existing federal agencies. For example, school construction funds were disbursed through the U.S. Office of Education. The Safeguard applications were given an A-95 review and a rating of importance by the State Planning Council. The Safeguard System management made its own investigations and appraisals of the needs of the affected communities and made the final decisions as to amounts granted to each community.

TABLE 13. FEDERAL IMPACT PAYMENTS TO ABM PROJECT AREA AS OF MAY 30, 1974

Type of Program	Total Federal Funds	Safeguard Funds	Other Federal Funds
Highways and Streets	\$10,712,000	\$2,605,000	\$8,107,000 <sup>a</sup>
School Construction	1,408,000	1,408,000	
School Operation	909,000	153,000	756,000 <sup>b</sup>
Hospitals	1,224,000	1,129,000	95,000 <sup>c</sup>
Public Health Personnel	52,000	52,000	
Water and Sewer	1,463,000	1,174,000	289,000 <sup>d</sup>
Fire and Rescue	169,000	169,000	
Law Enforcement	482,000	254,000	228,000 <sup>e</sup>
Airports	156,000	156,000	
Other	391,000	391,000	
Total	\$16,966,000	\$7,491,000	\$9,475,000

<sup>a</sup>Includes defense access funds (\$6,387,000) and trust funds, primary (\$1,720,000).

<sup>b</sup>From HEW.

<sup>c</sup>Hill-Burton funds.

<sup>d</sup>Includes Environmental Protection Agency and Farmers Home Administration grants.

<sup>e</sup>From Law Enforcement Assistance Administration.

Source: Woodward-Envicon, Inc., The Langdon Report, Bismarck, North Dakota, 1974.

The financial impact of the ABM project on the public sector is illustrated by the total school, city, and county taxes paid in Cavalier County from 1969 to 1974. The total school, city, and county taxes changed moderately during 1969-74 because the taxing districts were already at or near their statutory limits (Table 14). The bonded indebtedness of the city of Langdon increased from \$308,000 in 1970 to \$970,000 in 1974.<sup>16</sup> The bonded indebtedness of the school district did not increase from 1970 to 1973. The total city revenues and expenditures increased by 138 percent and 183 percent, respectively; while the per capita revenues and expenditures increased by 30 percent and 56 percent, respectively, and the city budget was balanced in 1973 (Table 15). However, the per capita property tax receipts in Langdon did decrease by 25 percent over the period, indicating a lag in assessment capacity and the addition of mobile homes. The large increase in public safety expenditures was paid for with federal funds and the increase in street improvements was paid with ear-marked highway revenues from the state.

While the total Cavalier County revenues and expenditures increased by 61 percent and 102 percent, respectively, the per capita revenues and

<sup>16</sup>The incremental debt was \$435,000 for water and sewer and \$227,000 for streets in new residential areas.

TABLE 14. TOTAL SCHOOL, CITY, AND COUNTY TAXES, CAVALIER COUNTY, 1969-74<sup>a</sup>

	1969	1970	1971	1972	1973	1974	Percent Change 1969-74
Total School Taxes	\$1,157,195	\$1,022,037	\$1,064,877	\$1,093,634	\$1,000,224	\$1,105,517	-4.5
Total City Taxes	87,675	86,440	94,835	99,942	112,028	112,469	+28.3
Total County Taxes	548,918	470,257	477,133	492,874	598,693	567,648	+3.4

<sup>a</sup>See Table 12 for total assessed valuation of real property in Cavalier County.

Source: Dorgan, Byron L., Statistical Report, North Dakota Tax Department, Bismarck, North Dakota, 1969-74.



TABLE 15. LANGDON CITY BUDGET, FY 1970 AND FY 1973

	Total (and Per Capita) Revenues		Total (and Per Capita) Expenditures
FY 1970 (Population 2,179)			
Property Tax	\$42,800 (\$20)	Public Safety	\$22,700 (\$10)
Fines	4,900 (\$ 2)	Streets	22,900 (\$11)
Highway	26,000 (\$12)	Other	23,800 (\$11)
Liquor	10,200 (\$ 5)		\$69,400 (\$32)
Other	1,000 (\$ 0)		
	<u>\$84,900 (\$39)</u>		
FY 1973 (Population 3,957)			
Property Tax	\$ 61,500 (\$15)	Public Safety	\$ 75,400 (\$19)
Fines	20,400 (\$ 5)	Streets	69,000 (\$17)
Highway	54,900 (\$14)	Other	52,600 (\$13)
Liquor	14,400 (\$ 4)		<u>\$197,000 (\$50)</u>
Federal (LEAA) <sup>a</sup>	33,400 (\$ 8)		
State Transfer	3,500 (\$ 1)		
Miscellaneous	14,200 (\$ 4)		
	<u>\$202,300 (\$51)</u>		

<sup>a</sup>Law Enforcement Assistance Administration.

Source: Luken, Ralph A., Economic and Social Impacts of Coal Development in the 1970's for Mercer County, North Dakota, prepared for Old West Regional Commission, prepared by Thomas E. Carroll Associates, Washington, D.C., 1974, p. 11.

expenditures increased by only 14 percent and 43 percent, respectively (Table 16). The budget deficit is only an accounting deficit because the FY 1973 budget did not include accumulated revenue sharing receipts. However, the per capita property tax receipts in Cavalier County did decrease 28 percent over the period, indicating a lag in assessment capacity and the addition of mobile homes. The doubling of expenditures for county highways is not representative of future year expenditures because of an extensive resurfacing of farm-to-market roads during FY 1973.<sup>17</sup>

#### Effects on Local Economic Activity

The ABM project had very noticeable effects on the level of economic activity in the affected communities. Some economic indicators which were

<sup>17</sup>Luken, Ralph A., Economic and Social Impacts of Coal Development in the 1970's for Mercer County, North Dakota, prepared for Old West Regional Commission, prepared by Thomas E. Carroll Associates, Washington, D.C., 1974, p. 13.

TABLE 16. CAVALIER COUNTY BUDGET, FY 1970 AND FY 1973

	Total (and Per Capita) Revenues		Total (and Per Capita) Expenditures
FY 1970 (Population 8,500)			
Property Tax	\$445,900 (\$52)	General Government	\$109,700 (\$13)
Highway	161,600 (\$19)	Protection-Person and Property <sup>a</sup>	36,400 (\$ 4)
Miscellaneous	100,800 (\$12)	Health	12,000 (\$ 1)
Federal Assistance	—	Agriculture	14,000 (\$ 2)
Other	139,900 (\$16)	Water	—
	<u>\$848,200(\$100)</u>	Relief and Charities	83,200 (\$10)
		Education	11,800 (\$ 1)
		Commercial Buildings	11,200 (\$ 1)
		Highway	426,700 (\$50)
		Other	14,400 (\$ 2)
			<u>\$719,400 (\$85)</u>
FY 1973 (Population 12,000)			
Property Tax	\$ 448,400 (37)	General Government	\$ 244,700 (\$20)
Highway	223,400 (\$19)	Protection-Person and Property <sup>b</sup>	96,700 (\$ 8)
Miscellaneous	135,900 (\$11)	Health	13,900 (\$ 1)
Federal Assistance	202,600 (\$17)	Agriculture	14,400 (\$ 1)
Other	358,500 (\$30)	Water	1,000 (\$ 0)
	<u>\$1,368,800(\$114)</u>	Relief and Charities	122,300 (\$10)
		Education	9,200 (\$ 9)
		Commercial Buildings	5,500 (\$ 0)
		Highway <sup>c</sup>	899,900 (\$75)
		Other	15,200 (\$ 1)
			<u>\$1,422,800(\$119)</u>

<sup>a</sup>Including sheriff--\$14,300.

<sup>b</sup>Including sheriff--\$54,000.

<sup>c</sup>Resurfacing farm-to-market road costs of \$375,000 are included.

Source: Luken, Ralph A., Economic and Social Impacts of Coal Development in the 1970's for Mercer County, North Dakota, prepared for Old West Regional Commission, prepared by Thomas E. Carroll Associates, Washington, D.C., 1974, p. 11.

examined in this study include employment, sales volume, number of firms, earnings and income, and bank deposits.

#### Employment Changes

Total employment in Cavalier County increased 47.1 percent from 1969 to 1973, compared to an 8.3 percent increase for the state as a whole (Appendix

Table 14). Total employment increased 22.3 percent in Pembina County over the same period, while employment increases of 10.4 and 14.5 percent were experienced in Walsh and Ramsey counties, respectively.

The Cavalier County total employment change was made up of a 102.6 percent growth in wage and salary employment and a 3.6 percent decrease in the number of proprietors. Pembina County experienced a similar phenomenon as the number of proprietors decreased 2 percent, while wage and salary employment increased 37.1 percent. A 2.2 percent decrease in the number of proprietors was experienced statewide during the period 1969-73 (Appendix Table 14).

Local residents viewed the labor market effects of the ABM construction with mixed emotions. Many cited higher wages and improved job opportunities as benefits of the project. On the other hand, many local businessmen found that they had to raise their wage rates substantially to avoid losing their employees. One local merchant reported that he had to raise the wages of his employees 25 to 30 percent to keep them. Service stations and local construction companies experienced particularly heavy losses of employees.

The farm labor market also was affected by the ABM project. Local farmers believed that the project increased their difficulties in obtaining seasonal help, although this problem has been experienced in other areas of the state as well. Farm wage and salary employment in Cavalier and Pembina counties was stable during the period 1969-73, and the same phenomenon was experienced statewide (Appendix Table 14). Farm operators in the Langdon area also experienced difficulty in getting rapid repair service on their vehicles, and this posed problems particularly during the harvest season.

#### Changes in Retail Sales Volume and Number of Firms

The ABM project substantially increased local retail sales volume in the communities near the sites. Over the period 1969-71 total sales by Langdon businesses increased 40.2 percent, while total sales in Cavalier and Nekoma increased 36.2 and 270.4 percent over the same period (Appendix Table 15). Other communities experiencing substantial sales gains during the construction period included Milton, Munich, and Osabrock, all in Cavalier County. In contrast, Devils Lake and Grand Forks had sales increases of 10 and 11 percent, respectively, over the same period.

Even larger increases in sales were experienced by some communities in 1972 and 1973 (see Appendix Table 15). However, much of this increase can probably be attributed to substantial increases in farm prices. Between 1971 and 1973 average prices received by farmers for spring wheat and durum (the leading cash crops in the area) more than doubled (see Appendix Table 16). Because agriculture is central to the area's economic base, increased farm prices had a substantial effect on economic activity area-wide. Appendix Table 17 contains background agricultural data for the area.

Increased business activity in Cavalier County during the period of the ABM construction is reflected by the increase in the number of retail trade and service firms in the county. From 1970 to 1972 the number of

retail and wholesale trade firms in Cavalier County increased 15.3 percent, from 78 firms in 1970 to 90 firms in 1973 (Appendix Table 18). The number of service firms increased 13.3 percent over the same period. It appears that the ABM project played a major role in reversing a trend of declining numbers of retail and wholesale firms in the county. The number of retail and wholesale firms had fallen from 92 in 1967 to 78 in 1970. A number of respondents to the 1974 survey commented that one effect of the ABM project was to keep several local businesses from closing. Between 1970 and 1974, 27 new businesses were formed in Langdon; 18 were expanded, rebuilt or relocated; and 18 changed hands.<sup>18</sup>

The Langdon area businessmen interviewed during the 1974 survey did not believe that the trade areas of the various communities had changed noticeably as a result of the project. They indicated that the ABM workers living in or near Langdon purchased almost all of their groceries, auto servicing, and other convenience items in Langdon. A few workers purchased automobiles in Langdon, but more went elsewhere. Few workers purchased furniture in Langdon.

Some of the short-term construction workers caused problems for local businessmen, particularly payment defaults. Locating the individuals who had defaulted was often a problem because some of the construction workers were quite mobile and moved from job to job on short notice. As a result, some businessmen stopped all charge account business in their stores. However, during the later stages of the project the work force composition shifted toward longer-term workers and these problems diminished.

#### Changes in Income and Earnings

Another indication of the economic impact of the ABM project is the changes in income and earnings in the affected counties. Total personal income in Cavalier County increased 202 percent between 1969 and 1972, while Pembina County experienced a 35 percent increase in total personal income (Appendix Table 19). Total personal income for the state increased 27 percent during the same period. Three of the other four counties in the general impact area experienced personal income increases less than the state average, while Grand Forks County with an increase of 28 percent was only slightly above the state average.

Changes in total earnings<sup>19</sup> follow the same general pattern as changes in income. Cavalier County experienced a dramatic growth in earnings (281.9 percent) between 1969 and 1972, while Pembina County experienced a more modest increase of 37.9 percent (Appendix Table 19). Both counties had a substantially larger percentage increase in earnings than the state as a whole. However, the other four counties had earnings' increases either near or below the state rate.

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<sup>18</sup>Boe, Edsel, op. cit.

<sup>19</sup>Earnings are defined as wages, salaries, and proprietors' incomes and do not include property income.

Farm earnings in Cavalier County were about the same in 1972 as in 1969, although substantial year-to-year variations occurred during the period (Table 17). Because farm earnings changed little while nonfarm earnings grew rapidly, farm earnings made up only 13.8 percent of total earnings in 1972 compared to 53.2 percent in 1969. Private nonfarm earnings jumped from \$4,727,000 in 1969 to \$23,433,000 in 1970 and \$37,136,000 in 1971. Much of this increase was accounted for by the contract construction sector which had total earnings of \$585,000 in 1969 and \$18,799,000 in 1970. (Unfortunately, data on contract construction earnings are not available for 1971 and 1972 because of disclosure rules.) Earnings in the trade and service sectors grew slowly at first, but by 1972 earnings in both sectors were nearly three times their 1969 levels.

### Effects on Financial Institutions

The ABM project had a noticeable effect on financial institutions in the Langdon area. Prior to the ABM project, the only financial institution in Langdon was the First Bank of Langdon. The total (demand plus time) deposits of the First Bank of Langdon for the period 1968-73 are compared with those of all North Dakota state banks in Table 18. (Demand deposits, time deposits, and loans of the First Bank of Langdon over the period 1965-73 are shown in Appendix Table 20.) Between 1969 and 1970, the total deposits of the First Bank of Langdon grew by 40.4 percent compared to a 7.8 percent growth for all state banks. However, in later years deposits of the First Bank of Langdon grew more slowly than those of all state banks. (Deposits and loans of all state and national banks in North Dakota and those of the Bank of North Dakota are shown in Appendix Table 21.)

During the period 1970-74 two new financial institutions were established in Langdon. Metropolitan Savings and Loan Association opened a branch office in Langdon in the fall of 1970. The deposits and loans of the Langdon branch office are shown in Table 19. The loans by this organization were almost exclusively used to finance new residential housing. Late in the ABM construction period a new bank was formed in Langdon. The Farmers and Merchants Bank was formed by a group of local people and received its charter on August 12, 1974. Deposits totaled \$488,000 in 1974 and \$1,225,093 in 1975.

