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An Outline Development Plan for the CNGLA Region

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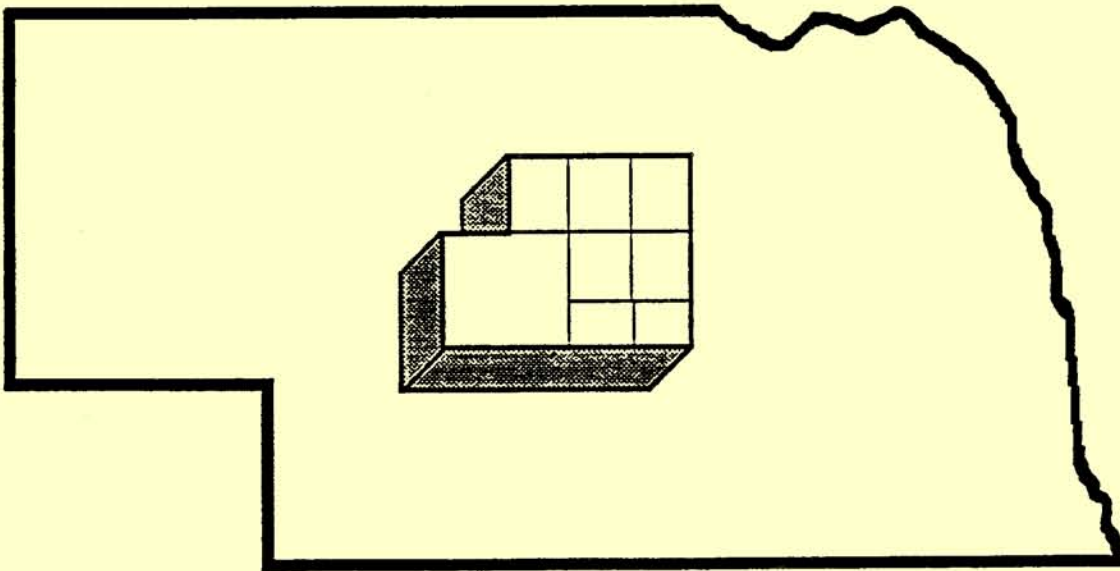


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**An Outline
Development Plan
For The CNGLA Region**



University of Nebraska-Lincoln
College of Architecture
Department of Community and Regional Planning

CRP911

Principles and Practice of Regional Planning and Development
Fall 1990

**An Outline Development Plan for the
CNGLA Region**

Report Compiled and Edited by:

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This report has been compiled from material that has been extracted or edited from interim project reports submitted by the following students in partial fulfillment of the requirements of CRP 911, Fall Semester 1989:

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DEDICATION

The class wishes to dedicate this report to three students who were called to active duty in Operation Desert Storm:

Mike Benck
Brent Lathrop
Tracy King

All three were instrumental in the completion of this project. We wish to express our appreciation for their efforts and the personal sacrifices of their families.

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Table of Contents

	Page
Acknowledgements	i
List of Figures	iii
List of Tables	vii
 ASSESSMENT AND ANALYSIS	
Executive Summary	1
Chapter 1 - The Functional Delineation of the Region	3
Chapter 2 - The Physical/Environmental Subsystem	25
Chapter 3 - The Social/Demographic Subsystem	43
Chapter 4 - The Economic/Financial Subsystem	71
Chapter 5 - The Political/Institutional Subsystem	89
Chapter 6 - Goals and Sub-goals	99
 PLANNING FOR THE DEVELOPMENT OF THE DELINEATED REGION	
Chapter 7 - The Plan for Economic Development	103
Chapter 8 - The Plan for Health, Human Services, and Housing	109
Chapter 9 - The Plan for the Development of Tourism	121
Chapter 10 - The Plan for the Management of Solid Waste	127
Chapter 11 - The Plan for Implementation	133
Chapter 12 • Conclusion	139
 APPENDICES	
Appendix a	141
Appendix b	143
Appendix c	147
Appendix d	161
Appendix e	179
Appendix e	197

LIST OF FIGURES

	PAGE
Figure 1-1 Hierarchy of Settlements	6
Figure 1-2 Class 1 Trade Areas	9
Figure 1-3 Class 2 Trade Areas	10
Figure 1-4 Class 3 Trade Areas	2
Figure 1-5 Class 2 Gravity Flow - Broken Bow	15
Figure 1-6 Class 2 Gravity Flow - Ord	16
Figure 1-7 Class 2 Gravity Flow - St. Paul	17
Figure 1-8 Class 3 Gravity Flow	18
Figure 1-9 Class 3 Gravity Flow	19
Figure 1-10 Schematic Diagram of Hierarchy of Settlements	20
Figure 1-11 CNGLA Growth Corridors	21
Figure 2-1 Land Area of CNGLA	26
Figure 2-2 Saturated Thickness of the Principle Groundwater Table	28

Figure 2-3 Soil Types	29
Figure 2-4 Principle Tourist Site	32
Figure 2-5 Nebraska State Highways	33
Figure 2-6 CNGLA Landfill Sites	39
Figure 3-1 Population Time Series for the CNGLA Region	45
Figure 3-2 Population Time Series for Nebraska	45
Figure 3-3 Population Trends by Age Cohort - CNGLA/Region	48
Figure 3-4 Population Trends by Age Cohort - State of Nebraska	48
Figure 3-5 Average Birth Rate - CNGLA/State	52
Figure 3-6 Average Death Rate - CNGLA/State	52
Figure 3-7 Infant Death Rate - CNGLA/State	52
Figure 3-8 Average Marriage Rate - CNGLA/State	54
Figure 3-9 Average Divorce Rate - CNGLA/State	54
Figure 3-10 Percent of Population Urban-Rural	56
Figure 3-11 Total Personal Income	60

Figure 3-12	
1988 Per Capita Personal Income	60
Figure 3-13	
CNGLA Personal Income as Percentage of State	60
Figure 3-14	
1969-1979-1989 Per Capita Personal Income Region/State	60
Figure 3-15	
Persons Served Per Physician	61
Figure 3-16	
Hospital Patient Inflow/Outflow (Burwell Community Hospital – 1989.....	63
Figure 3-17	
Hospital Patient Inflow/Outflow (Loup City Community Hospital -1989)	63
Figure 3-18	
Hospital Patient Inflow/Outflow (Sargent, Broken Bow and Galloway -	
1989)	63
Figure 3-19	
Hospital Patient Inflow/Outflow (Ord Community Hospital - 1989) .	63
Figure 3-20	
Mental Health Delivery of Services	63
Figure 3-21	
Crime Rate by County	67

LIST OF TABLES

	PAGE
Table 1-1 Goods and Services	4
Table 1-2 Classification of Settlements	7
Table 1-3 Classification of Settlements and Population	8
Table 1-4 Gravity Model Calculations	14
Table 2-1 Crop Productivity and Percentage of Irrigated Land by Crop	30
Table 2-2 Urban Communities	35
Table 2-3 Mileage of Road Surface Types by County	36
Table 2-4 CNGLA Landfill Sites	38
Table 3-1 Time Series of Population CNGLA/State	43
Table 3-2 Total Population by Age Cohorts CNGLA/State	47
Table 3-3 Household Characteristics	50
Table 3-4 Net Migration County/State	57
Table 3-5 Labor Statistics	58

Table 3-6	
Crime Index and Crime Rates 1971-1980-1989	66
Table 4-1	
SIC Comparison State/CNGLA	72
Table 4-2	
SIC of Custer County	74
Table 4-3	
SIC of Garfield County	74
Table 4-4	
SIC of Greeley County	74
Table 4-5	
SIC of Howard County	75
Table 4-6	
SIC of Loup County	75
Table 4-7	
Sic of Sherman County	75
Table 4-8	
SIC of Valley County	76
Table 4-9	
SIC of Wheeler County	77
Table 4-10	
Employment Projections to 2005	77
Table 4-11	
Change in Pull Factor by County	79
Table 4-12	
Pull Factor Analysis: Populations of < 500	79
Table 4-13	
Pull Factor Analysis: Population of 500 - 999	79
Table 4-14	
Pull Factor Analysis: Population of 1000 - 2499	81

Table 4-15	
Pull Factor Analysis: Population of 2500 - 4000	81
Table 4-16	
Retail Leakage Analysis Class 2/Class 3 Cities	84
Table 4-17	
Retail Leakage Analysis Class 1/Class 2 Cities	84
Table 4-18	
CNGLA Threshold Estimates	85
Table 4-19	
Threshold Populations	86
Table 5-1	
Tourism Expenditures	94
Table 5-2	
Forum Membership for Program Development	134

Executive Summary

The **CNGLA** is an organization of citizens from central Nebraska representing Loup, Garfield, Wheeler, Greeley, Valley, Ouster, Howard, and Sherman counties concerned with the future of their region. The mission of the **CNGLA** is to initiate and promote the development of the region and to stimulate the economy and quality of life of all of its residents. It is a key objective of the **CNGLA** to develop a plan for accomplishing its mission.

In the summer of 1990, the **CNGLA** engaged the Department of Community and Regional Planning of the College of Architecture at the University of Nebraska-Lincoln to assist in the development of the plan. This study was undertaken by a group of second year graduate planning students in the Principles and Practices of Regional Planning and Development (CRP 911) class. While providing an important public service to the **CNGLA** region and the State of Nebraska, this project also partly fulfills the requirements of a Masters Degree in Community and Regional Planning at the University.

Study Description

This study is organized into two distinct phases: (1) the Assessment and Analysis Phase, and (2) the Planning and Programming Phase.

In the Assessment and Analysis Phase the systems approach was employed. The "systems approach" involves the identification and study

of four sub-systems as follows:

1. Physical/Environmental Subsystem
2. Social/Demographic Subsystem
3. Economic/Financial Subsystem
4. Political/Jurisdictional Subsystem.

Relevant data was collected and analyzed relating to each of these four sub-systems. Data came from many sources including active participation by citizens in the region at town meetings and site visits, library research, as well as information provided by various public agencies and organizations.

The objective of the Assessment and Analysis Phase was to determine the problems and prospects for development in the region. The identification of problems and prospects led to the development of goals and objectives for the region.

The problems and prospects along with goals and objectives identified in the Assessment and Analysis Phase were verified and amended by a delegation representing the **CNGLA**. A revised goals and objectives statement was drafted which became the agenda for the Planning and Programming Phase.

The Planning and Programming Phase involved the formulation of development strategies to meet the goals and objectives defined in the previous phase. Upon developing goals and sub-goals five key subject areas were identified:

1. Economic Development
2. Health, Human Services, and Housing
3. Tourism Development
4. Solid Waste Management
5. Implementation.

Each of these subject areas are addressed in the form of projects and programs that may be implemented by the CNGLA along with other public and private entities. The final result of this phase is an outline development plan for the CNGLA region. This plan was presented at a town meeting by the planning team.

This report chronicles both phases of this undertaking and is the final product of this study.

This study was a professional planning project undertaken by graduate students and faculty in an academic setting over a duration of 15 weeks. Some recommendations of this study may require additional research and analysis. This study is intended to act as an agenda for action by the CNGLA. It offers a vast array of ideas, strategies, programs, and projects that may be implemented by the CNGLA or other agencies or organizations within the region. It is hoped that the recommendations of this study will be utilized to provide for further enhancement of the quality of life in the CNGLA region.

Chapter 1

Delineation of a Functional Region

The CNGLA is made up of representatives from the counties of Loup, Garfield, Wheeler, Custer, Valley, Greeley, Sherman and Howard in Central Nebraska. For purposes of study the counties of Dawson, Buffalo, and Hall were also included. Dawson, Buffalo, and Hall counties were included because of the potential economic influence of the major cities of Grand Island, Keamey, and Lexington within these counties and also because of the role that Interstate Highway 80 may have on the development of the region. The study region serves as the canvas within which the "functional" or planning region may be delineated.

Delineation is the process of identifying a meaningful boundary for a "functional region". A functional region may be visualized as one in which settlements within it are functionally dependent upon one another for goods and services in a nested hierarchical order. Functional interaction is related to activities associated with work, school, recreation or shopping or other business activity. Nested hierarchy implies that settlements of a "lower order" depend on settlements of a "higher order" for certain goods and services not available in the former. Lower order goods and services are those that are required for daily needs. Higher order goods and services are

those that are more specialized. Lower order goods and services require smaller "threshold populations" to support them, whereas higher order goods and services require larger threshold populations.

The method used to determine the hierarchy of settlements and functional interactions among communities is the Central Place Theory developed by Walter Christaller and the Gravity Model developed by John Friedmann and William Alonso.

Central Place Theory

Christaller developed the Central Place Theory as a means of explaining the size, spacing, location and content of communities.¹ Christaller based his theory on the distance that people are willing to travel to purchase a good, and the Tmm'mnm population necessary for the businesses that sell the goods and services to make a profit.

The application of Central Place Theory in the context of this study envisions a three level hierarchy which includes class 1, class 2, and class 3 communities. Christaller identified the goods and services that are generally found in each class of community. Table 1-1 shows the goods and services as

Table 1-1

GOODS AND SERVICES In		
Class 1 Communitites	Class 2 Communities	Class 3 Communities
	(includes all goods and services of class 1 communities) AND:	(Includes all goods and services of class land class 2) AND:
Filling Station Food Stores Churches Restaurants Taverns Elementary School	Physicians Furniture Store Real Estate Variety Store Appliance Freight Lines Barbershops Veterinarians Auto Dealers Apparel Stores Insurance Lumbervards Fuel/Oil Banks Dentists Farm Implements Motels Electrical Repair Hardware Florists Auto Repair High School Drugstore Dry Cleaners Beauticians Taxi Service Auto Parts Billiard/Bowl Meeting Hall Jewelry Store Feed Store Hotels Lawyers Shoe Repair Furniture Sportina Goods Variety Food Locker	Sheet Metal Works Department Stores Optometrists Hospitals/Clinics Undertakers Photographers Pub lie Accountant Laundromat Health Practitioner

Source: Interpreting the City: An Urban Geography
by Truman A. Hartschorn

adapted by Christaller. Another important assumption is that each central place (or city) is of equal importance, with distance to the central place being the only limiting factor. This is true for each of the three orders. All upper order settlements provide the services of the lower order cities in addition to those of their own order.