### Changes in Costs of Goods and Services

An effect of the ABM project that area residents found undesirable was an increase in the cost of many locally purchased goods and services. While the ABM development took place during a period of spiraling inflation nationwide, almost 70 percent of the respondents to the 1974 survey believed that prices in the Langdon area had increased more rapidly than the general rate of inflation. Groceries were the item mentioned most frequently as having unusual price increases. However, many respondents indicated that price increases had been general and that many items had been affected.

Several explanations were advanced to explain the increases in the cost of living during the ABM development. One contributing factor was higher labor costs which caused retailers to increase markups and service shops to

TABLE 17. EARNINGS<sup>a</sup> BY BROAD INDUSTRIAL SECTOR, CAVALIER COUNTY, 1969-72 (THOUSANDS OF DOLLARS)

	Year				Percent Change 1969-1972	Year (percent of total earnings)			
	1969	1970	1971	1972		1969	1970	1971	1972
Total Labor and Proprietors' Earnings	14,745	28,907	51,884	56,310	281.9	100.0	100.0	100.0	100.0
Farm Earnings	7,849	2,812	10,720	7,770	-1.0	53.2	9.7	20.7	13.8
Total Nonfarm Earnings	6,896	26,095	41,164	48,540	603.9	46.8	90.3	79.3	86.2
Government Earnings	2,169	2,662	4,028	5,376	147.9	14.7	9.2	7.8	9.5
Federal Government	712	1,074	2,321	3,497	391.2	4.8	3.7	4.5	6.2
State and Local Government	1,457	1,588	1,707	1,879	311.2	9.9	5.5	3.3	3.3
Private Nonfarm Earnings	4,727	23,433	37,136	43,164	813.1	32.1	81.1	71.6	76.7
Wholesale and Retail Trade	2,056	2,380	3,396	5,587	171.7	13.9	8.2	6.5	9.9
Services	1,052	1,144	1,402	2,858	171.7	7.1	4.0	2.7	5.1
Other <sup>a</sup>	1,619	19,909	32,338	34,719	2,044.5	11.0	68.9	62.3	61.7

<sup>a</sup>Earnings are defined as wages, salaries, and proprietors' incomes and do not include property income.

<sup>b</sup>Includes manufacturing; mining; contract construction; transportation; communications; public utilities; finance, insurance, and real estate; and other miscellaneous activities.

Source: Appendix Table 19.

TABLE 18. DEPOSITS FOR FIRST BANK OF LANGDON AND ALL NORTH DAKOTA STATE BANKS, 1968-75

Year	Bank Deposits <sup>a</sup>			
	First Bank of Langdon		All North Dakota State Banks	
	Amount	Percent Increase from Previous Year	Amount	Percent Increase from Previous Year
1968	\$10,666,470	--	\$ 596,528,942	--
1969	11,638,114	9.1	636,145,426	6.6
1970	16,345,343	40.4	685,811,450	7.8
1971	17,417,290	6.6	763,645,565	11.3
1972	17,849,482	2.5	859,795,653	12.9
1973	19,277,801	8.0	1,018,663,604	18.5
1974	20,653,349	7.1	1,133,220,945	11.2
1975	22,489,092	8.9	1,224,327,044 <sup>b</sup>	8.0

<sup>a</sup>All deposits are as of December 31 of the year listed.

<sup>b</sup>Total deposits as of June 30, 1975.

Source: Report of Condition of North Dakota Banks, Department of Banking and Financial Institutions, Bismarck, North Dakota.

TABLE 19. DEPOSITS AND LOANS FOR THE LANGDON BRANCH OF METROPOLITAN SAVINGS AND LOAN ASSOCIATION, 1971-75

Date	Deposits	Loans
December 31, 1971	\$ 3,060,000	\$ 692,000
December 31, 1972	4,100,000	735,000
December 31, 1973	8,560,000	940,000
December 31, 1974	11,445,000	1,010,000
December 31, 1975	14,165,000	1,345,000

Source: Metropolitan Savings and Loan Association, Fargo, North Dakota.

raise rates. Another explanation was that local businesses were unable or unwilling to expand rapidly enough to meet increased demand, particularly during the early years of the project. Uncertainty about the duration of the project caused local businessmen to be hesitant to undertake large-scale expansions.

#### Effects on Community Activities and Quality of Life

Rapid population growth often brings about changes in community organizations and activities and may lead to changes in the quality of life as perceived by area residents. One objective of the 1974 survey was to gain

information on this dimension of the effects of the AEM project. The analysis of the effect the AEM project had on community activities and quality of life factors is based on limited data. In addition, not all community activities or quality of life factors were analyzed. One must be cautioned in drawing definitive conclusions from this section of the report. A comprehensive study of each community activity would be required if definitive conclusions were to be drawn. It is generally a matter of personal preference and values to decide which impacts are adverse. Therefore, given the limitation of the study, this section provides a general indication of the project's effects on community activities and on quality of life.

Many of the AEM workers came from outside North Dakota. Of the respondents to the 1974 survey, 29 percent had come to the area from outside the state. New Jersey, Minnesota, and Florida were the three most frequent states of previous residence. All persons interviewed were asked, "Do you feel the employees who came to work on the AEM sites were well accepted in your community?" Of the 137 persons who responded to this question, 118 or 86 percent indicated that the AEM workers were well accepted. Among those persons who had lived in the area less than three years (this group included many AEM workers), 72.5 percent said that the project workers and their families were well accepted in the community.

Many of the AEM workers who were interviewed felt they were not accepted immediately, but as the longer-term residents got to know them they were accepted quite well. Many respondents indicated that the workers who were in the area on short-term construction assignments took a very limited interest in community organizations and activities. This was believed to be particularly true of the short-term workers who had not brought families to the area. On the other hand, those workers whose jobs were of a longer duration and who brought their families to the area took a great interest in community affairs and were readily accepted into community organizations.

### Effects of Recreational Activities

As large numbers of new residents came to the area, the long-time residents and newcomers had to share the available recreation and entertainment facilities. When asked, "Do you participate as much in the same recreational activities now as before the AEM development?" 82 percent of the respondents who had lived in the area five years or longer indicated that there had been no major change in their recreational activities. Nine percent of these longer-term residents said their recreational participation had increased and 9 percent said it had decreased. Those who indicated decreased participation said this was because they had become too busy and because recreational facilities were overcrowded. Those who indicated increased recreational activity attributed their increased participation to more and better facilities. Some new recreational facilities (e.g., parks, softball diamonds) were established in Langdon during the AEM construction period.

Some AEM workers and families who had come to the area from warmer climates indicated that the form of their recreational activities had changed since coming to the area because the northeastern North Dakota climate was not conducive to the activities they had enjoyed previously (e.g., skin diving).



### Effects on Churches

Members of the clergy in Langdon were interviewed to determine the effect of the ABM project on the area's churches. The ABM workers' church attendance depended on their previous orientation. If the individuals were used to attending church, they continued to do so; if they were not regular churchgoers, they usually did not attend in Langdon. The short-term construction workers on the whole did not attend church very regularly, nor did they become involved in church activities. The more "permanent" ABM workers and their families became very much involved in church activities.

Premarital/marriage counseling was the major problem area encountered by the clergy, although family problems, loneliness, depression, and despondency were frequently occurring problems. There was no increase in counseling of local residents related directly to the ABM impact. Most problems of the ABM people were brought with them to the area, but some resulted from the transition to a small community and adjustment to the extremely cold winters, especially for the people who moved from much warmer climates.

Established church facilities generally were not expanded, but schedules were changed to accommodate increased attendance. Most churches having only one service were forced to switch to a two-service schedule. Two additional religious denominations (Baptist and Seventh Day Adventist) came into Langdon during the ABM project and formed church congregations.

In addition, between 1970 and 1974 six new churches were built in Langdon (Baptist, Seventh Day Adventist, United Lutheran, Methodist, Evangelical United Brethren, and Jehovah's Witnesses), but most were planned prior to the ABM development. The newcomers supported the churches well financially.

### Effects on the Local Newspaper

The ABM impact changed the type of news the local newspaper reported. The paper tried to cover the development of the ABM project quite thoroughly, which caused some of the older citizens to think too much newspaper coverage was being given to the ABM people. The circulation of the newspaper increased by 400 subscriptions, but approximately 100 local residents canceled their subscriptions because they saw fewer and fewer familiar names in the paper. These people wanted a community newspaper to report the local social news. The net result was an increased circulation of 300 copies. The advertising volume also increased locally after the ABM development began. Advertising was more frequent and larger ads appeared although they were not aimed primarily at the ABM workers. The purchase of an offset press by the newspaper reduced the publishing labor requirements as a number of people were bid away by the ABM project.

### Changes in Community Leadership

Very few of the short-term construction workers assumed leadership positions in the local community, but the more permanent workers in the later stages of construction assumed roles in community leadership. As new

residents lived in Langdon longer, they became more involved in community affairs and activities. Some ABM workers assumed major leadership roles in the city and many ABM workers became involved in local clubs and organizations. The ABM people helped to make a Boy Scout program possible in Langdon. ABM people also assumed leadership on the Country Club Board. At the time of the 1974 survey one member of the Nekoma school board was from the ABM work force. New clubs were formed as a result of ABM people and local residents joining together (e.g., an Eagles Club in Langdon). Many wives of ABM workers became very active in women's groups in the community.

### Overall Effects on the Community and Individuals

Area residents were asked for an overall evaluation of the effects of the ABM project on the community and on themselves as individuals. When asked, "In general, do you feel the development of the ABM site has been good or bad for this area?" the majority (83 percent) of those responding indicated that the effect had been favorable and only 13 percent indicated the effect had been detrimental (Table 20). Positive effects cited frequently included increased employment opportunities and increased business activity. The negative effects most frequently mentioned were increases in the cost of living and added burdens placed on local facilities and utilities by the increased population.

The effect of the development was judged to be favorable both by long-time residents and by relative newcomers to the area. However, the proportion of respondents who felt the effect was unfavorable was slightly lower (74.5 percent) among the life-long residents than for those who lived in the area for shorter periods of time (Table 20).

Area residents also were asked, "Do you feel you are personally better or worse off as a result of the ABM impact?" About 56 percent believed the changes brought by the ABM development had been personally beneficial, while 16 percent indicated that the effects of the project had been detrimental (Table 21). However, length of residence in the community appeared to have some influence on the response to the question. Those who had lived in the area 10 years or longer indicated negative effects more frequently than did those who had lived there for shorter periods of time (Table 21).

Response to this question also differed by occupation. Farmers most frequently indicated that the development had no effect on them personally. Businessmen generally indicated that they were personally better off as a result of the development. ABM workers and heavy equipment operators also indicated that they were personally better off as a result of the development.

Positive effects that were most frequently cited were economic in nature with the most frequent comments relating to improved employment opportunity and higher income. Those respondents who believed the development made them worse off most often cited the higher cost of living as the reason.

### Conclusions

The impact of the ABM system resulted in a variety of benefits and problems for Langdon and surrounding communities. Increased sales volumes

TABLE 20. OPINION AS TO WHETHER THE ABM DEVELOPMENT HAD A GENERAL POSITIVE OR NEGATIVE EFFECT ON THE LANGDON AREA BY LENGTH OF RESIDENCE IN THE COMMUNITY

Length of Residence	Positive		No Effect		Negative		Total
	Number	% of Row Total	Number	% of Row Total	Number	% of Row Total	
Less Than One Year	9	81.8	0	0.0	2	18.2	11
1 - 3 Years	21	84.0	1	4.0	3	12.0	25
3 - 5 Years	15	93.8	1	6.3	0	0.0	16
5 - 10 Years	7	77.8	0	0.0	2	22.2	9
More Than 10 Years, But Not Entire Life	19	95.0	0	0.0	1	5.0	20
Entire Life	38	74.5	4	7.8	9	17.6	51
Total	109	82.6	6	4.6	17	12.9	132 <sup>a</sup>

<sup>a</sup>Those who did not answer the question or who responded "do not know" were excluded from this table.

TABLE 21. OPINIONS AS TO WHETHER INDIVIDUALS FELT THEY WERE PERSONALLY BETTER OR WORSE OFF AS A RESULT OF THE ABM IMPACT, BY LENGTH OF RESIDENCE IN THE COMMUNITY

Length of Residence	Better		Same		Worse		Total
	Number	% of Row Total	Number	% of Row Total	Number	% of Row Total	
Less Than One Year	8	66.7	4	33.3	0	0.0	12
1 - 3 Years	17	70.8	4	16.7	3	12.5	24
3 - 5 Years	12	75.0	2	12.5	2	12.5	16
5 - 10 Years	7	87.5	0	0.0	1	12.5	8
More Than 10 Years, But Not Entire Life	10	50.0	4	20.0	6	30.0	20
Entire Life	21	38.9	23	42.6	10	18.5	54
Total	75	56.0	37	27.6	22	16.4	134 <sup>a</sup>

<sup>a</sup>Those who did not answer the question or who responded "do not know" were excluded from this table.

benefited local merchants and may even have saved some "main street" businesses, as well as adding new businesses. Federal impact funding improved the quality of some public services, such as streets, water and sewer systems, with additions to hospitals, schools, and law enforcement. New parks were built and old parks were improved. Additional religious denominations were formed and new churches were built. Employment opportunities slowed the out-migration from the rural ABM impact area and reduced existing underemployment levels. Perhaps the greatest benefit of the ABM project was the cultural benefit the rural community received from the influx of new people. The ABM personnel brought new ideas and a spirit of change to this community.

The ABM project also created problems for the Langdon community and surrounding area. Had it not been for the ABM development, the water and sewer systems would not have had to be rebuilt to the extent they were. The residents of Langdon frequently were without water for long periods of time during the construction of the new water system. The streets probably would not have needed to be replaced or upgraded so soon if the ABM project had not taken place. Further additions to the hospital in Langdon might not have been necessary.

Some citizens of Langdon and surrounding communities may have been made worse off financially as a result of the ABM project. Some residents felt higher taxes resulted from the improvements in the water systems and streets, even though federal funding was provided. Such improvements, they felt, would not have been necessary in the absence of the ABM project. The ABM system caused an increase in the cost of living for the residents of Langdon. This was especially reflected in housing costs. The increase in the cost of living had the most adverse effect on those residents with fixed incomes.

Extensive coal development in western North Dakota could result in impacts on individual communities similar to those the ABM project development had on Langdon and surrounding communities. The experience Langdon and surrounding communities had during the ABM project provides insights for other communities facing similar socioeconomic impacts resulting from coal-energy development. The following steps should be taken by communities that are expecting large population increases:

1. Inventory the increased needs for labor, capital and credit, and for natural resources resulting from the new development.
2. Examine the existing infrastructure to determine where the existing capacity would not be sufficient to satisfy the demand imposed by the projected increase in population.
3. Plan and design in advance of the projected needs. For example, a comprehensive land-use plan with its accompanying zoning and subdivision regulations can help the potential impacted communities to control their own destiny. A continuing program of monitoring and growth management during the period of rapid growth will be needed also.