Based on available data, the communities within the eleven county region have been classified into three classes. Figure 1-1 and Table 1-2 illustrate the distribution of class 1, 2 and 3 cities. It must be pointed out that each community identified below may not necessarily possess every good or service as depicted in Table 1-1. The general pattern rather than exact occurrences with the items in the above table was used for developing the classification illustrated in Table 1-2.

Central Place Theory studies done in other areas of the nation indicate that on an average, Class 1 goods and services require populations that range in size from 200 to 320 people.² This range of numbers is referred to as the threshold population, or the number of people needed to support and sustain such a central place activity. The goods and services that belong in this category are filling stations, food stores, and taverns. It is important to note here that some class 1 centers may not fall within this range. What is important however is the amount and types of goods and services which are available in each center. As Table 1-3 indicates, the range of populations for class 1 communities is 50 to 1180. Thus compared to studies done in other areas, some communities in the CNGLA region may be providing services which, theoretically, they may not be expected to provide. Conversely, some

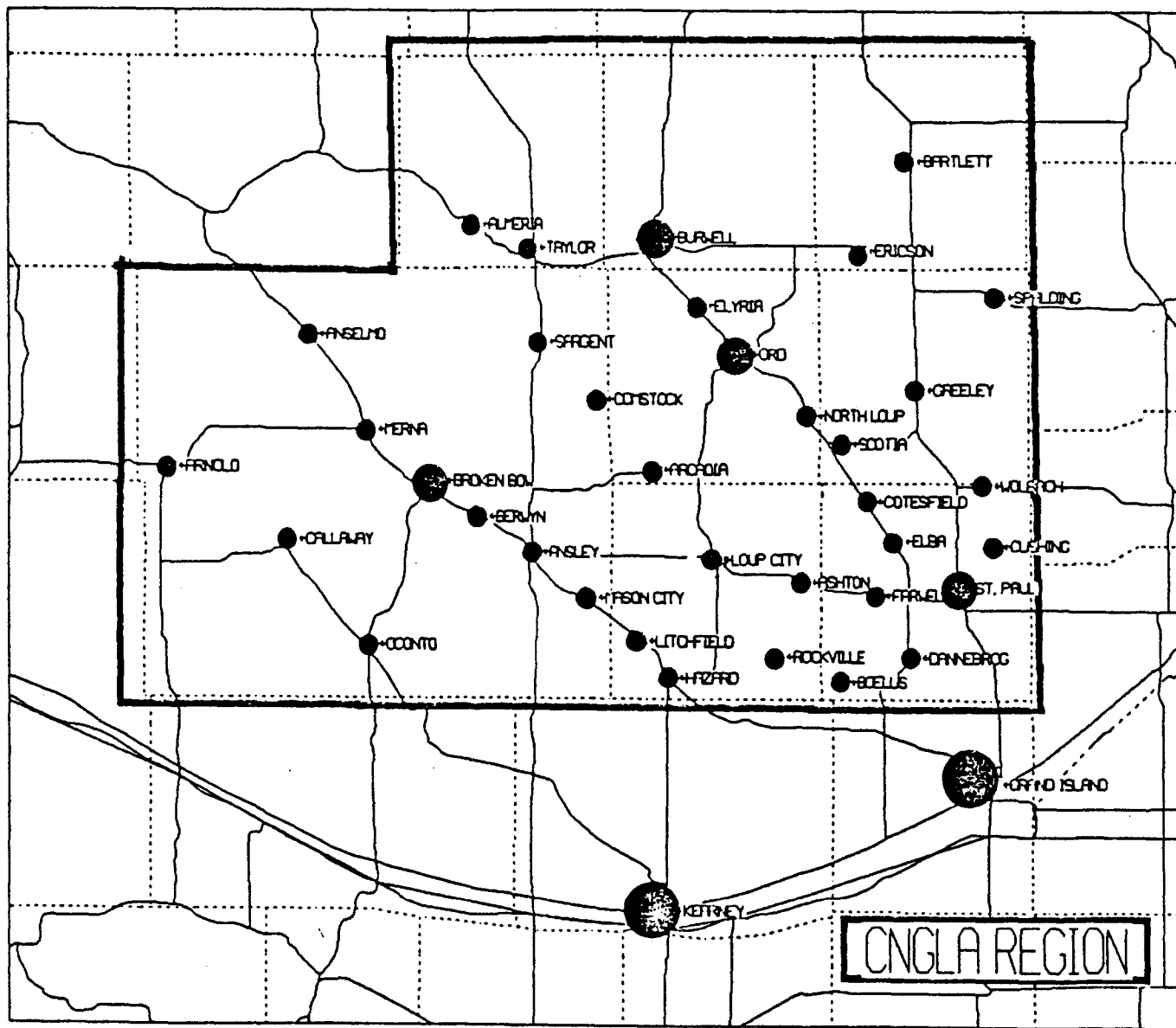
communities may not be providing services which they are theoretically expected to provide. Within this category, the distance that people are willing to travel is very short. Figure 1-2 indicates the typical range of a class 1 good or service which is the trade area of a class 1 community. (see appendix A for trade area analysis calculations)

Class 2 goods and services require populations that range in size from 380 to 940.³ For purposes of this study, this range is re-adjusted to 1200 to 4000. Table 1-3 indicates the locations and populations of class 2 communities in the CNGLA region. Examples of goods and services in this category include motels, banks, and barbershops among others. The range of class 2 goods and services is larger than that of class 1 goods and services. In other words, people are willing to travel longer distances to obtain class 2 order goods. This is illustrated in Figure 1-3 which shows the range of a typical class 2 good or service. Note how the range of goods and services for Sargent, Anselmo, and Berwyn, all class 1 communities, are nested within the range of goods and services offered by Broken Bow, a class 2 community.