The benefits and problems of a large and rapid population increase are many. The effects of an influx of people will vary with the type of project,

the area involved, and the rapidity of the influx. Problems exist for both the work force and the local community, but the local people are the ones who must prepare for the impact and face the consequences of it. The problems in Langdon arose mainly from the great numbers of people and the speed with which they arrived in the small farming community. There simply was not enough lead time for communities to plan effectively for the increased populations.

The problems of Langdon may be summarized by a quote from one of the residents when asked how the impact affected Langdon, "The impact on Langdon can be compared to the problems a 180-pound person would have if he woke up one morning weighing 250 pounds." Now, it appears, this person may have to adjust to a rapid decline in weight due to abandonment of the ABM project. Monitoring the shutdown of the ABM project could also be of value to communities that may experience similar effects due to the possible boom-bust nature of coal development or the proposed shutdown of other defense department installations.



Appendix





APPENDIX TABLE 1. COUNT OF PERSONS BY AGE AND SEX, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

Age	Cavalier		Grand Forks		Nelson		Pembina		Ramsey		Walsh	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under 2	121	105	1,260	1,164	76	65	158	173	202	186	221	207
2-3	124	131	1,069	1,004	68	68	147	146	195	206	265	205
4-5	164	185	1,134	1,101	88	83	191	168	246	233	254	290
6-7	187	164	1,274	1,157	100	93	214	196	283	295	345	311
8-9	177	200	1,296	1,276	133	106	199	214	290	269	360	329
10-11	209	206	1,286	1,293	143	133	251	250	285	298	346	345
12-13	217	202	1,190	1,150	113	120	264	261	308	277	364	360
14-15	221	191	1,145	1,085	134	115	273	277	318	279	413	381
16-17	190	182	1,020	952	127	111	269	250	266	293	389	353
18-19	97	76	1,787	1,801	52	25	119	127	284	230	197	186
20-24	149	162	5,590	4,027	113	98	220	262	321	381	404	407
25-29	179	174	2,470	2,057	121	95	239	223	355	324	443	414
30-34	179	192	1,733	1,766	120	138	215	227	275	304	382	364
35-39	208	215	1,816	1,528	126	122	265	284	282	304	388	409
40-44	229	222	1,375	1,351	174	153	306	315	341	337	451	427
45-49	241	228	1,249	1,237	197	167	345	303	344	318	463	472
50-54	254	199	1,129	1,093	194	172	315	287	342	349	498	569
55-59	254	224	971	998	194	158	317	325	350	356	492	433
60-64	260	213	826	858	177	179	262	269	328	318	447	395
65-69	185	192	632	787	157	158	239	254	287	290	329	377
70-74	175	139	563	721	141	166	218	210	238	254	303	309
75 and Over	187	204	775	1,106	244	259	317	364	317	357	448	506
Total	4,207	4,006	31,590	29,512	2,992	2,784	5,343	5,385	6,457	6,458	8,202	8,049

Source: 1970 Census of Population, General Population Characteristics, North Dakota, PC(1)-B36, U.S. Department of Commerce, Bureau of the Census, U.S. Government Printing Office, Washington, D.C., August, 1971.

APPENDIX TABLE 2. POPULATION 16+ BY LABOR FORCE STATUS, SELECTED CHARACTERISTICS AND SEX, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA

	Cavalier		Grand Forks		Nelson		Pembina		Ramsey		Walsh	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
In Armed Forces	7	0	4,809	57	5	0	0	0	16	0	0	0
In Labor Force												
Employed	1,764	654	11,196	7,882	1,387	542	2,241	997	2,888	1,525	3,381	1,857
Unemployed	58	24	482	372	81	14	93	38	139	71	170	63
Not in Labor Force												
Under 65												
Inmate	14	0	11	34	7	22	12	22	37	35	442	470
Enrolled in School	211	181	3,086	2,413	136	99	276	266	285	287	304	275
Other	337	1,294	827	7,305	126	774	433	1,563	322	1,679	444	1,956
65 and Over												
Inmate	11	0	164	234	60	76	25	57	103	148	63	95
Enrolled in School	0	10	23	29	0	0	0	6	0	0	11	0
Other	379	462	1,347	2,006	337	451	586	711	519	658	780	916
Total	2,781	2,625	21,945	20,332	2,139	1,978	3,666	3,660	4,309	4,403	5,595	5,632

Source: Ostenson, Thomas K., North Dakota Employment Characteristics by Counties, 1970 Census of Population, Agricultural Economics Statistical Series, Issue No. 7, Department of Agricultural Economics, North Dakota State University, April, 1972.

APPENDIX TABLE 3. WORK PARTICIPATION RATES IN LABOR FORCE<sup>a</sup> FOR CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

Age	Both Sexes			Male			Female		
	Total Persons	In Labor Force	Percent Participation Rate	Total Persons	In Labor Force	Percent Participation Rate	Total Persons	In Labor Force	Percent Participation Rate
<b>Cavalier County:</b>									
16-17	383	61	15.9	204	36	17.6	179	25	14.0
18-19	202	95	47.0	102	46	45.1	100	49	49.0
20-21	87	46	52.9	32	19	59.4	55	27	49.1
22-24	181	115	63.5	92	74	80.4	89	41	46.1
25-34	697	412	59.1	341	315	92.4	356	97	27.2
35-44	901	507	56.3	454	391	86.1	447	116	26.0
45-64	1,873	1,051	56.1	1,009	791	78.4	864	260	30.1
65+	1,082	220	20.3	547	157	28.7	535	63	11.8
Total	5,406	2,507	46.4	2,781	1,829	65.8	2,625	678	25.8
<b>Grand Forks County:</b>									
16-17	2,003	745	37.2	1,001	414	41.4	1,002	331	33.0
18-19	3,524	1,647	46.7	1,780	872	49.0	1,744	775	44.4
20-21	4,804	2,897	60.3	2,738	1,798	65.7	2,066	1,099	53.2
22-24	4,894	3,458	70.7	2,882	2,344	81.3	2,012	1,114	55.4
25-34	8,023	5,318	66.3	4,247	3,876	91.3	3,776	1,442	38.2
35-44	6,076	4,189	68.9	3,146	3,020	96.0	2,930	1,169	39.9
45-64	8,366	5,760	68.9	4,177	3,723	89.1	4,189	2,037	48.6
65+	4,587	784	17.1	1,974	440	22.3	2,613	344	13.2
Total	42,277	24,798	58.7	21,945	16,487	75.1	20,332	8,311	40.9
<b>Nelson County:</b>									
16-17	236	40	16.9	119	20	16.8	117	20	17.1
18-19	63	34	54.0	55	34	61.8	8	0	0.0
20-21	74	48	64.9	42	31	73.8	32	17	53.1
22-24	132	89	67.4	78	73	93.6	54	16	29.6
25-34	445	283	63.6	234	213	91.0	211	70	33.2
35-44	604	415	68.7	307	296	96.4	297	119	40.1
45-64	1,438	917	63.8	762	661	86.7	676	256	37.9
65+	1,125	201	17.9	542	145	26.8	583	56	9.6
Total	4,117	2,029	49.3	2,139	1,473	68.9	1,978	556	28.1
<b>Pembina County:</b>									
16-17	527	91	17.3	278	51	18.3	249	40	16.1
18-19	206	97	47.1	125	69	55.2	81	28	34.6
20-21	135	95	70.4	82	68	82.9	53	27	50.9
22-24	342	194	56.7	137	112	81.8	205	82	40.0
25-34	823	531	64.5	400	373	93.3	423	158	37.4
35-44	1,257	781	62.1	620	543	87.6	637	238	37.4
45-64	2,412	1,341	55.6	1,240	945	76.2	1,172	396	33.8
65+	1,124	239	21.3	284	173	60.9	840	66	7.9
Total	6,826	3,369	49.4	3,166	2,334	73.7	3,660	1,035	28.3
<b>Ramsey County:</b>									
16-17	518	161	31.1	241	68	28.2	277	93	33.6
18-19	531	270	50.8	281	155	55.2	250	115	46.0
20-21	321	209	65.1	147	118	80.3	174	91	52.3
22-24	372	273	73.4	181	156	86.2	191	117	61.3
25-34	1,271	835	65.7	633	594	93.8	638	241	37.8
35-44	1,251	840	67.1	620	586	94.5	631	254	40.3
45-64	2,705	1,736	64.2	1,364	1,146	84.0	1,341	590	44.0
65+	1,743	315	18.1	842	220	26.1	901	95	10.5
Total	8,712	4,639	53.2	4,309	3,043	70.6	4,403	1,596	36.2
<b>Walsh County:</b>									
16-17	763	200	26.2	390	134	34.4	373	66	17.7
18-19	346	145	41.9	166	71	42.8	180	74	41.1
20-21	319	165	51.7	142	82	57.7	177	83	46.9
22-24	480	321	66.9	253	205	81.0	227	116	51.1
25-34	1,625	950	58.5	828	651	78.6	797	299	37.5
35-44	1,653	988	59.8	836	691	82.7	817	297	36.4
45-64	3,769	2,205	60.9	1,900	1,491	78.5	1,869	804	43.0
65+	2,272	407	17.9	1,080	226	20.9	1,192	181	15.2
Total	11,227	5,471	48.7	5,595	3,551	63.5	5,632	1,920	34.1

<sup>a</sup>The labor force includes both civilian and military sectors.

Source: Ostenson, Thomas K., *North Dakota Employment Characteristics by Counties, 1970 Census of Population, Agricultural Economics Statistical Series, Issue No. 7*, Department of Agricultural Economics, North Dakota State University, April, 1972.

APPENDIX TABLE 4. COUNT OF PERSONS 16+ IN THE LABOR FORCE BY AGE COHORT, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

Age	Cavalier		Grand Forks		Nelson		Pembina		Ramsey		Walsh	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
16-17	36	25	414	331	20	20	51	40	68	93	134	66
18-19	46	49	872	775	34	0	69	28	155	115	71	74
20-21	19	27	1,798	1,099	31	17	68	27	118	91	82	83
22-24	74	41	2,344	1,114	73	18	112	82	156	117	205	116
25-34	315	97	3,876	1,442	213	70	373	158	594	241	651	299
35-44	391	116	3,020	1,169	296	119	543	238	586	254	691	297
45-64	791	260	3,723	2,037	661	256	945	396	1,146	590	1,491	804
65+	157	63	440	344	145	56	173	66	220	95	226	181
Total	1,829	678	16,487	8,311	1,473	556	2,334	1,035	3,043	1,596	3,551	1,920

Source: Ostenson, Thomas K., North Dakota Employment Characteristics by Counties, 1970 Census of Population, Agricultural Economics Statistical Series, Issue No. 7, Department of Agricultural Economics, North Dakota State University, April, 1972.

APPENDIX TABLE 5. EMPLOYED PERSONS 16+ BY OCCUPATION AND SEX FOR CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

	Cavalier				Grand Forks				Nelson			
	Total	Percent	Male	Female	Total	Percent <sup>a</sup>	Male	Female	Total	Percent <sup>a</sup>	Male	Female
Professional, Technical, and Kindred Workers	220	9.1	54	166	3,550	18.6	1,938	1,612	129	6.7	59	70
Engineers	0	0.0			141	.7			3	.2		
Physicians, Dentists, and Related Practitioners	16	.7			121	.6			9	.5		
Health Workers, Except Practitioners	27	1.1			484	2.5			20	1.0		
Teachers, Elementary and Secondary Schools	102	4.2			771	4.0			66	3.4		
Technicians, Except Health	4	.2			205	1.1			6	.3		
Other Professional Workers	71	2.9			1,828	9.6			25	1.3		
Managers and Administrators, Except Farm	221	9.1	176	45	1,985	10.4	1,665	320	179	9.3	155	24
Salaried: Manufacturing	0	0.0			89	.5			0	0.0		
Retail Trade	41	1.7			567	3.0			42	2.2		
Other Industries	85	3.5			1,040	5.5			88	4.6		
Self-Employed: Retail Trade	46	1.9			130	.7			44	2.3		
Other Industries	49	2.0			159	.8			5	.3		
Sales Workers	108	4.5	58	50	1,504	7.9	812	692	94	4.9	36	58
Retail Trade	73	3.0			1,007	5.3			77	4.0		
Other Than Retail Trade	35	1.4			497	2.6			17	.9		
Clerical and Kindred Workers	188	7.8	38	150	3,029	15.9	596	2,433	141	7.3	42	99
Craftsmen, Foremen, and Kindred Workers	149	6.2	143	6	2,204	11.6	2,089	115	158	8.2	147	11
Automobile Mechanics, Including Body Repairmen	14	.6			238	1.2			12	.6		
Mechanics and Repairmen, Except Automobile	25	1.0			434	2.3			32	1.7		
Metal Craftsmen, Except Mechanics	20	.8			75	.4			8	.4		
Construction Craftsmen	59	2.4			629	3.3			53	2.7		
Other Craftsmen	31	1.3			828	4.3			53	2.7		
Operatives, Except Transport	57	2.4	49	8	1,015	5.3	572	443	57	3.0	38	19
Durable Goods, Manufacturing	0	0.0			73	.4			4	.2		
Nondurable Goods, Manufacturing	5	.2			360	1.9			6	.3		
Nonmanufacturing Industries	52	2.2			582	3.1			47	2.4		
Transport Equipment Operatives	44	1.8	44	0	584	3.1	579	5	62	3.2	62	0
Laborers, Except Farm	76	3.1	67	9	643	3.4	596	47	47	2.4	47	0
Construction Laborers	37	1.5			76	.4			3	.2		
Freight, Stock, and Material Handlers	11	.5			350	1.8			12	.6		
Other Laborers, Except Farm	28	1.2			217	1.1			32	1.7		
Farmers and Farm Managers	978	40.4	954	24	947	5.0	931	16	659	34.2	619	40
Farm Laborers and Farm Foremen	117	4.8	107	10	283	1.5	265	18	104	5.4	104	0
Service Workers, Except Private Household	200	8.3	70	130	3,032	15.9	1,153	1,879	247	12.8	78	169
Cleaning Service Workers	44	1.8			725	3.8			27	1.4		
Food Service Workers	115	4.8			1,203	6.3			117	6.1		
Health Service Workers	15	.6			449	2.4			43	2.2		
Personal Service Workers	19	.8			347	1.8			53	2.7		
Protective Service Workers	0	0.0			155	.8			7	.4		
Private Household Workers	60	2.5	4	56	302	1.6	0	302	52	2.7	0	52
Total Employed 16 Years Old and Over	2,418	100.0	1,764	654	19,078	100.2	11,196	7,882	1,929	100.1	1,387	542

APPENDIX TABLE 5. EMPLOYED PERSONS 16+ BY OCCUPATION AND SEX FOR CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 (CONTINUED)

	Pembina				Ramsey				Walsh			
	Total	Percent <sup>a</sup>	Male	Female	Total	Percent <sup>a</sup>	Male	Female	Total	Percent	Male	Female
Professional, Technical, and Kindred Workers	363	11.2	178	185	589	13.3	327	262	566	10.8	259	307
Engineers	10	.3			10	.2			10	.2		
Physicians, Dentists, and Related Practitioners	25	.8			40	.9			46	.9		
Health Workers, Except Practitioners	32	1.0			68	1.5			70	1.3		
Teachers, Elementary and Secondary Schools	143	4.4			209	4.7			240	4.6		
Technicians, Except Health	13	.4			32	.7			26	.5		
Other Professional Workers	140	4.3			230	5.2			174	3.3		
Managers and Administrators, Except Farm	355	11.0	272	83	522	11.8	443	79	497	9.5	405	92
Salaries: Manufacturing	22	.7			23	.5			24	.5		
Retail Trade	49	1.5			115	2.6			80	1.5		
Other Industries	164	5.1			295	6.7			242	4.6		
Self-Employed: Retail Trade	73	2.3			36	.8			76	1.5		
Other Industries	47	1.5			53	1.2			75	1.4		
Sales Workers	157	4.8	95	62	342	7.7	218	124	276	5.3	151	125
Retail Trade	109	3.4			200	4.5			216	4.1		
Other Than Retail Trade	48	1.5			142	3.2			60	1.1		
Clerical and Kindred Workers	336	10.4	122	214	507	11.5	136	371	579	11.1	105	474
Craftsmen, Foremen, and Kindred Workers	405	12.5	400	5	347	7.9	329	18	543	10.4	529	14
Automobile Mechanics, Including Body Repairmen	138	4.3			48	1.1			71	1.4		
Mechanics and Repairmen, Except Automobile	60	1.9			79	1.8			76	1.5		
Metal Craftsmen, Except Mechanics	11	1.3			5	.1			15	.3		
Construction Craftsmen	105	3.2			93	2.1			212	4.0		
Other Craftsmen	91	2.8			122	2.8			169	3.2		
Operatives, Except Transport	213	6.6	154	59	184	4.2	145	39	374	7.1	258	116
Durable Goods, Manufacturing	38	1.2			5	.1			3	.1		
Nondurable Goods, Manufacturing	34	1.1			9	.2			69	1.3		
Nonmanufacturing Industries	141	4.4			170	3.9			302	5.8		
Transport Equipment Operatives	66	2.0	62	4	124	2.8	124	0	148	2.8	138	10
Laborers, Except Farm	171	5.3	143	28	106	2.4	77	29	147	2.8	122	25
Construction Laborers	25	.8			14	.3			25	.5		
Freight, Stock, and Material Handlers	90	2.8			71	1.6			64	1.2		
Other Laborers, Except Farm	56	1.7			21	.5			58	1.1		
Farmers and Farm Managers	542	16.7	537	5	724	16.4	720	4	957	18.3	946	11
Farm Laborers and Farm Foremen	174	5.4	163	11	139	3.1	134	5	326	6.2	307	19
Service Workers, Except Private Households	390	12.0	115	275	778	17.6	235	543	745	14.2	161	584
Cleaning Service Workers	97	3.0			121	2.7			107	2.0		
Food Service Workers	177	5.5			301	6.8			172	3.3		
Health Service Workers	53	1.6			181	4.1			255	4.9		
Personal Service Workers	20	.6			59	1.3			162	3.1		
Protective Service Workers	11	.3			41	.9			14	.3		
Private Household Workers	66	2.0	0	66	51	1.2	0	51	80	1.5	0	80
Total Employed 16 Years Old and Over	3,238	99.9	2,241	997	4,413	99.9	2,888	1,525	5,238	100.0	3,381	1,857

<sup>a</sup>Percent may not total 100 due to rounding.

Source: Characteristics of the Population, 1970 Census of Population, U.S. Department of Commerce, Bureau of the Census, North Dakota.

APPENDIX TABLE 6. COUNT OF PERSONS 25 YEARS OLD AND OVER BY SEX AND YEARS OF SCHOOL COMPLETED, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

	Cavalier				Grand Forks				Nelson			
	Male	Female	Total	Percent	Male	Female	Total	Percent <sup>a</sup>	Male	Female	Total	Percent <sup>a</sup>
No School Years Completed	9	5	14	.3	47	19	66	.2	23	0	23	.6
Elementary												
1-4 Years	113	56	169	3.7	216	186	402	1.5	81	48	129	3.6
5-6 Years	124	94	218	4.8	380	408	788	2.9	63	81	144	4.0
7 Years	120	80	200	4.4	458	212	670	2.5	66	88	154	4.3
8 Years	865	519	1,384	30.4	2,631	2,373	5,004	18.5	769	476	1,245	34.5
Total	1,222	749	1,971	43.3	3,685	3,179	6,864	25.4	979	693	1,672	46.3
High School												
1-3 Years	226	221	447	9.8	1,376	1,563	2,939	10.9	184	198	382	10.6
4 Years	581	642	1,223	26.9	3,999	4,572	8,571	31.7	431	514	945	26.2
Total	807	863	1,670	36.7	5,375	6,135	11,510	42.5	615	712	1,327	36.7
College												
1-3 Years	213	506	719	15.8	1,799	2,616	4,415	16.3	140	303	443	12.3
4 Years	58	79	137	3.0	1,202	1,174	2,376	8.8	43	50	93	2.6
5+ Years	42	0	42	.9	1,436	385	1,821	6.7	45	9	54	1.5
Total	313	585	898	19.7	4,437	4,175	8,612	31.8	228	362	590	16.3
Total	2,351	2,202	4,553	100.0	13,544	13,508	27,052	99.9	1,845	1,767	3,612	99.9
-----												
	Pembina				Ramsey				Walsh			
	Male	Female	Total	Percent <sup>a</sup>	Male	Female	Total	Percent <sup>a</sup>	Male	Female	Total	Percent
No School Years Completed	18	3	21	.3	15	42	57	.8	329	287	616	6.6
Elementary												
1-4 Years	98	79	177	2.9	97	94	191	2.7	238	164	402	4.3
5-6 Years	180	183	363	5.9	147	178	325	4.7	267	260	527	5.7
7 Years	242	90	332	5.4	197	115	312	4.5	293	171	464	5.0
8 Years	875	721	1,596	26.1	896	690	1,586	22.8	1,488	1,179	2,667	28.6
Total	1,395	1,073	2,468	40.4	1,337	1,077	2,414	34.6	2,286	1,774	4,060	43.6
High School												
1-3 Years	426	364	790	12.9	390	466	856	12.3	476	497	973	10.4
4 Years	743	941	1,684	27.5	901	1,129	2,030	29.1	923	1,224	2,147	23.0
Total	1,169	1,305	2,474	40.5	1,291	1,595	2,886	41.4	1,399	1,721	3,120	33.5
College												
1-3 Years	255	588	843	13.8	453	606	1,059	15.2	343	711	1,054	11.3
4 Years	119	93	212	3.5	215	144	359	5.2	145	158	303	3.3
5+ Years	88	10	98	1.6	148	47	195	2.8	142	24	166	1.8
Total	462	691	1,153	18.9	816	797	1,613	23.1	630	893	1,523	16.3
Total	3,044	3,072	6,116	100.1	3,459	3,511	6,970	99.9	4,644	4,675	9,319	100.0

<sup>a</sup>May not total 100 due to rounding.

Source: Ostenson, Thomas K., North Dakota Education Characteristics by Counties, 1970 Census of Population, Agricultural Economics Statistical Series, Issue No. 8, Department of Agricultural Economics, North Dakota State University, April, 1972.

APPENDIX TABLE 7. GENERAL HOUSING CHARACTERISTICS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970

County	All Housing Units	Vacant Seasonal and Migratory	All Year-Round Units	Owner Occupied Units	Renter Occupied Units	Vacant Year-Round Units	Population in Housing Units	Population Per Housing Unit	Units With All Plumbing Facilities	Units Lacking Some or All Plumbing Facilities	Median Rooms All Units	Median Persons All Units
Cavalier	2,932	46	2,886	1,922	546	418	8,288	3.4	2,334	552	5.4	2.7
Grand Forks	18,192	118	18,074	8,656	8,319	1,099	54,947	3.2	16,921	1,153	4.8	2.8
Nelson	2,201	5	2,196	1,474	406	316	5,647	3.0	1,735	461	5.5	2.4
Pembina	3,880	182	3,698	2,558	713	427	10,471	3.2	3,063	635	5.5	2.7
Ramsey	4,387	74	4,313	2,628	1,214	471	12,235	3.2	3,725	588	5.1	2.5
Walsh	5,307	133	5,174	3,641	992	541	14,764	3.2	4,219	955	5.3	2.6

Source: Housing Characteristics for State, Cities and Counties, 1970 Census of Housing, U.S. Department of Commerce, Bureau of the Census, Volume 1, Part 36.



APPENDIX TABLE 8. DETAILED HOUSING CHARACTERISTICS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA

County	Telephones		Automobiles				Home Heating Fuel							Sources of Water			
	Avail- able	None	One	Two	Three or More	None	Utility Gas	Kerosene	Coal or Coke	Wood	Electri- city	L.P. Gas	Other Fuel	None	Public System or Private Company	Individual Well	Other
Cavalier	2,238	180	1,602	535	96	235	43	1,900	84	0	102	334	0	0	860	1,926	86
Grand Forks	16,070	905	9,799	4,503	811	1,862	5,383	9,933	200	0	434	778	407	0	15,619	906	1,548
Nelson	1,766	114	1,135	422	83	240	0	1,468	99	0	95	285	0	0	907	1,114	173
Pembina	2,955	316	2,074	746	101	355	84	2,753	82	0	63	308	0	0	1,964	747	986
Ramsey	3,521	321	2,273	839	264	466	81	2,709	139	0	84	550	281	0	2,417	1,598	298
Walsh	4,158	475	2,926	1,084	204	419	23	3,981	77	0	141	462	0	0	2,528	1,386	1,277

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County	Sewage Disposal			Heating Equipment of Units							
	Public Sewer	Septic Tank or Cesspool	Other	Steam or Hot Water	Warm- Air Furnace	Built-In Electric Units	Floor, Wall, or Pipeless Furnace	Room Heaters With Flue	Room Heaters Without Flue	Fireplace Stoves or Portable Heaters	None
Cavalier	980	1,466	426	315	1,745	102	58	581	68	0	17
Grand Forks	15,470	2,050	553	3,290	11,809	413	230	1,856	320	35	71
Nelson	1,032	821	341	319	999	100	109	624	20	10	15
Pembina	1,845	1,325	527	320	2,250	111	114	733	81	42	47
Ramsey	2,533	1,390	390	863	2,593	130	51	480	134	40	22
Walsh	2,748	1,691	752	821	2,631	109	122	1,182	159	41	109

Source: Detailed Housing Characteristics North Dakota, 1970 Census of Housing, U.S. Department of Commerce, Bureau of Census, Series HC(1)-E36, January, 1972.

APPENDIX TABLE 9. POPULATION CHANGE AND NET MIGRATION TO AND FROM CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1960 TO 1970

County	Population		1960 to 1970		Components of Change			Rate of Net Migration <sup>b</sup>
	1960	1970	Population Change		Number of Births to Resident Mothers	Number of Resident Deaths	Net Migration	
	Number	Number	Amount	Rate <sup>a</sup>				
Cavalier	10,064	8,213	1,851	-18.4	1,805	912	-2,744	-27.3
Grand Forks	48,677	61,102	12,425	25.5	15,114	3,995	+1,316	2.7
Nelson	7,034	5,776	1,258	-17.9	1,111	825	-1,544	-22.0
Pembina	12,946	10,728	2,218	-17.1	2,189	1,300	-3,107	-24.0
Ramsey	13,443	12,915	528	- 3.9	2,730	1,343	-1,915	-14.2
Walsh	2,043	1,722	321	-15.7	3,255	1,697	-3,304	-18.4

<sup>a</sup>Population change expressed as a percent of 1960 population.

<sup>b</sup>Net migration expressed as a percent of 1960 population. A plus sign (+) indicates net in-migration and a minus sign (-) indicates net out-migration.

Source: U.S. Bureau of the Census, 1970 U.S. Census of Population: Final Population Counts, PC(VI)-36, October, 1970; and unpublished tabulation of the Division of Vital Statistics, North Dakota Department of Health.

APPENDIX TABLE 10. ENROLLMENT IN SELECTED SCHOOL DISTRICTS, NORTHEASTERN NORTH DAKOTA, 1968-75<sup>a</sup>

School District	District Number	Year							
		1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
Cavalier County									
Langdon	23	1,016	963	1,301	1,419	1,477	1,589	1,433	1,332
St. Alphonsus		219*	205*	213*	220*	221*	232*	213*	178*
Milton	30	120	123	136	144	137	150	138	124
Nekoma	36	88	80	110	109	97	204	223	300
Osnabrock	1	102	104	103	117	115	109	109	111
Grand Forks County									
Grand Forks	1	11,318	11,532	11,582	11,203	11,030	10,584	9,827	9,840
Nelson County									
Lakota	66	521	541	551	524	534	482	465	462
Pembina County									
Cavalier	6	802	783	783	836	1,006	1,058	954	841
Drayton	19	466	433	458	426	410	397	378	386
Pembina	1	281	264	259	261	254	247	232	207
Walhalla	27	713	682	703	720	711	680	614	594
St. Boniface		124*	139*	129*	104*	98*	93*	90*	69*
Ramsey County									
Devils Lake	1	1,961	1,975	2,083	2,112	2,100	2,048	2,048	2,100
Edmore	2	450	349	373	383	376	341	317	287
Walsh County									
Edinburg	106	298	277	278	286	278	266	247	244
Fordville	79	175	183	203	211	218	208	191	184
Grafton	3	1,617	1,593	1,583	1,559	1,552	1,502	1,452	1,527
Minto	20	278	302	303	329	332	324	324	334
Park River	800	744**	713**	705**	705**	697	697	661	612
North Dakota Total		167,012	164,191	163,083	160,227	157,016	153,977	149,013	146,636

\*Grades 1 through 8 only.

\*\*The total includes Grades 1-8 from Park River plus the Walsh County Agricultural School.

<sup>a</sup>Enrollments as of September 15.

Source: North Dakota Educational Directory, Department of Public Instruction, M.F. Peterson, Superintendent, Bismarck, North Dakota, 1968-69, 1969-70, 1970-71, 1971-72, 1972-73, 1973-74, 1974-75, and 1975-76.

APPENDIX TABLE 11. SCHOOL ENROLLMENT AND TEACHERS IN NEKOMA PUBLIC SCHOOLS, 1967-75

School Year	Grades 1-8			Grades 9-12		
	Students	Teachers	Ratio	Students	Teachers	Ratio
1967-68	54	3	18.0	31	6	5.2
1968-69	56	4	14.0	32	6	5.3
1969-70	50	4	12.5	30	4.25	7.1
1970-71	74	4.25	17.4	36	4.25	8.5
1971-72	76	5	15.2	33	3.5	9.4
1972-73	60	5	12.0	37	3.5	10.6
1973-74	157	8	19.6	47	5	9.4
1974-75	175	10	17.5	48	6.5	7.4
1975-76	234	11.5	20.3	66	7	9.4

Source: North Dakota Educational Directory, Department of Public Instruction, M. F. Peterson, Superintendent, Bismarck, North Dakota, 1967-68 to 1975-76.