The literature suggests that class 3 goods and services require a minimum population range of 1,070 to 1,400.⁴ In the CNGLA region, a readjustment of threshold population range is required to account for the goods and services that are offered by the order of settlements above class 2. As such in the CNGLA region class 3 goods and services are available in the communities of Grand Island and Keamey with populations of 38,900 and 23,000 respectively. There

Figure 1-1

Hierarchy of Settlements



- Third Class Community
- Second Class Community
- First Class Community

Table 1-2

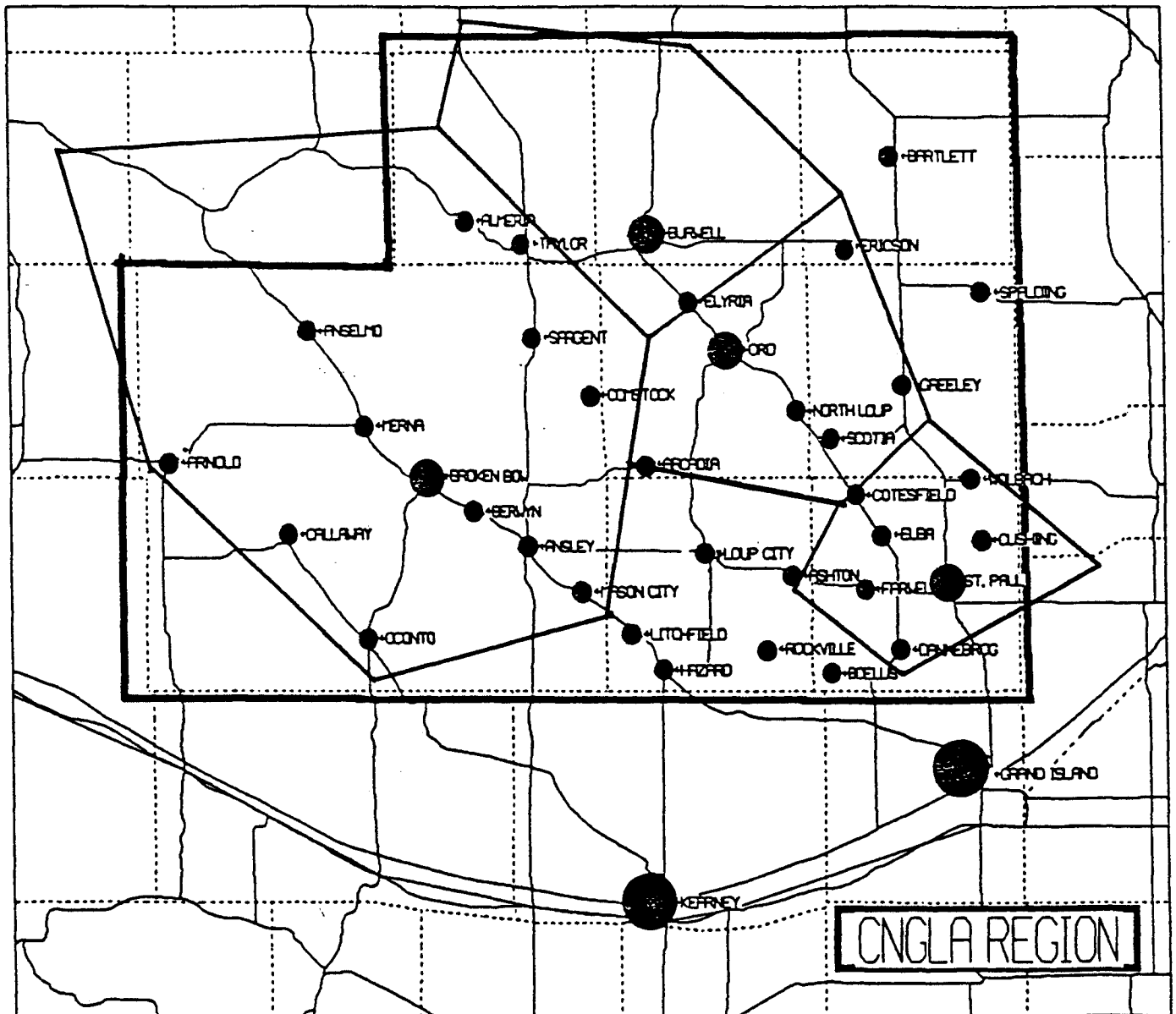
CNGLA Community Classification		
Class 1	Class 2	Class 3
Loup City Sargent Callaway Arnold Spalding Greeley Arcadia Merna North Loup Dannebrog Scotia Wolbach Ashton Litchfield Taylor Mason City Anselmo Elba Oconto Farwell Ericson Bartlett Comstock Rockville Berwyn Cotesfield Hazard Elyria Cushing	Broken Bow Ord St. Paul Burwell	Grand Island Kearney

Table 1-3

CLASS 3 CENTERS POPULATION	
GRAND ISLAND	38900
KEARNEY	23000
CLASS 2 CENTERS	
BROKEN BOW	3840
ORD	2650
ST. PAUL	1880
BURWELL	1200
CLASS 1 CENTERS	
LOUP CITY	1180
SARGENT	730
CALLAWAY	660
ARNOLD	590
SPALDING	590
GREELEY	580
ARCADIA	370
MERNA	380
NORTH LUOP	370
DANNEBROG	300
SCOTIA	270
WOLBACH	240
ASHTON	240
LITCHFIELD	210
TAYLOR	190
MASON CITY	180
ANSELMO	170
ELBA	160
OCONTO	150
FARWELL	120
ERICSON	150
BARTLETT	130
COMSTOCK	110
ROCKVILLE	80
BERWYN	80
COTESFIELD	70
HAZARD	70
ELYRIA	50
CUSHING	

Figure 1-3

Class 2 Trade Areas



- Third Class Community
- Second Class Community
- First Class Community

are no settlement classes that can be accommodated between class 2 and class 3 settlements in the CNGLA region.

Goods and services available in class 3 communities include all goods in classes 1 and 2 in addition to such goods and services as sheet metal works, public accountants, and optometrists. The range of class 3 goods and services is the most extensive of the three classes of communities as illustrated in Figure 1-4 which depicts the range of typical class 3 goods and services. It may be noted that the trade area of the class 1 community of Anseimo is nested within the trade area of the class 2 community of Broken Bow, which is nested within the class 3 trade area of Keamey. Thus the communities of Grand Island and Kearney play a major role in the region in terms of the provision of goods and services. It is evident from Figure 1-4 that two class 3 trade areas are found in the CNGLA region in which population and infrastructure are concentrated. One "sub-region" may be associated with the trade area of Grand Island and the other with that of Kearney.

Gravity Model

To further validate the above findings a more detailed analysis of the influence of transportation and gravitational pull is needed. John Friedmann and William Alonso state that one of the tools of determining functional interdependence among interrelated human settlements is the Gravity Model which is further described in Appendix B. The Gravity Model has been adapted by the social sciences from the physical sciences. In using

the Gravity Model, the assumption is made that the larger the city, the larger the number of goods and services offered, and the greater the attraction of that city. A larger city may have influence over a larger geographic area than will a smaller community.

The gravitational attraction concept is used to predict gravitational "pull" between cities and the formula is often simplified to:

$$G = (P_1 \times P_2) / D \text{ where:}$$

G = gravitational attraction

P₁ = population of community 1

P₂ = population of community 2

D = highway or road distance

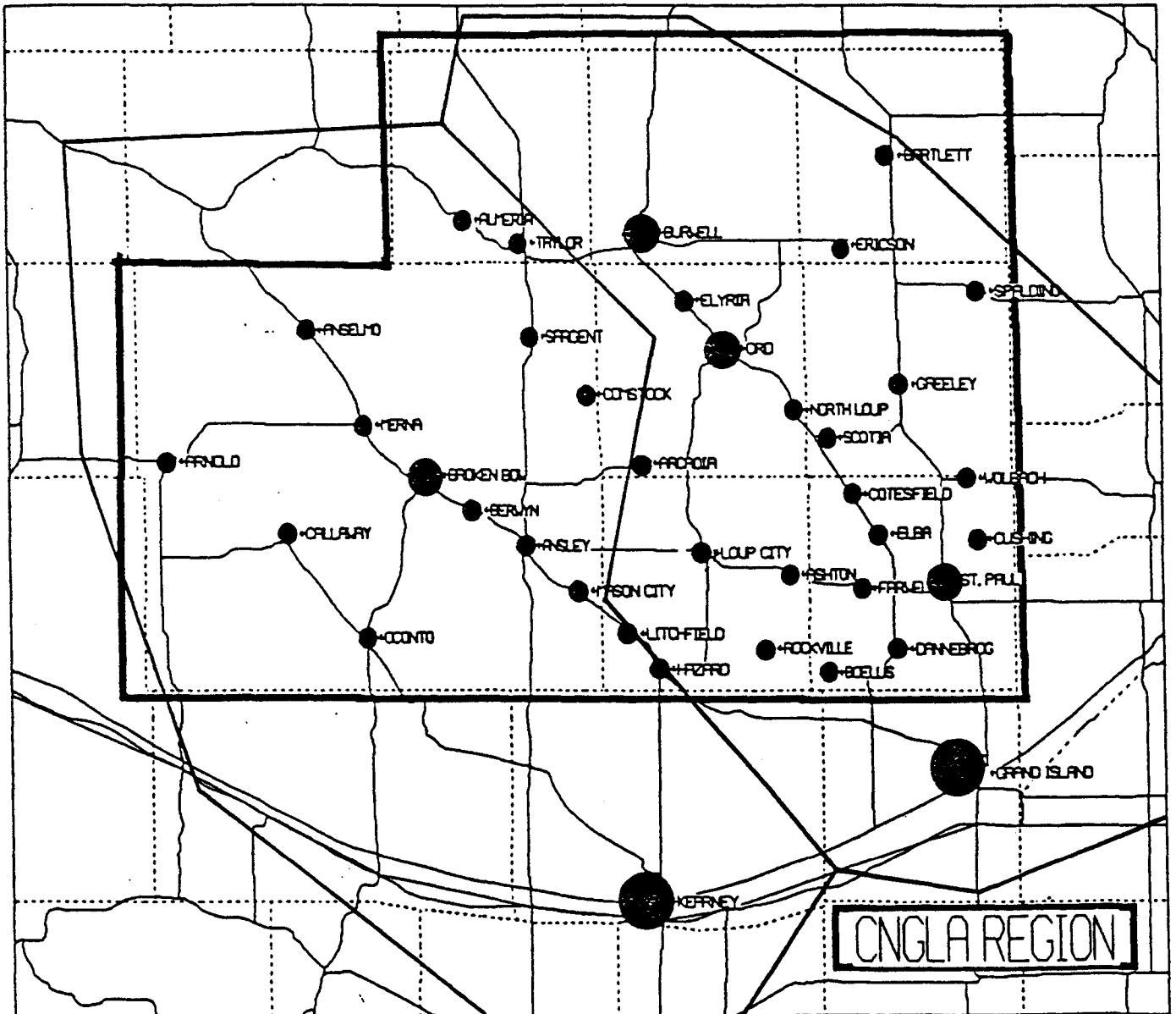
between the two communities




Procedure

Gravitational pull is calculated for each settlement with the closest higher order settlement in logical proximity to the former. For example gravitational pull of each class 2 community to surrounding class 1 settlements is compared to determine which class 2 community exerts greatest pull. This establishes the link between the class 2 settlements and the functionally linked class 1 settlements. Similarly gravitational pull of each class 3 community to surrounding class 2 communities is compared to determine which class 3 community exerts the greatest pull. This establishes the link between class 3 settlements and the functionally linked class 2 settlements. This principle is based on the assumption that people who cannot find the

Figure 1-4

Class 3 Trade Areas



-  Third Class Community
-  Second Class Community
-  First Class Community

goods or services they need in their own community tend to travel to the nearest community of the next higher class where that good or service is available. Not all communities required mathematical calculations in order to identify which community they gravitated towards. For some communities, gravitational attraction was evident from map observation. Calculations were necessary only for those communities which did not readily display an obvious attraction toward a particular community. The results are presented in Table 1-4.

As an example to explain the meaning of values in Table 1-4 the community of Loup City is used. The possible class 2 communities towards which Loup City may gravitate are Ord, Broken Bow, or Burwell. Loup City experiences a gravitational attraction of 4625 from Ord, 3700 from Broken Bow and 1806 from Burwell. It is inferred from the above that Ord exerts the greatest gravitational attraction to Loup City for class 2 goods and services.

Figures 1-5 through 1-9 illustrate the gravitational attraction of all three classes of communities within the functional region. The schematic diagram of the hierarchy of settlements (Figure 1-10) helps clarify the interaction among the three classes of communities. It may be noted that the class 1 communities of Litchfield and Hazard gravitate directly to the class 3 community of Keamey without any intermediary class 2 community. This is due to their location relative to Keamey and the absence of such an intervening second class community. The same holds true for Dannebrog, Boelus, and Rockville which all

gravitate directly towards Grand Island.

Conclusion of Analysis of a Functional Region

As the schematic diagram indicates, there is a definite relationship between the size of a community and its associated level in the Central Place Hierarchy, and its ability to attract individuals from outside. Taking this analysis an additional step and mapping the schematic diagram, it is inferred that both Grand Island and Keamey are the primary providers of goods and services within the region and may be referred to as "regional capitals". The second class communities of Broken Bow, Burwell, Ord, and St. Paul may be viewed as "growth nodes". These growth nodes appear to be located along three distinct "growth corridors". Growth corridors may be defined as linear axes that functionally link growth nodes to regional capitals. Thus the growth corridors in the functional CNGLA region include those between Keamey to Broken Bow along highways 10 and 2, Grand Island to Burwell along highways 2 and 11, and Grand Island to St. Paul along highway 281 (see Figure 1-11) The growth corridors in the region are the areas with the greatest percentage of population and infrastructure and as such provide the most logical alignments and basis for formulating a planning and development strategy for the region.