APPENDIX TABLE 12. SCHOOL ENROLLMENT AND TEACHERS IN CAVALIER PUBLIC SCHOOLS, 1967-75

School Year	Grades 1-8			Grades 9-12		
	Students	Teachers	Ratio	Students	Teachers	Ratio
1967-68	527	19	27.7	275	16	17.2
1968-69	520	25	20.8	282	14	20.1
1969-70	503	23.5	21.4	280	16	17.5
1970-71	511	21.2	24.1	272	14.2	19.2
1971-72	549	20.2	27.2	287	13.6	21.1
1972-73	667	25.4	26.3	339	15.7	21.6
1973-74	712	26.6	26.8	346	16.6	20.8
1974-75	638	27.6	23.1	316	17.4	18.2
1975-76	565	29.2	19.3	276	16.3	16.9

Source: North Dakota Educational Directory, Department of Public Instruction, M. F. Peterson, Superintendent, Bismarck, North Dakota, 1967-68 to 1975-76.

APPENDIX TABLE 13. ASSESSED VALUATION OF REAL PROPERTY FOR SELECTED COUNTIES IN NORTHEASTERN NORTH DAKOTA, 1965-74

	100 Percent Valuation							
	Land		Business and Residential Property					Total Assessed Value of All Real Property
	Total Acres Assessed as Land	Average Value Per Acre	Total Assessed Value of Land	Business Lots, Tracts, and Leased Sites	Business Structures	Residential Lots, Tracts, and Leased Sites	Residential Structures	
<b>Cavalier County</b>								
1974	\$934,577.54	\$19.16	\$17,903,286	\$ 277,607	\$ 1,985,503	\$ 244,876	\$ 2,527,047	\$22,938,319
1973	935,412.53	19.14	17,902,763	270,619	1,873,090	236,725	2,432,579	22,715,776
1972	939,231.65	19.11	17,948,838	254,970	1,283,464	241,321	2,299,119	22,027,712
1971	943,411.15	19.09	18,011,630	214,825	1,171,466	225,314	2,204,596	21,827,831
1970	947,120.92	19.06	18,053,597	327,739 <sup>a</sup>	1,030,255	a	2,076,937	21,434,050
1969	951,357.00	19.03	18,102,396	1,130,686 <sup>b</sup>	b	2,262,443 <sup>c</sup>	c	21,495,525
1968	952,760.00	18.35	17,485,912	d	1,025,160	d	1,840,913	20,665,865
1967	953,165.00	18.47	17,601,161	783,273 <sup>b</sup>	b	2,028,524	c	20,412,958
1966	953,206.00	18.72	17,839,365	d	784,364	d	1,681,214	20,622,261
1965	953,319.00	18.72	17,845,773	d	783,131	d	1,654,129	20,597,279
<b>Pembina County</b>								
1974	687,531.00	29.70	20,416,742	224,550	7,098,710	549,097	4,007,968	32,297,067
1973	687,814.00	29.69	20,442,906	211,360	6,957,833	539,788	3,868,351	32,000,238
1972	685,849.53	29.58	20,290,594	209,560	6,421,234	501,801	3,609,132	31,032,321
1971	691,252.00	29.43	20,341,440	201,766	6,329,673	504,702	3,437,672	30,815,253
1970	694,721.16	29.05	20,182,553	671,447 <sup>a</sup>	6,392,168	a	3,296,735	30,426,868
1969	700,857.00	29.01	20,334,884	6,519,407 <sup>b</sup>	b	3,699,816 <sup>c</sup>	c	30,554,107
1968	700,857.00	27.07	18,972,944	d	6,141,781	d	2,871,310	28,544,228
1967	702,305.00	27.07	19,009,057	4,851,241 <sup>b</sup>	b	3,197,553 <sup>c</sup>	c	27,057,851
1966	700,207.00	24.12	16,887,360	d	5,391,420	d	2,353,180	25,154,660
1965	700,938.00	24.13	16,912,819	d	2,124,289	d	2,339,374	21,893,181
<b>Nelson County</b>								
1974	616,166.79	19.71	12,145,484	91,227	1,226,253	152,834	1,811,962	15,427,760
1973	616,153.58	19.71	12,146,022	87,124	1,172,001	152,012	1,799,258	15,356,417
1972	616,440.78	17.90	11,035,085	73,174	1,181,253	124,039	1,978,787	14,392,338
1971	616,813.49	17.93	11,062,003	64,798	1,069,352	122,378	1,898,606	14,217,137
1970	617,239.05	17.92	11,062,304	184,086 <sup>a</sup>	1,043,440	a	1,903,766	14,136,278
1969	617,876.77	17.92	11,071,225	1,062,490 <sup>b</sup>	b	1,891,850 <sup>c</sup>	c	14,025,565
1968	618,219.34	17.90	11,063,119	d	1,017,170	d	1,688,299	13,946,771
1967	617,970.95	17.91	11,068,143	743,537 <sup>b</sup>	b	1,787,798 <sup>c</sup>	c	13,599,478
1966	618,460.32	18.83	11,645,289	d	682,139	d	1,563,074	14,069,071
1965	619,176.93	18.84	11,668,361	d	682,913	d	1,538,674	14,069,623
<b>Ramsey County</b>								
1974	736,998.13	20.40	15,034,366	783,001	3,681,471	1,286,001	5,066,633	25,851,472
1973	738,663.99	20.38	15,054,722	745,428	3,606,921	1,286,056	4,770,872	25,463,999
1972	745,816.19	18.42	13,738,172	727,734	3,480,134	1,133,732	4,441,912	23,521,684
1971	747,747.50	18.45	13,798,507	714,426	2,760,054	1,140,944	4,464,776	22,878,707
1970	749,026.94	18.44	13,811,631	1,735,847 <sup>a</sup>	3,027,061	a	4,212,995	22,733,804
1969	749,190.00	18.43	13,810,781	3,306,345 <sup>b</sup>	b	5,227,933 <sup>c</sup>	c	22,345,059
1968	750,219.43	18.43	13,827,913	d	2,620,035	d	4,016,205	22,157,815
1967	750,561.89	18.41	13,819,840	2,124,415 <sup>b</sup>	b	5,617,165 <sup>c</sup>	c	21,561,420
1966	750,528.24	19.59	14,702,781	d	2,186,926	d	4,260,911	22,738,484
1965	749,909.61	19.59	14,692,856	d	2,162,437	d	4,152,034	22,591,733
<b>Walsh County</b>								
1974	805,839.85	30.66	24,707,298	716,518	4,064,237	1,115,570	5,633,043	36,236,666
1973	803,129.96	30.76	24,701,408	702,469	3,720,458	1,089,681	5,382,472	35,596,488
1972	808,832.68	30.66	24,800,692	674,802	3,594,955	1,105,725	5,188,376	35,364,550
1971	809,355.18	30.66	24,814,250	761,759	3,299,182	1,096,945	4,990,870	34,963,006
1970	808,483.52	30.37	24,550,458	1,654,862 <sup>a</sup>	2,910,834	a	4,824,700	33,838,111
1969	809,130.44	30.34	24,548,085	3,335,320 <sup>b</sup>	b	5,836,487 <sup>c</sup>	c	33,719,892
1968	809,242.15	27.12	21,944,958	d	2,252,732	d	3,977,492	29,376,798
1967	809,187.96	27.12	21,943,891	1,659,876 <sup>b</sup>	b	4,765,704 <sup>c</sup>	c	28,369,471
1966	811,319.71	24.75	20,082,423	d	1,271,835	d	3,150,560	25,180,901
1965	811,329.05	24.75	20,082,688	d	1,233,599	d	3,079,619	25,068,490
<b>Grand Forks County</b>								
1974	873,983.20	28.22	24,660,232	7,668,512	22,102,129	7,671,801	27,940,643	90,043,317
1973	874,987.95	28.21	24,679,455	7,171,293	19,491,216	7,663,035	26,832,915	85,837,914
1972	876,542.08	28.16	24,687,030	6,002,266	16,773,629	6,371,961	25,555,341	79,390,227
1971	879,475.68	28.15	24,775,629	5,930,957	15,511,511	6,429,891	24,627,449	77,255,437
1970	883,040.02	28.06	24,780,042	12,009,356 <sup>a</sup>	15,278,853	a	25,301,085	77,213,159
1969	883,624.90	28.06	24,792,882	18,085,699 <sup>b</sup>	b	32,564,679 <sup>c</sup>	c	75,443,260
1968	884,682.82	25.34	22,420,622	d	13,063,104	d	24,027,843	70,125,415
1967	885,509.51	25.36	22,453,101	13,823,825 <sup>b</sup>	b	30,372,040 <sup>c</sup>	c	66,648,966
1966	886,555.61	23.66	20,980,154	d	10,959,631	d	24,040,444	64,916,517
1965	886,894.59	23.66	20,987,777	d	10,485,829	d	23,000,981	63,335,633

<sup>a</sup>Data for both business and residential lots, tracts, and leased sites were combined.

<sup>b</sup>Business structures and business lots, tracts, and leased sites were combined.

<sup>c</sup>Residential structures and residential lots, tracts, and leased sites were combined.

<sup>d</sup>Data not available.

Source: 1965-1974 Statistical Report: Property Valuation and Property Taxes Levied, North Dakota Tax Department, Bismarck, North Dakota.

APPENDIX TABLE 14. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES, FULL- AND PART-TIME WAGE AND SALARY EMPLOYMENT, PLUS NUMBER OF PROPRIETORS FOR SELECTED NORTH DAKOTA COUNTIES, 1969-73

	Cavalier County						Pembina County					
	1969	1970	1971	1972	1973	% Change 73/69	1969	1970	1971	1972	1973	% Change 73/69
Total Employment	3,635	5,178	6,350	6,369	5,348	47.1	5,021	5,071	5,410	5,605	6,143	22.3
Number of Proprietors	1,938	1,916	1,904	1,398	1,868	-3.6	1,890	1,871	1,871	1,877	1,852	-2.0
Farm Proprietors	1,449	1,421	1,393	1,365	1,337	-7.7	1,211	1,188	1,164	1,141	1,118	-7.7
Nonfarm Proprietors	489	495	511	533	531	8.6	679	683	707	736	734	8.1
Wage and Salary Employment	1,718	3,262	4,446	4,471	3,480	102.6	3,131	3,200	3,539	3,728	4,291	37.1
Farm	210	210	230	210	210	0.0	733	734	803	735	734	0.1
Nonfarm	1,508	3,052	4,216	4,261	3,270	116.8	2,398	2,466	2,736	2,993	3,557	48.3
Government	734	710	777	819	846	15.3	793	801	834	868	883	11.3
Total Federal	90	112	215	293	291	223.3	133	139	160	185	162	21.8
Civilian	85	105	208	287	284	234.1	133	139	160	185	162	21.8
Military	5	7	7	6	7	40.0	--	--	--	--	--	--
State and Local	644	598	562	526	555	-13.8	660	662	674	683	721	9.2
Private Nonfarm	774	2,342	3,439	3,442	2,424	213.2	1,605	1,665	1,902	2,125	2,674	66.6
Manufacturing	(D)	25	46	39	64	--	459	(D)	538	418	458	-0.2
Mining	--	--	--	(D)	--	--	--	--	--	--	--	--
Construction	94	1,557	(D)	(D)	632	572.3	148	135	221	306	277	87.2
Trans., Comm., and Public Utilities	83	83	94	130	(D)	--	78	87	93	106	124	59.0
Trade	314	360	460	603	829	164.0	564	596	652	721	1,063	88.5
Fin., Ins., and Real Estate	(D)	(D)	45	56	59	--	62	59	64	68	71	14.5
Services	226	281	339	472	(D)	--	294	322	334	504	671	128.2
Other	(D)	(D)	(D)	(D)	1	--	--	(D)	--	2	10	--

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APPENDIX TABLE 14. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES, FULL- AND PART-TIME WAGE AND SALARY EMPLOYMENT, PLUS NUMBER OF PROPRIETORS FOR SELECTED NORTH DAKOTA COUNTIES, 1969-73 (CONTINUED)

	Walsh County						Ramsey County					
	1969	1970	1971	1972	1973	% Change 73/69	1969	1970	1971	1972	1973	% Change 73/69
Total Employment	7,505	7,544	7,699	8,022	8,283	10.4	5,575	5,756	5,814	6,164	6,383	14.5
Number of Proprietors	2,470	2,433	2,436	2,441	2,406	-2.6	1,733	1,711	1,720	1,732	1,711	-1.3
Farm Proprietors	1,633	1,601	1,570	1,539	1,506	-7.8	983	964	945	926	907	-7.7
Nonfarm Proprietors	837	832	866	902	900	7.5	750	747	775	806	804	7.2
Wage and Salary Employment	5,035	5,111	5,263	5,581	5,877	16.7	3,842	4,045	4,094	4,432	4,672	21.6
Farm	875	874	958	877	875	0.0	181	181	199	181	180	-0.6
Nonfarm	4,160	4,237	4,305	4,704	5,002	20.2	3,661	3,864	3,895	4,251	4,492	22.7
Government	1,869	1,916	1,914	1,940	1,973	5.6	1,012	1,055	1,065	1,103	1,151	13.7
Total Federal	149	151	142	134	121	-18.8	190	205	186	193	199	4.7
Civilian	149	151	142	134	121	-18.8	178	189	171	180	183	2.8
Military	--	--	--	--	--	--	12	16	15	13	16	33.3
State and Local	1,720	1,765	1,772	1,806	1,852	7.7	822	850	879	910	952	15.8
Private Nonfarm	2,291	2,321	2,391	2,764	3,029	32.2	2,649	2,809	2,830	3,148	3,341	26.1
Manufacturing	190	193	201	206	217	14.2	(D)	(D)	99	113	110	--
Mining	44	44	46	(D)	(D)	--	--	--	(D)	--	1	--
Construction	171	195	182	337	360	110.5	163	176	145	217	219	34.4
Trans., Comm., and Public Utilities	178	200	212	251	283	59.0	189	182	192	216	230	21.7
Trade	922	922	976	1,068	1,197	29.8	1,185	1,335	1,381	1,424	1,470	24.1
Fin., Ins., and Real Estate	123	(D)	132	144	148	20.3	102	103	105	128	137	34.3
Services	650	641	637	723	777	19.5	866	874	891	1,028	1,151	32.9
Other	13	(D)	5	(D)	(D)	--	(D)	(D)	(D)	22	23	--

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APPENDIX TABLE 14. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES, FULL- AND PART-TIME WAGE AND SALARY EMPLOYMENT, PLUS NUMBER OF PROPRIETORS FOR SELECTED NORTH DAKOTA COUNTIES, 1969-73 (CONTINUED)