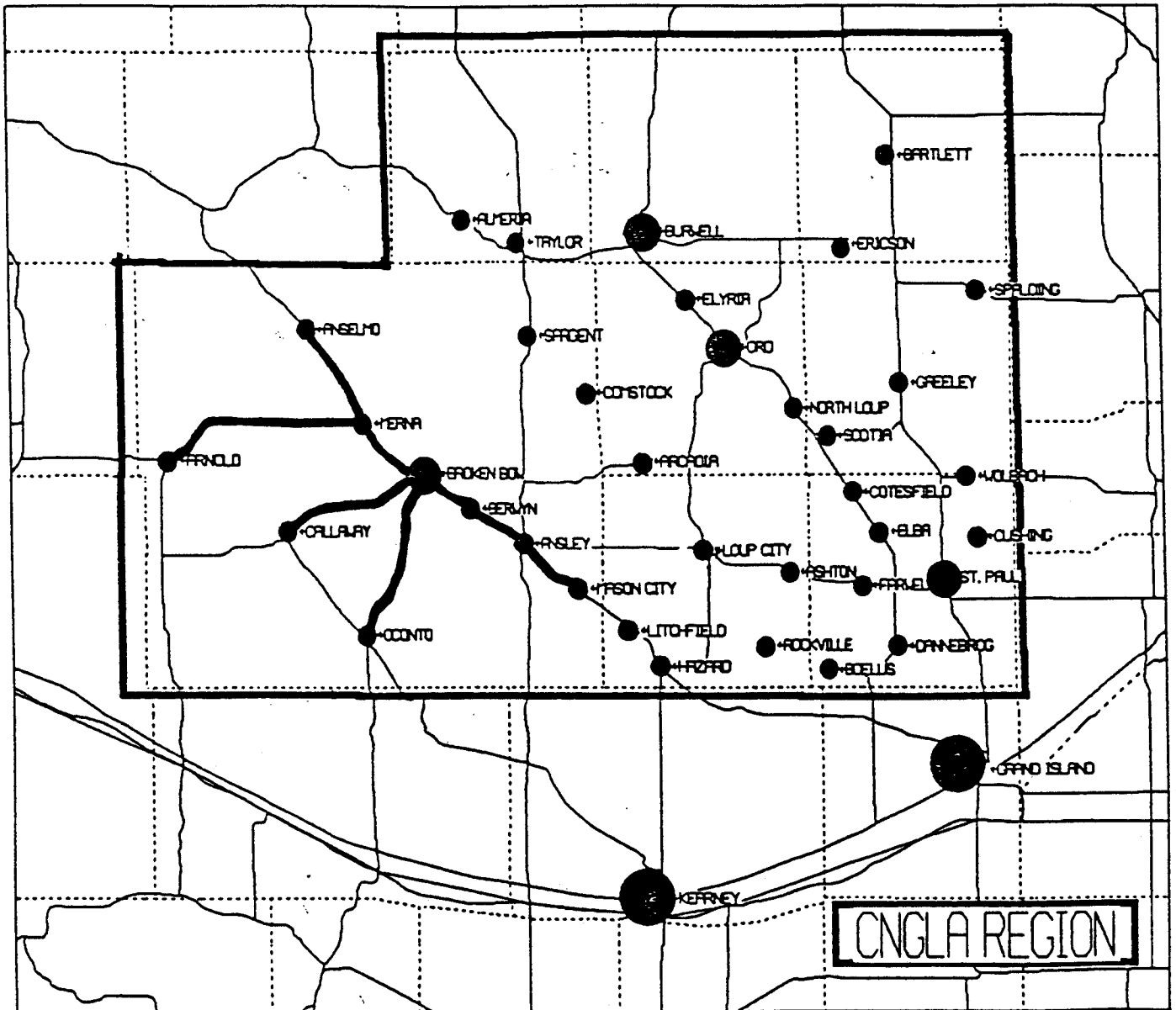
Table 1-4

GRAVITY MODEL CALCULATIONS

Class 1				
Community	Broken Bow	Ord	St. Paul	Burwell
Scotia	2750			1030
Wolbach			2256	1200
Litchfield	960	1160		
Mason City	1654	508		
Farwell		490	3481	
Bartlett		290	150	135
Taylor	589	710		1491
Elba		604	3196	
Ericson		601		272
Elyria		5132		1037
Greeley		2668	1893	315
Sargent	3000	3392		2177
Spalding		1276		355
Loup City	3700	4625	3950	
Class 2				
Community	Kearney	Grand Island		
Burwell	4313	8081		
Ord	10835	25972		
Broken Bow	23340	27200		
St. Paul	151000	151000		

Figure 1-5

Class 2 Gravity Flow
Broken Bow






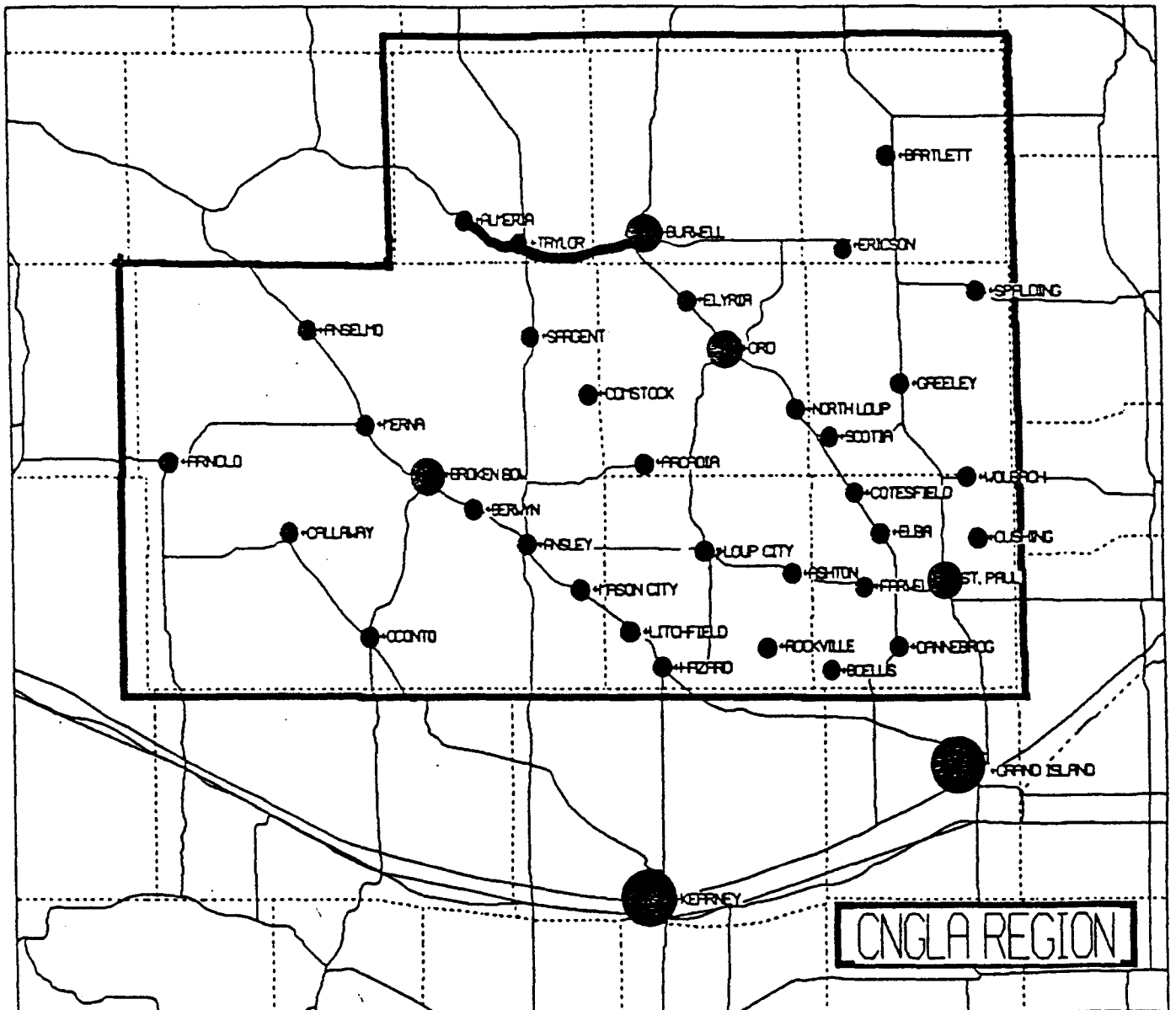
-  Third Class Community
-  Second Class Community
-  First Class Community