	Nelson County						Grand Forks County					
	1969	1970	1971	1972	1973	% Change 73/69	1969	1970	1971	1972	1973	% Change 73/69
Total Employment	2,562	2,581	2,599	2,719	2,770	8.1	27,733	28,689	28,968	29,591	30,834	11.2
Number of Proprietors	1,246	1,233	1,231	1,229	1,211	-2.8	2,999	2,969	2,998	3,033	3,000	0.0
Farm Proprietors	885	868	851	834	817	-7.7	1,474	1,445	1,417	1,388	1,359	-7.8
Nonfarm Proprietors	361	365	380	395	394	9.1	1,525	1,524	1,581	1,645	1,641	7.6
Wage and Salary Employment	1,316	1,348	1,368	1,490	1,559	18.5	24,734	25,720	25,970	26,558	27,834	12.5
Farm	165	165	181	165	165	0.0	664	663	726	664	662	-0.3
Nonfarm	1,151	1,183	1,187	1,325	1,394	21.1	24,070	25,057	25,244	25,894	27,172	12.9
Government	487	497	470	460	480	-1.4	11,547	11,870	12,065	12,277	12,534	8.5
Total Federal	63	66	63	61	58	-7.9	6,663	6,882	7,128	7,292	7,466	12.1
Civilian	59	61	58	57	53	-10.2	1,283	1,278	1,300	1,238	1,269	-1.1
Military	4	5	5	4	5	25.0	5,380	5,604	5,828	6,054	6,197	17.0
State and Local	424	413	407	400	422	-0.5	4,884	4,988	4,937	4,985	5,068	3.8
Private Nonfarm	664	704	717	864	914	37.7	12,523	13,187	13,179	13,617	14,638	15.6
Manufacturing	33	42	51	(D)	(D)	--	1,074	1,434	1,467	1,471	1,582	47.3
Mining	--	--	(D)	--	--	--	(D)	(D)	(D)	(D)	(D)	--
Construction	64	65	66	95	96	50.0	749	975	(D)	1,118	1,110	48.2
Trans. Comm., and Public Utilities	62	79	84	85	88	41.9	1,446	1,384	1,385	1,341	1,404	-2.9
Trade	312	311	300	317	338	8.3	4,924	5,069	5,149	5,256	5,708	15.9
Fin., Ins., and Real State	(D)	(D)	43	49	57	--	623	643	661	695	764	22.6
Services	154	167	172	305	316	105.2	3,668	3,644	3,643	3,695	4,018	9.5
Other	(D)	(D)	(D)	(D)	(D)	--	(D)	(D)	(D)	(D)	(D)	--

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52



APPENDIX TABLE 14. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES, FULL- AND PART-TIME WAGE AND SALARY EMPLOYMENT, PLUS NUMBER OF PROPRIETORS FOR SELECTED NORTH DAKOTA COUNTIES, 1969-73 (CONTINUED)

	North Dakota					% Change 73/69
	1969	1970	1971	1972	1973	
Total Employment	271,845	276,238	280,113	285,250	294,313	8.3
Number of Proprietors	78,182	77,373	77,367	77,526	76,442	-2.2
Farm Proprietors	51,676	50,675	49,679	48,683	47,674	-7.7
Nonfarm Proprietors	26,506	26,698	27,688	28,843	28,768	8.5
Wage and Salary Employment	193,663	198,865	202,746	207,724	217,871	12.5
Farm	9,921	9,913	10,865	9,917	9,901	-0.2
Nonfarm	183,742	188,952	191,881	197,807	207,970	13.2
Government	66,172	66,963	66,730	67,018	68,834	4.0
Total Federal	21,166	22,093	22,446	22,879	23,171	9.5
Civilian	9,731	10,039	10,061	10,167	9,910	1.8
Military	11,435	12,054	12,385	12,712	13,261	16.0
State and Local	45,006	44,870	44,284	44,139	45,663	1.5
Private Nonfarm	117,570	121,989	125,151	130,789	139,136	18.3
Manufacturing	9,057	9,992	10,309	10,691	12,052	33.1
Mining	1,909	1,638	1,641	1,550	1,554	-18.6
Construction	8,378	10,346	11,021	11,976	11,360	35.6
Trans., Comm., and Public Utilities	11,960	11,951	11,931	12,013	12,382	3.5
Trade	44,962	46,260	47,379	48,254	52,328	16.4
Fin., Ins., and Real Estate	6,559	6,837	7,171	7,295	7,697	17.4
Services	33,750	33,957	34,680	38,045	40,647	20.4
Other	995	1,008	1,019	965	1,116	12.2

(D) Not shown to avoid disclosure of confidential information. Data are included in totals.  
-- Insufficient data.

Source: Regional Economics Information System, Bureau of Economic Analysis, North Dakota Employment Security Bureau, U.S. Department of Commerce.

APPENDIX TABLE 15. TOTAL SALES<sup>a</sup> REPORTED FOR INCORPORATED AREAS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1968-73

	1968	1969	1970	1971	1972	1973	Percent Change 1968 to 1973
<b>Cavalier County:</b>							
Alsen	530,000	686,100	676,012	683,664	816,698	1,643,263	210.0
Calio	61,900	57,400	b	b	119,902	b	--
Calvin	1,172,000	856,700	1,028,420	810,066	1,213,477	2,019,495	72.3
Hannah	140,300	230,000	161,712	147,523	154,476	145,562	3.7
Langdon	10,480,600	11,363,600	11,536,197	15,931,098	19,106,700	110,584,291	955.1
Loma	8,100	--	b	--	--	--	--
Milton	316,100	350,500	1,023,588	688,263	392,984	549,221	73.7
Munich	913,700	829,400	820,769	1,153,179	1,398,382	1,548,740	69.5
Nekoma	76,100	75,900	140,763	281,135	252,148	380,016	399.4
Osnabrock	591,800	542,800	595,244	742,525	764,488	861,950	45.6
Sarles	1,142,400	886,400	875,750	1,157,630	1,451,660	1,690,066	47.9
Wales	541,200	609,300	485,642	b	646,014	898,581	66.0
<b>Grand Forks County:</b>							
Emerado	2,182,200	1,927,000	2,679,602	2,883,569	3,421,644	3,398,343	55.7
Gilby	1,523,700	1,865,100	2,119,729	2,113,306	2,434,794	2,739,697	79.8
Grand Forks	166,492,700	172,925,100	198,017,474	191,783,369	226,312,281	277,337,742	66.6
Inkster	174,400	118,100	158,947	201,513	269,112	382,102	119.1
Larimore	4,432,200	4,305,200	4,382,286	5,198,555	6,344,983	7,319,568	65.1
Manvel	340,600	313,100	373,228	353,917	359,597	463,484	36.1
Niagara	1,015,800	997,900	933,664	1,071,731	1,407,129	1,745,414	71.8
Northwood	5,622,400	4,856,300	4,982,313	5,657,221	7,242,730	8,787,419	56.3
Reynolds	762,100	712,400	695,116	677,022	874,980	993,275	30.3
Thompson	673,600	723,300	637,922	666,733	849,655	1,082,158	60.7
<b>Nelson County:</b>							
Aneta	1,007,400	1,046,900	1,193,756	1,300,760	1,457,680	1,657,147	64.5
Lakota	4,238,100	4,684,900	5,054,242	5,184,267	5,864,503	7,381,943	74.2
McVillie	2,194,300	2,575,600	2,246,869	2,431,871	2,503,182	3,173,614	44.6
Michigan	3,331,200	3,866,800	4,044,708	4,658,100	5,603,533	6,562,541	97.0
Pekin	923,000	949,600	903,931	790,522	1,094,888	1,273,724	38.0
Petersburg	1,057,900	1,048,100	1,016,308	1,497,790	872,609	894,366	-15.5
Tolna	1,861,900	1,977,500	1,897,023	2,107,194	2,419,411	2,989,051	60.5
<b>Pembina County:</b>							
Bathgate	229,000	280,300	276,048	316,616	355,781	355,447	55.2
Cavalier	6,509,500	7,230,800	7,778,179	9,850,079	11,818,972	14,882,974	128.6
Crystal	473,100	536,400	456,013	398,139	412,296	195,175	-58.7
Drayton	4,809,700	13,753,200	3,936,843	3,910,526	3,897,319	4,352,910	-9.5
Hamilton	211,700	216,200	209,964	195,784	218,202	240,919	13.8
Mountain	186,500	181,200	213,419	260,441	294,965	299,701	60.7
Neche	572,700	639,400	554,162	693,813	692,642	857,078	49.7
Pembina	20,647,400	18,820,900	34,319,137	28,279,827	36,875,453	37,715,333	82.7
St. Thomas	1,401,200	1,597,500	1,466,983	1,635,926	3,752,898	1,992,679	42.2
Walhalla	5,486,000	6,273,900	6,736,348	7,164,066	9,251,053	10,477,356	91.0
<b>Ramsey County:</b>							
Bartlett	400	1,500	b	--	4,238	b	--
Brocket	186,000	206,300	240,851	190,278	270,884	445,150	139.3
Churchs Ferry	546,800	587,700	536,393	579,700	575,467	611,072	11.8
Crary	713,300	1,012,400	920,648	b	b	b	--
Devils Lake	36,929,200	40,640,900	40,693,985	44,699,676	54,454,161	64,249,339	74.0
Edmore	2,208,500	2,440,200	2,494,307	2,450,832	3,065,397	4,100,541	85.7
Hampden	566,900	736,700	647,765	705,075	839,011	978,543	72.6
Lawton	442,800	467,000	434,092	617,331	611,786	687,327	55.2
Starkweather	699,100	652,400	767,535	751,988	743,537	757,514	8.4
<b>Walsh County:</b>							
Adams	1,659,700	1,835,500	1,848,641	1,777,522	2,195,132	3,035,800	82.9
Ardoch	55,800	63,000	b	b	81,720	b	--
Conway	400	--	b	b	b	b	--
Edinburg	1,222,300	1,142,800	1,192,355	1,310,271	1,340,584	1,690,651	38.3
Fairdale	679,900	751,700	727,786	876,255	1,092,487	1,192,660	75.4
Fordville	1,176,100	1,191,500	1,639,810	1,087,343	1,031,582	1,303,629	10.8
Forest River	155,900	131,100	141,056	140,021	133,435	140,550	-9.8
Grafton	24,240,100	26,393,800	26,568,415	28,556,661	30,433,555	34,970,204	44.3
Hoople	1,039,300	1,058,800	1,430,093	1,423,729	1,492,781	2,267,901	118.2
Lankin	1,101,700	1,826,300	1,892,839	1,713,179	2,453,370	3,548,893	222.1
Minto	1,649,700	1,685,600	1,795,359	1,640,825	1,976,554	1,943,845	17.8
Park River	6,494,600	7,136,800	7,696,023	8,856,676	10,487,272	14,067,514	116.6
Pisak	312,000	268,400	296,872	264,436	177,282	244,239	-21.7

<sup>a</sup>Sales reported in dollars.

<sup>b</sup>Symbol used to avoid disclosure of the amount of business of retailers where there are so few reporting from a city, village, or other post office that publication of the amount of sales might reveal the amount of business done by a retailer.

Source: North Dakota Tax Department, North Dakota Sales and Use Tax Statistical Report, 1968-73

APPENDIX TABLE 16. AVERAGE PRICES RECEIVED BY NORTH DAKOTA FARMERS FOR SPRING WHEAT AND DURUM, 1969-74

Year	Price Received Per Bushel for:	
	Spring Wheat	Durum
1974	4.68	6.33
1973	2.98	3.93
1972	1.53	1.55
1971	1.38	1.33
1970	1.50	1.37
1969	1.40	1.43

Source: Taylor, Fred R., and John R. Price, North Dakota Crop and Livestock Statistics, Department of Agricultural Economics, North Dakota State University, and Statistical Reporting Service, U.S. Department of Agriculture, Fargo.

APPENDIX TABLE 17. AGRICULTURAL STATISTICS, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, 1950-69

Item	Unit	Cavaliier					Grand Forks				
		1969	1964	1959	1954	1950	1969	1964	1959	1954	1950
Land in Farms	Acres	956,596	932,895	929,113	920,801	911,621	875,316	857,685	865,313	875,604	870,288
Cropland Harvested	Acres	462,840	483,865	510,885	530,052	506,861	525,246	501,835	542,974	608,577	595,066
Cropland Harvested as a Percent of Land in Farms	Pct.	48.4	51.9	55.0	57.6	55.6	60.0	58.5	62.7	69.5	68.4
Number of Farms	No.	1,274	1,412	1,584	1,791	1,827	1,281	1,397	1,614	1,886	1,902
Number of Commercial Farms <sup>a</sup>	No.	1,195	1,271	1,502	1,752	1,776	1,149	1,253	1,527	1,826	1,920
Average Size of All Farms	Acres	750.8	660.7	586.6	513.3	499.0	683.3	613.9	536.1	464.3	413.6
Value of Farmland and Buildings Per Acre	Dol.	130.22	94.13	61.79	42.86	34.36	154.85	124.37	106.68	66.80	54.51
Number of Farm Households Doing Off-Farm Labor <sup>b</sup>	No.	464	413	419	451	405	552	538	537	462	511
Value of Farm Products Sold Per Farm	Dol.	13,994	10,817	8,589	4,624	5,670	22,153	18,496	14,915	10,064	9,309

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Item	Unit	Nelson					Pembina				
		1969	1964	1959	1954	1950	1969	1964	1959	1954	1950
Land in Farms	Acres	643,585	607,225	602,126	618,648	611,672	671,477	677,995	690,735	664,308	652,769
Cropland Harvested	Acres	327,459	302,485	345,566	371,536	347,750	399,024	376,155	432,582	447,743	433,639
Cropland Harvested as a Percent of Land in Farms	Pct.	50.9	49.8	57.4	60.1	56.9	59.4	55.5	62.6	67.4	66.4
Number of Farms	No.	787	844	949	1,104	1,186	1,065	1,234	1,373	1,519	1,589
Number of Commercial Farms <sup>a</sup>	No.	747	775	901	1,102	1,155	919	1,010	1,293	1,501	1,511
Average Size of All Farms	Acres	817.7	719.5	634.5	560.4	515.7	630.4	549.4	503.1	437.3	410.8
Value of Farmland and Buildings Per Acre	Dol.	105.58	75.04	57.33	37.79	30.66	165.27	135.38	115.10	79.06	62.04
Number of Farm Households Doing Off-Farm Labor <sup>b</sup>	No.	227	217	236	217	266	530	497	517	408	445
Value of Farm Products Sold Per Farm	Dol.	16,314	11,604	10,132	4,962	5,614	21,931	14,967	14,045	10,011	9,480

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Item	Unit	Ramsey					Walsh				
		1969	1964	1959	1954	1950	1969	1964	1959	1954	1950
Land in Farms	Acres	751,285	773,295	752,948	774,194	768,729	837,424	821,545	816,445	838,297	815,934
Cropland Harvested	Acres	349,583	370,665	432,903	407,298	448,116	492,380	468,975	515,489	574,710	539,632
Cropland Harvested as a Percent of Land in Farms	Pct.	46.5	47.9	57.5	52.6	58.3	58.8	57.1	63.1	68.6	66.1
Number of Farms	No.	888	987	1,079	1,269 <sup>c</sup>	1,279	1,415	1,557	1,812	2,084	2,132
Number of Commercial Farms <sup>a</sup>	No.	819	893	1,027	1,273 <sup>c</sup>	1,259	1,274	1,326	1,688	1,998	2,071
Average Size of All Farms	Acres	846.0	783.5	697.8	610.1	601.0	591.8	527.6	450.6	402.3	382.7
Value of Farmland and Buildings Per Acre	Dol.	116.63	79.94	57.24	40.92	33.07	167.89	136.38	109.71	72.87	61.13
Number of Farm Households Doing Off-Farm Labor <sup>b</sup>	No.	349	345	284	272	271	595	581	568	450	465
Value of Farm Products Sold Per Farm	Dol.	15,961	13,068	9,609	4,063	6,048	20,794	17,898	11,948	8,662	8,327

<sup>a</sup>Commercial farms are defined as farming operations with a value of sales amounting to \$2,500 or more.

<sup>b</sup>Includes only operators who worked off the farm in 1964 when all farm family members were included.

<sup>c</sup>Census data appear to be incorrect. The number of farms should exceed the number of commercial farms.

Source: U.S. Census of Agriculture: 1950, 1954, 1959, 1964, and 1969, U.S. Department of Commerce, Washington, D.C., Volume I.

APPENDIX TABLE 18. NUMBER OF FIRMS BY TYPE, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1967-72

	Cavalier						Grand Forks						Nelson					
	1967	1968	1969	1970	1971	1972	1967	1968	1969	1970	1971	1972	1967	1968	1969	1970	1971	1972
Manufacturing	3	3	3	3	3	4	37	39	38	39	41	40	5	4	3	4	4	4
Mining	0	0	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0
Contract Construction	11	10	10	11	14	18	77	91	87	83	84	99	9	7	8	10	7	7
Transportation, Communication, and Public Utilities	7	8	6	7	11	11	51	54	56	55	58	58	3	3	2	2	7	8
Wholesale and Retail Trade	92	85	80	78	86	90	418	426	438	436	435	449	76	75	80	76	78	72
Finance, Insurance, and Real Estate	11	12	12	12	13	12	110	108	109	114	110	108	7	7	6	7	7	7
Service	28	29	30	30	33	34	288	291	287	275	281	274	26	25	24	24	24	25
Other	9	2	3	3	3	2	13	9	13	15	14	12	1	1	2	4	1	3

	Pembina						Ramsey						Walsh					
	1967	1968	1969	1970	1971	1972	1967	1968	1969	1970	1971	1972	1967	1968	1969	1970	1971	1972
Manufacturing	11	10	11	10	10	12	9	11	11	11	11	8	8	9	9	9	9	9
Mining	0	0	0	0	0	0	0	0	0	0	0	0	4	3	1	0	2	2
Contract Construction	16	17	15	17	18	17	21	21	18	17	18	17	26	27	27	23	25	24
Transportation, Communication, and Public Utilities	10	5	8	6	7	11	21	19	19	16	19	20	11	13	13	12	15	19
Wholesale and Retail Trade	125	122	126	125	123	127	159	159	165	162	163	164	211	199	188	181	188	191
Finance, Insurance, and Real Estate	13	12	11	11	12	11	29	28	29	29	29	25	23	23	20	19	19	21
Service	42	44	41	43	45	46	77	71	75	76	79	80	72	71	78	76	70	75
Other	4	2	1	3	3	2	3	4	4	5	4	4	10	10	7	3	12	10

 Source: North Dakota County Business Patterns, 1967-72, U.S. Bureau of the Census.

APPENDIX TABLE 19. PERSONAL INCOME BY MAJOR SOURCE AND EARNINGS BY BROAD INDUSTRIAL SECTOR FOR SELECTED NORTH DAKOTA COUNTIES, 1968-72

	Cavalier County						Pembina County					
	1968	1969	1970	1971	1972	% Change 72/68	1968	1969	1970	1971	1972	% Change 72/68
	<i>thousands of dollars</i>											
Total Personal Income	16,666	20,919	35,222	58,713	63,100	278.6	29,906	35,952	36,946	47,409	48,679	62.8
Total Wage and Salary Disbursements <sup>a</sup>	5,716	5,903	24,280	38,674	45,998	704.7	11,624	13,013	14,352	17,763	21,918	88.6
Other Labor Income	265	286	1,194	1,878	2,092	689.4	712	1,032	1,316	1,827	1,613	126.5
Proprietor's Income	4,794	8,556	3,433	11,332	8,220	71.5	9,565	13,214	11,490	17,375	14,059	47.0
Farm Proprietor's Income	3,658	7,362	2,263	10,060	6,918	89.1	6,750	10,110	8,529	14,329	10,954	62.3
Nonfarm Proprietor's Income	1,136	1,194	1,170	1,272	1,302	14.6	2,815	3,104	2,961	3,046	3,105	10.3
Property Income	3,865	4,079	4,582	5,638	5,997	55.2	5,095	5,723	6,127	6,564	6,965	36.7
Transfer Payments	2,387	2,516	3,038	3,578	3,927	64.5	3,728	3,980	4,717	5,250	5,749	54.2
Less: Personal Contributions for												
Social Insurance	361	421	1,305	2,387	3,134	768.1	818	1,010	1,056	1,370	1,625	98.7
Total Labor and Proprietor's Earnings <sup>b</sup>	10,775	14,745	28,907	51,884	56,310	422.6	21,901	27,259	27,158	36,965	37,590	71.6
Farm Earnings	4,125	7,849	2,812	10,720	7,770	88.4	8,302	11,781	10,422	16,603	13,907	67.5
Total Nonfarm Earnings	6,650	6,896	26,095	41,164	48,540	629.9	13,599	15,478	16,736	20,362	23,683	74.2
Government Earnings	2,066	2,169	2,662	4,028	5,376	160.2	3,122	3,241	3,688	4,229	4,952	58.6
Total Federal	685	712	1,074	2,321	3,497	410.5	1,204	1,224	1,496	1,877	2,378	97.5
Federal Civilian	534	554	883	2,114	3,272	512.7	1,057	1,066	1,316	1,678	2,154	103.8
Military	151	158	191	207	225	49.0	147	158	180	199	224	52.4
State and Local	1,381	1,457	1,588	1,707	1,879	36.1	1,918	2,017	2,192	2,352	2,574	34.2
Private Nonfarm Earnings	4,584	4,727	23,433	37,136	43,164	841.6	10,477	12,237	13,048	16,133	18,731	78.8
Manufacturing	85	(D)	97	391	389	357.6	2,222	3,425	(D)	4,950	4,243	91.0
Mining	--	--	--	--	(D)	--	--	--	--	--	--	--
Contract Construction	758	585	18,799	(D)	(D)	--	1,243	1,169	1,157	2,413	3,782	204.3
Transportation, Communication, and Public Utilities	531	576	624	761	978	84.2	756	833	938	1,021	1,157	53.0
Wholesale and Retail Trade	1,969	2,056	2,380	3,396	5,587	183.7	3,449	3,799	3,983	4,340	5,845	69.5
Finance, Insurance, and Real Estate	(D)	(D)	(D)	434	511	--	(D)	543	588	608	639	--
Services	908	1,052	1,144	1,402	2,858	214.8	2,215	2,417	2,511	2,710	2,956	133.5
Other	(D)	(D)	(D)	(D)	(D)	--	(D)	51	(D)	91	109	--

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APPENDIX TABLE 19. PERSONAL INCOME BY MAJOR SOURCE AND EARNINGS BY BROAD INDUSTRIAL SECTOR FOR SELECTED NORTH DAKOTA COUNTIES, 1968-72  
(CONTINUED)

	Walsh County						Ramsey County					
	1968	1969	1970	1971	1972	% Change 72/68	1968	1969	1970	1971	1972	% Change 72/68
	<i>thousands of dollars</i>											
Total Personal Income	44,314	49,524	51,599	59,111	60,434	36.4	35,017	39,971	39,441	46,356	46,795	33.6
Total Wage and Salary Disbursements <sup>a</sup>	18,353	19,728	21,923	23,978	28,660	56.2	15,235	15,837	17,753	19,288	21,774	42.9
Other Labor Income	676	775	919	1,086	1,295	91.6	700	776	897	973	1,132	61.7
Proprietor's Income	12,642	15,427	13,901	18,676	14,004	10.8	8,573	12,120	8,559	13,241	10,066	17.4
Farm Proprietor's Income	9,116	11,548	10,308	15,023	10,268	12.6	4,296	7,611	4,280	8,800	5,559	29.4
Nonfarm Proprietor's Income	3,526	3,879	3,593	3,653	3,736	6.0	4,277	4,509	4,279	4,441	4,507	5.4
Property Income	8,565	9,269	9,756	9,677	10,270	19.9	7,543	7,967	8,283	8,242	8,747	16.0
Transfer Payments	5,134	5,591	6,447	7,289	7,984	55.5	4,101	4,589	5,338	6,230	6,870	67.5
Less: Personal Contributions for												
Social Insurance	1,056	1,266	1,347	1,595	1,779	68.5	1,135	1,318	1,389	1,618	1,794	58.1
Total Labor and Proprietor's Earnings <sup>b</sup>	31,671	35,930	36,743	43,740	43,959	38.8	24,508	28,733	27,209	33,502	32,972	34.5
Farm Earnings	10,904	13,489	12,513	17,680	13,738	26.0	4,718	8,040	4,761	9,378	6,301	33.6
Total Nonfarm Earnings	20,767	22,441	24,230	26,060	30,221	45.5	19,790	20,693	22,448	24,124	26,671	34.8
Government Earnings	7,243	7,943	8,930	9,463	10,223	41.1	4,177	4,100	4,712	4,988	5,495	31.6
Total Federal	1,240	1,281	1,528	1,536	1,603	29.3	1,847	1,565	1,905	1,957	2,187	18.4
Federal Civilian	1,014	1,044	1,255	1,234	1,264	24.7	1,593	1,292	1,568	1,599	1,803	13.2
Military	226	237	273	302	339	50.0	254	273	337	358	384	51.2
State and Local	6,003	6,662	7,402	7,927	8,620	43.6	2,330	2,535	2,807	3,031	3,308	42.0
Private Nonfarm Earnings	13,524	14,498	15,300	16,597	19,998	47.9	15,613	16,593	17,736	19,136	21,176	35.6
Manufacturing	997	1,101	1,109	1,252	1,336	34.0	(D)	(D)	(D)	637	751	--
Mining	269	254	297	280	(D)	--	--	--	--	(D)	--	--
Contract Construction	1,169	1,338	1,631	1,586	(D)	--	1,275	1,423	1,417	1,481	2,123	66.5
Transportation, Communication, and Public Utilities	1,394	1,547	1,726	2,136	2,723	95.3	1,628	1,714	1,844	2,080	2,417	48.5
Wholesale and Retail Trade	5,579	5,593	5,874	6,484	6,974	25.0	6,973	7,313	8,034	8,691	9,268	32.9
Finance, Insurance, and Real Estate Services	998	1,017	(D)	1,152	1,264	26.7	886	990	1,035	1,131	1,190	34.3
Other	3,067	3,585	3,595	3,608	3,843	25.3	4,018	4,372	4,647	5,045	5,340	32.9
	51	63	(D)	99	(D)	--	(D)	(D)	(D)	(D)	87	--

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APPENDIX TABLE 19. PERSONAL INCOME BY MAJOR SOURCE AND EARNINGS BY BROAD INDUSTRIAL SECTOR FOR SELECTED NORTH DAKOTA COUNTIES, 1968-72  
(CONTINUED)

	Nelson County						Grand Forks County					
	1968	1969	1970	1971	1972	% Change 72/68	1968	1969	1970	1971	1972	% Change 72/68
	<i>thousands of dollars</i>											
Total Personal Income	15,577	19,285	18,362	22,478	22,473	44.0	181,510	195,863	214,602	231,016	250,697	38.1
Total Wage and Salary Disbursements <sup>a</sup>	4,836	5,087	5,677	6,008	7,131	47.5	127,079	136,982	153,299	164,362	184,390	45.1
Other Labor Income	208	237	279	325	331	59.1	3,892	4,180	5,110	5,718	6,142	57.8
Proprietor's Income	4,825	7,832	5,815	9,243	7,592	57.3	19,452	22,596	19,694	23,980	20,543	5.6
Farm Proprietor's Income	3,225	6,023	4,017	7,300	5,622	74.3	8,366	10,890	8,773	12,513	8,644	3.3
Nonfarm Proprietor's Income	1,600	1,809	1,798	1,943	1,970	23.1	11,086	11,706	10,921	11,467	11,899	7.3
Property Income	3,849	4,165	4,388	4,368	4,622	20.1	23,770	24,725	27,318	26,403	28,106	18.2
Transfer Payments	2,225	2,391	2,653	3,041	3,353	50.7	12,201	13,280	15,346	17,912	19,794	62.2
Less: Personal Contributions for												
Social Insurance	366	427	450	507	556	51.9	4,884	5,900	6,165	7,359	8,278	69.5
Total Labor and Proprietor's Earnings <sup>b</sup>	9,869	13,156	11,771	15,576	15,054	52.5	150,423	163,758	178,103	194,060	211,075	40.3
Farm Earnings	3,599	6,411	4,454	7,824	6,297	75.0	9,768	12,381	10,463	14,549	11,289	15.6
Total Nonfarm Earnings	6,270	6,745	7,317	7,752	8,757	39.7	140,655	151,377	167,640	179,511	199,786	42.0
Government Earnings	1,315	1,860	2,077	2,189	2,396	32.0	65,605	71,951	78,929	84,684	95,038	44.9
Total Federal	506	493	602	618	665	31.4	44,786	48,614	52,804	56,523	64,458	43.9
Federal Civilian	402	380	467	471	510	26.9	7,804	8,813	9,079	9,317	9,828	25.9
Military	104	113	135	147	155	49.0	36,982	39,801	43,725	47,206	54,630	47.7
State and Local	1,309	1,367	1,475	1,571	1,731	32.2	20,819	23,337	26,125	28,161	30,580	46.9
Private Nonfarm Earnings	4,455	4,885	5,240	5,563	6,361	42.8	75,050	79,426	88,711	94,827	104,748	39.6
Manufacturing	163	206	230	253	99	-39.3	8,487	7,557	10,855	11,455	11,144	31.3
Mining	--	--	--	(D)	--	--	(D)	(D)	(D)	(D)	(D)	--
Contract Construction	596	606	714	660	994	66.8	7,347	8,619	10,785	(D)	13,725	86.8
Transportation, Communication, and Public Utilities	281	279	380	488	522	85.8	11,480	11,685	12,154	13,384	14,492	26.2
Wholesale and Retail Trade	1,912	2,096	2,121	2,188	2,426	26.9	24,957	27,101	29,407	31,312	33,195	33.0
Finance, Insurance, and Real Estate	(D)	(D)	(D)	582	(D)	--	4,734	4,878	5,145	5,887	6,401	35.2
Services	1,086	1,268	1,208	1,363	1,658	52.7	17,684	19,226	19,946	22,137	25,331	43.2
Other	(D)	(D)	(D)	(D)	(D)	--	(D)	(D)	(D)	(D)	(D)	--