Figure 1-6

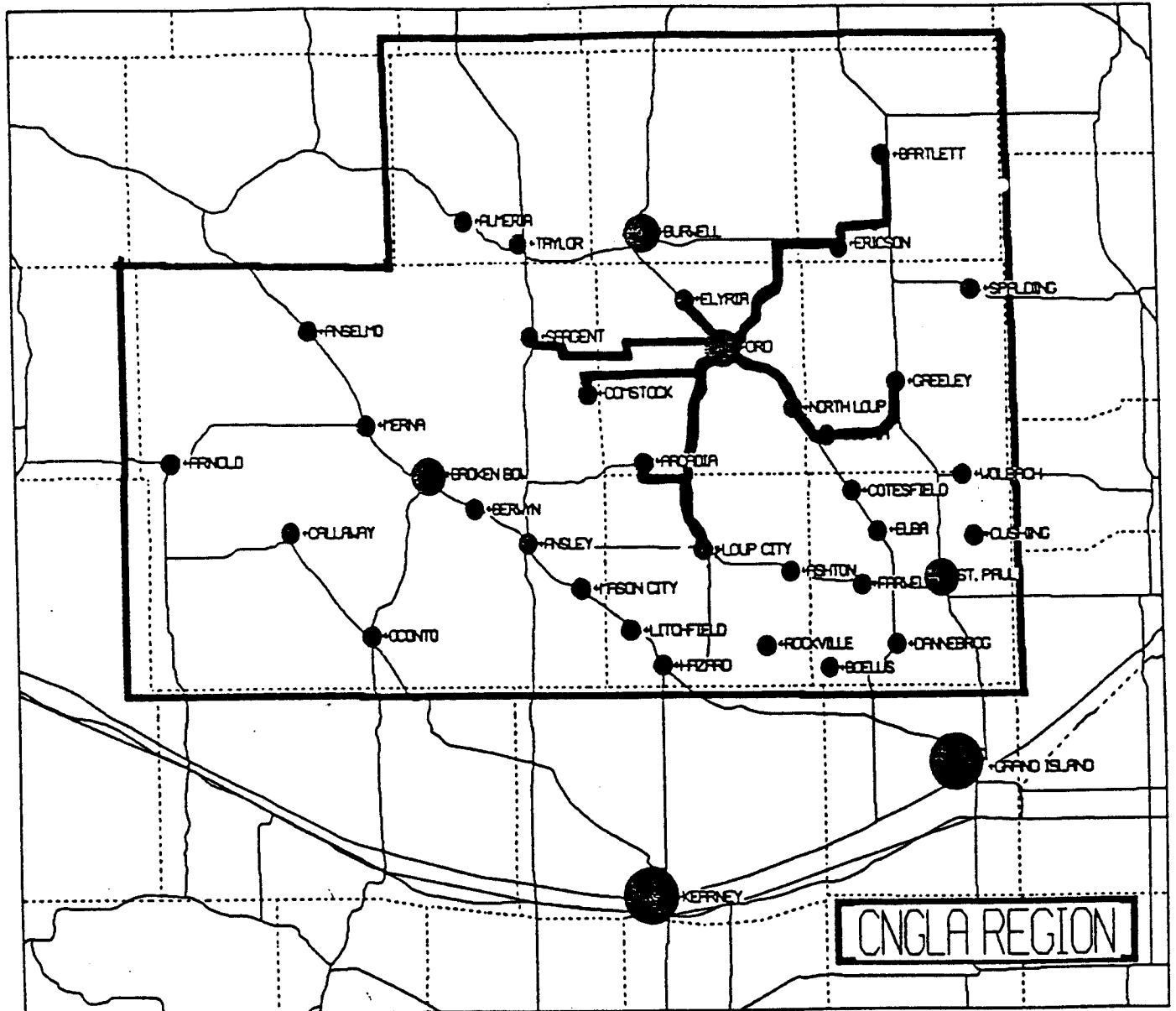
Class 2 Gravity Flow
Burwell



- Third Class Community
- Second Class Community
- First Class Community

Figure 1-7

Class 2 Gravity Flow
Ord






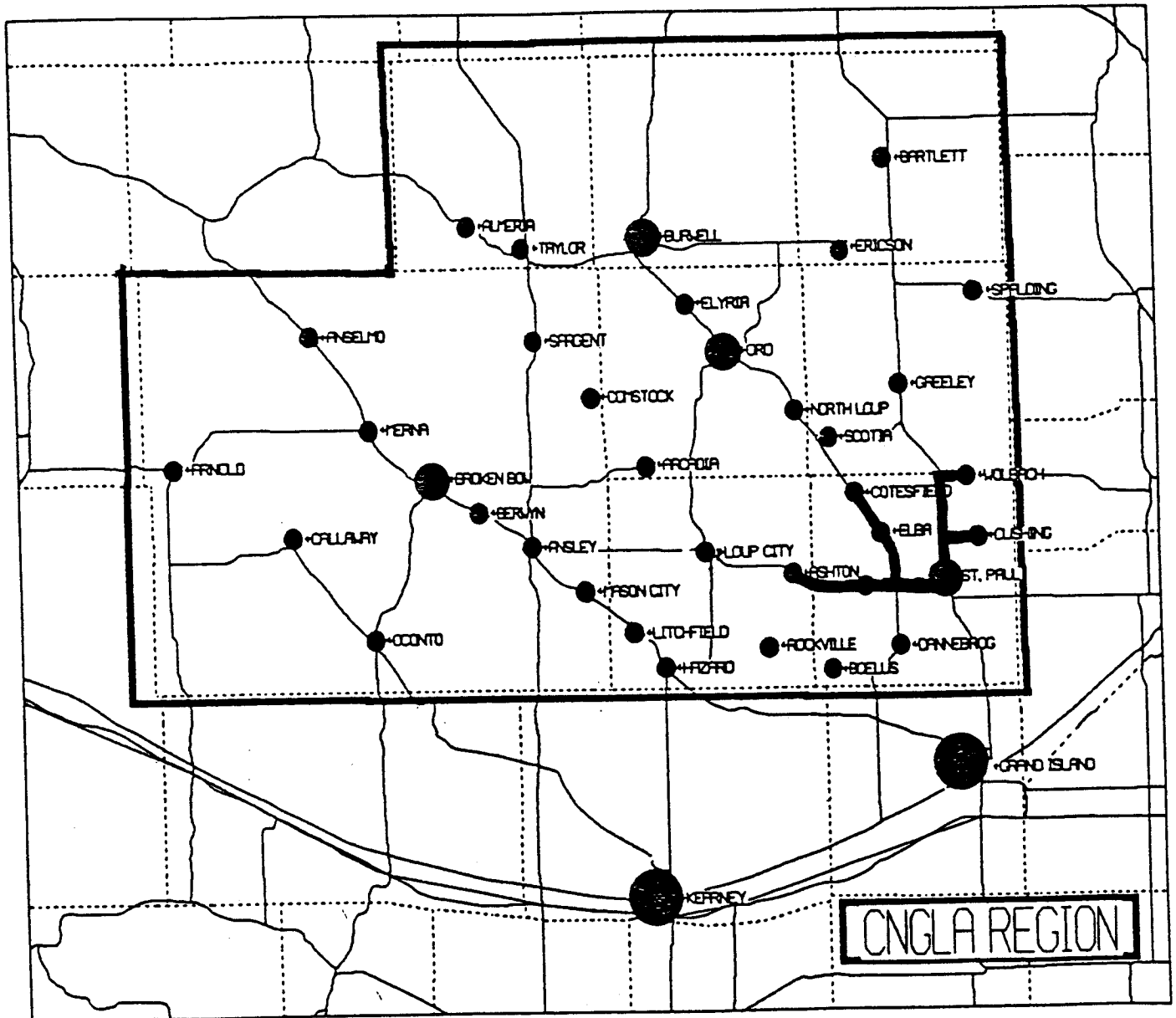
-  Third Class Community
-  Second Class Community