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APPENDIX TABLE 19. PERSONAL INCOME BY MAJOR SOURCE AND EARNINGS BY BROAD INDUSTRIAL SECTOR FOR SELECTED NORTH DAKOTA COUNTIES, 1968-72 (CONTINUED)

	North Dakota					% Change 72/68
	1968	1969	1970	1971	1972	
	<i>thousands of dollars</i>					
Total Personal Income	1,679,140	1,888,967	1,954,580	2,210,366	2,395,893	42.7
Total Wage and Salary Disbursements <sup>a</sup>	885,520	952,023	1,068,854	1,163,217	1,298,762	46.7
Other Labor Income	35,747	40,789	49,699	57,316	62,384	74.5
Proprietor's Income	351,959	466,690	361,301	497,773	506,941	44.0
Farm Proprietor's Income	216,666	326,704	226,759	363,969	366,621	69.2
Nonfarm Proprietor's Income	135,293	139,986	134,542	133,804	140,320	3.7
Property Income	291,688	311,006	327,783	326,394	346,854	18.9
Transfer Payments	163,217	177,258	208,641	239,818	263,237	61.3
Less: Personal Contributions for						
Social Insurance	48,991	58,799	61,698	74,152	82,285	68.0
Total Labor and Proprietor's Earnings <sup>b</sup>	1,273,226	1,459,502	1,479,854	1,718,306	1,868,087	49.5
Farm Earnings	238,313	349,538	252,519	394,965	406,694	70.7
Total Nonfarm Earnings	1,034,913	1,109,964	1,227,335	1,323,341	1,461,393	41.2
Government Earnings	309,218	331,952	371,816	401,809	445,150	44.0
Total Federal	152,770	160,396	181,572	196,929	222,172	45.4
Federal Civilian	65,795	68,703	79,359	87,569	97,273	47.8
Military	86,975	91,693	102,213	109,360	124,399	43.6
State and Local	156,448	171,556	190,244	204,880	222,978	42.5
Private Nonfarm Earnings	725,695	778,012	855,519	921,532	1,016,243	40.0
Manufacturing	58,888	64,739	77,062	83,932	90,871	54.3
Mining	15,143	15,187	15,622	12,509	15,570	2.8
Contract Construction	74,541	80,372	107,684	123,251	146,552	96.6
Transportation, Communication, and Public Utilities	96,418	102,959	110,536	120,253	132,367	37.3
Wholesale and Retail Trade	258,581	273,777	290,804	309,348	329,184	27.3
Finance, Insurance, and Real Estate	52,490	53,294	56,531	62,461	66,865	27.4
Services	166,333	184,000	193,779	205,820	(D)	—
Other	3,301	3,684	3,501	3,958	(D)	—

(D) Not shown to avoid disclosure of confidential information or for items \$50,000 or less. Data are included in totals.

— Insufficient data.

<sup>a</sup>Primary source for private nonfarm wages: ES-202 covered wages - North Dakota Employment Security Bureau.

<sup>b</sup>Earnings are the sum of wages, other labor income, and proprietor's income.

Source: Regional Economics Information System, Bureau of Economics Analysis, U.S. Department of Census.

APPENDIX TABLE 20. DEMAND, TIME, AND TOTAL DEPOSITS AND LOANS FOR THE FIRST BANK OF LANGDON, NORTH DAKOTA, 1965-73

Year <sup>a</sup>	Deposits			Loans	Loan to Deposit Ratio
	Demand	Time	Total		
1965	\$4,862,678.71	\$ 3,530,252.63	\$ 8,392,931.34	\$ 3,617,657.75	0.431
1966	4,637,369.20	4,357,102.67	8,994,471.87	4,934,286.91	0.549
1967	4,657,377.40	4,910,631.11	9,568,008.51	5,336,619.39	0.557
1968	4,928,236.90	5,684,183.06	10,666,469.96	5,695,703.89	0.531
1969	5,269,065.76	6,369,048.60	11,638,114.36	6,479,679.79	0.557
1970	9,207,061.64	7,138,281.07	16,345,342.71	8,734,948.66	0.534
1971	9,639,583.76	7,777,706.38	17,417,290.14	8,311,809.05	0.447
1972	9,025,852.32	8,823,629.63	17,849,481.95	8,701,455.43	0.498
1973	8,903,085.04	10,374,715.54	19,277,800.58	12,521,639.95	0.650

<sup>a</sup>The data for the years listed are for December 31 of that year, for example, 1965 refers to the condition as of December 31, 1965.

Source: Report of Condition of North Dakota Banks, Department of Banking and Financial Institutions, Bismarck, North Dakota.

APPENDIX TABLE 21. STATE BANK DEPOSITS AND LOANS, NATIONAL BANK DEPOSITS AND LOANS, BANK OF NORTH DAKOTA DEPOSITS AND LOANS, AND TOTAL DEPOSITS AND LOANS FOR BANKS IN NORTH DAKOTA, 1965-73

Year	Deposits				Loans			
	State Banks	National Banks	Bank of North Dakota	Total	State Banks	National Banks	Bank of North Dakota	Total
1965	\$ 445,003,956.55	\$ 507,896,200.00	\$106,201,794.13	\$1,059,101,950.68	\$215,985,710.71	\$278,405,800.00	\$ 17,412,439.90	\$ 511,803,950.61
1966	479,186,863.24	544,505,000.00	105,450,342.06	1,129,142,205.30	228,515,166.63	293,846,000.00	22,623,975.34	544,985,141.47
1967	524,072,588.50	600,595,000.00	101,320,152.51	1,276,487,741.01	254,511,151.33	324,147,000.00	22,939,093.50	601,597,244.83
1968	596,528,942.16	665,271,000.00	99,992,080.54	1,361,792,022.70	286,286,923.93	365,542,000.00	26,665,605.14	678,494,529.07
1969	636,145,426.01	695,829,000.00	108,639,534.87	1,440,613,960.88	330,429,323.71	417,241,000.00	35,998,487.33	783,668,811.04
1970	685,811,449.54	741,869,101.00	122,150,565.20	1,549,831,115.74	367,237,016.14	443,279,778.00	52,371,796.18	862,888,590.32
1971	763,645,564.67	846,419,000.00	154,004,362.19	1,764,069,208.86	372,453,543.02	473,023,000.00	62,338,213.27	907,814,756.29
1972	859,795,653.16	937,819,000.00	168,155,302.56	1,965,769,958.72	407,165,785.26	541,304,000.00	79,952,319.34	1,028,422,104.60
1973	1,108,663,603.82	1,030,009,000.00	200,854,236.27	2,249,526,840.09	499,279,678.34	645,718,000.00	106,391,535.80	1,281,389,214.14

Source: Report of Condition of North Dakota Banks, Department of Banking and Financial Institutions, Bismarck, North Dakota.

1  
3  
1



List of Tables

List of Appendix Tables



List of Tables

	<u>Page</u>
TABLE 1. CHARACTERISTICS OF SURVEY RESPONDENTS, JUNE, 1974 . . . . .	5
TABLE 2. PEAK NONLOCAL SAFEGUARD WORKERS AND DEPENDENTS BY COMMUNITY OF RESIDENCE, 1970-71 (ESTIMATES FOR OCTOBER, 1970, UNLESS OTHERWISE NOTED) . . . . .	7
TABLE 3. POPULATION OF COUNTIES AND SELECTED INCORPORATED AREAS, NORTHEASTERN NORTH DAKOTA, 1950-74 . . . . .	9
TABLE 4. RESPONSES REGARDING THE EFFECT OF THE ABM PROJECT ON THE COST OF HOUSING RENTAL . . . . .	10
TABLE 5. BUILDING PERMITS ISSUED FOR THE CITY OF LANGDON, 1970-75 . . . . .	10
TABLE 6. DEPENDENTS OF RELOCATED (NONLOCAL) SAFEGUARD PROJECT WORKERS ENROLLED IN SCHOOL, 1970-71 SCHOOL YEAR . . . . .	12
TABLE 7. SCHOOL ENROLLMENT AND TEACHERS IN LANGDON PUBLIC SCHOOLS, 1967-76 . . . . .	12
TABLE 8. SCHOOL ENROLLMENT CHANGES, SELECTED DISTRICTS, NORTHEASTERN NORTH DAKOTA, 1969-70 TO 1973-74 . . . . .	13
TABLE 9. RESPONSES REGARDING THE EFFECT OF THE ABM PROJECT ON THE QUALITY OF SCHOOL SYSTEM . . . . .	14
TABLE 10. TOTAL NUMBER OF POLICE PROCEEDINGS, NUMBER PER 1,000 POPULATION, AND PERCENT INCREASE FROM OCTOBER 1, 1968, TO OCTOBER 1, 1969, AND OCTOBER 1, 1971, TO OCTOBER 1, 1972, LANGDON, NORTH DAKOTA . . . . .	16
TABLE 11. CAPITAL COSTS FOR EXPANDED MEDICAL FACILITIES IN THE ABM IMPACT AREA AS OF JUNE, 1974 . . . . .	17
TABLE 12. ASSESSED VALUATION OF REAL PROPERTY, CAVALIER COUNTY, NORTH DAKOTA, 1969-74 . . . . .	18
TABLE 13. FEDERAL IMPACT PAYMENTS TO ABM PROJECT AREA AS OF MAY 30, 1974 . . . . .	19
TABLE 14. TOTAL SCHOOL, CITY, AND COUNTY TAXES, CAVALIER COUNTY, 1969-74 . . . . .	20
TABLE 15. LANGDON CITY BUDGET, FY 1970 AND FY 1973 . . . . .	21
TABLE 16. CAVALIER COUNTY BUDGET, FY 1970 AND FY 1973 . . . . .	22
TABLE 17. EARNINGS BY BROAD INDUSTRIAL SECTOR, CAVALIER COUNTY, 1969-72 (THOUSANDS OF DOLLARS) . . . . .	26

	<u>Page</u>
TABLE 18. DEPOSITS FOR FIRST BANK OF LANGDON AND ALL NORTH DAKOTA STATE BANKS, 1968-75 . . . . .	27
TABLE 19. DEPOSITS AND LOANS FOR THE LANGDON BRANCH OF METROPOLITAN SAVINGS AND LOAN ASSOCIATION, 1971-75 . . . . .	27
TABLE 20. OPINION AS TO WHETHER THE ABM DEVELOPMENT HAD A GENERAL POSITIVE OR NEGATIVE EFFECT ON THE LANGDON AREA BY LENGTH OF RESIDENCE IN THE COMMUNITY . . . . .	31
TABLE 21. OPINIONS AS TO WHETHER INDIVIDUALS FELT THEY WERE PERSONALLY BETTER OR WORSE OFF AS A RESULT OF THE ABM IMPACT, BY LENGTH OF RESIDENCE IN THE COMMUNITY . . . . .	31



List of Appendix Tables

	<u>Page</u>
APPENDIX TABLE 1. COUNT OF PERSONS BY AGE AND SEX, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	37
APPENDIX TABLE 2. POPULATION 16+ BY LABOR FORCE STATUS, SELECTED CHARACTERISTICS AND SEX, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA . . . . .	38
APPENDIX TABLE 3. WORK PARTICIPATION RATES IN LABOR FORCE FOR CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	39
APPENDIX TABLE 4. COUNT OF PERSONS 16+ IN THE LABOR FORCE BY AGE COHORT, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	40
APPENDIX TABLE 5. EMPLOYED PERSONS 16+ BY OCCUPATION AND SEX FOR CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	41
APPENDIX TABLE 6. COUNT OF PERSONS 25 YEARS OLD AND OVER BY SEX AND YEARS OF SCHOOL COMPLETED, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	43
APPENDIX TABLE 7. GENERAL HOUSING CHARACTERISTICS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1970 . . . . .	44
APPENDIX TABLE 8. DETAILED HOUSING CHARACTERISTICS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA . . . . .	45
APPENDIX TABLE 9. POPULATION CHANGE AND NET MIGRATION TO AND FROM CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1960 TO 1970 . . . . .	46
APPENDIX TABLE 10. ENROLLMENT IN SELECTED SCHOOL DISTRICTS, NORTHEASTERN NORTH DAKOTA, 1968-75 . . . . .	47
APPENDIX TABLE 11. SCHOOL ENROLLMENT AND TEACHERS IN NEKOMA PUBLIC SCHOOLS, 1967-75 . . . . .	48
APPENDIX TABLE 12. SCHOOL ENROLLMENT AND TEACHERS IN CAVALIER PUBLIC SCHOOLS, 1967-75 . . . . .	48
APPENDIX TABLE 13. ASSESSED VALUATION OF REAL PROPERTY FOR SELECTED COUNTIES IN NORTHEASTERN NORTH DAKOTA, 1965-74 . . . . .	49
APPENDIX TABLE 14. EMPLOYMENT BY TYPE AND BROAD INDUSTRIAL SOURCES, FULL- AND PART-TIME WAGE AND SALARY EMPLOYMENT, PLUS NUMBER OF PROPRIETORS FOR SELECTED NORTH DAKOTA COUNTIES, 1969-73 . . . . .	50

APPENDIX TABLE 15. TOTAL SALES REPORTED FOR INCORPORATED AREAS IN CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1968-73 . . . . .	54
APPENDIX TABLE 16. AVERAGE PRICES RECEIVED BY NORTH DAKOTA FARMERS FOR SPRING WHEAT AND DURUM, 1969-74 . . . . .	55
APPENDIX TABLE 17. AGRICULTURAL STATISTICS, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, 1950-69 . . . . .	56
APPENDIX TABLE 18. NUMBER OF FIRMS BY TYPE, CAVALIER, GRAND FORKS, NELSON, PEMBINA, RAMSEY, AND WALSH COUNTIES, NORTH DAKOTA, 1967-72 . . . . .	57
APPENDIX TABLE 19. PERSONAL INCOME BY MAJOR SOURCE AND EARNINGS BY BROAD INDUSTRIAL SECTOR FOR SELECTED NORTH DAKOTA COUNTIES, 1968-72 . . . . .	58
APPENDIX TABLE 20. DEMAND, TIME, AND TOTAL DEPOSITS AND LOANS FOR THE FIRST BANK OF LANGDON, NORTH DAKOTA, 1965-73 . . . . .	62
APPENDIX TABLE 21. STATE BANK DEPOSITS AND LOANS, NATIONAL BANK DEPOSITS AND LOANS, BANK OF NORTH DAKOTA DEPOSITS AND LOANS, AND TOTAL DEPOSITS AND LOANS FOR BANKS IN NORTH DAKOTA, 1965-73 . . . . .	63