-  First Class Community

Figure 1-8

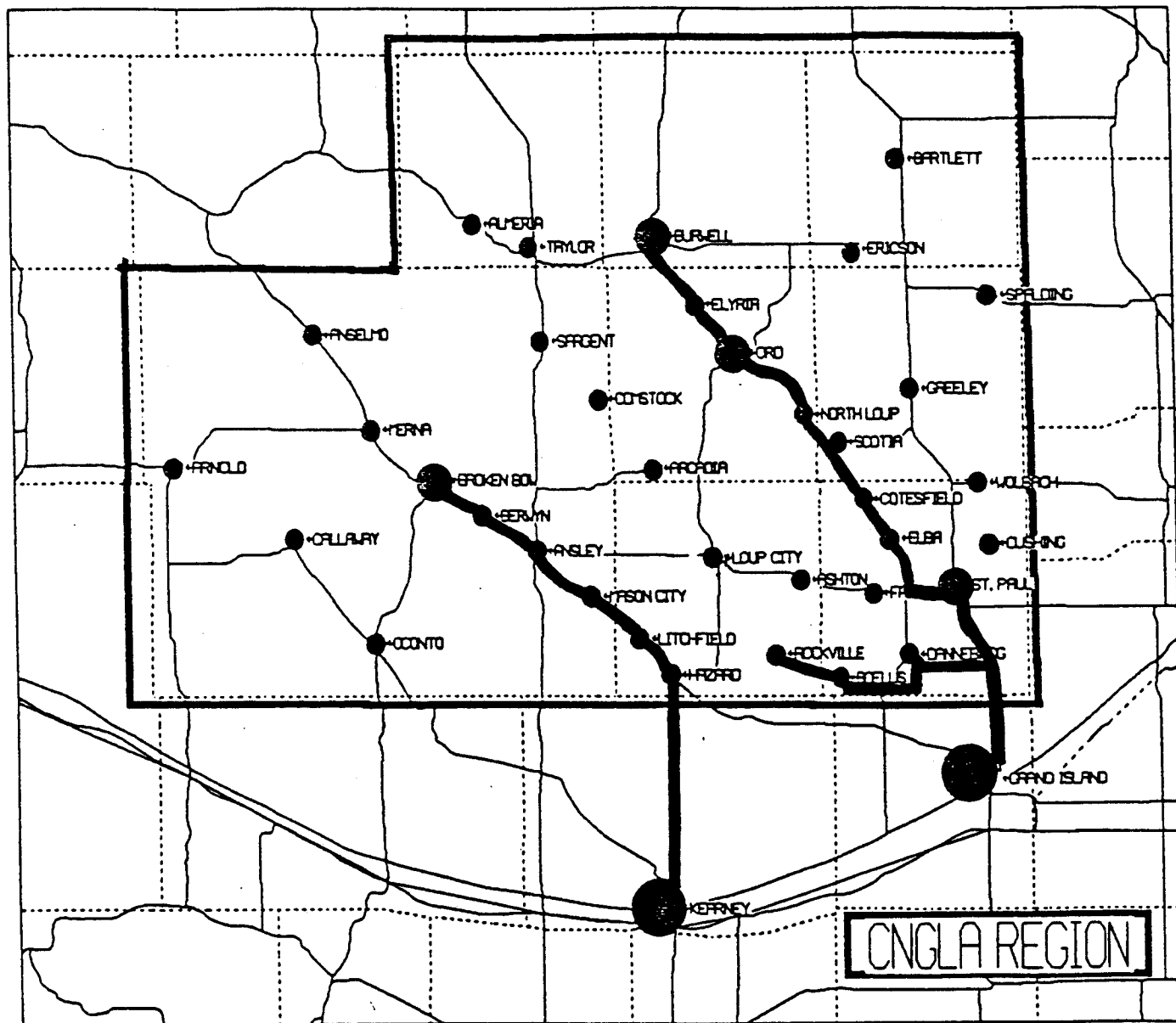
Class 2 Gravity Flow
St. Paul



- Third Class Community
- Second Class Community
- First Class Community

Figure 1-9

Class 3 Gravity Flow



- Third Class Community
- Second Class Community
- First Class Community

Figure 1-10

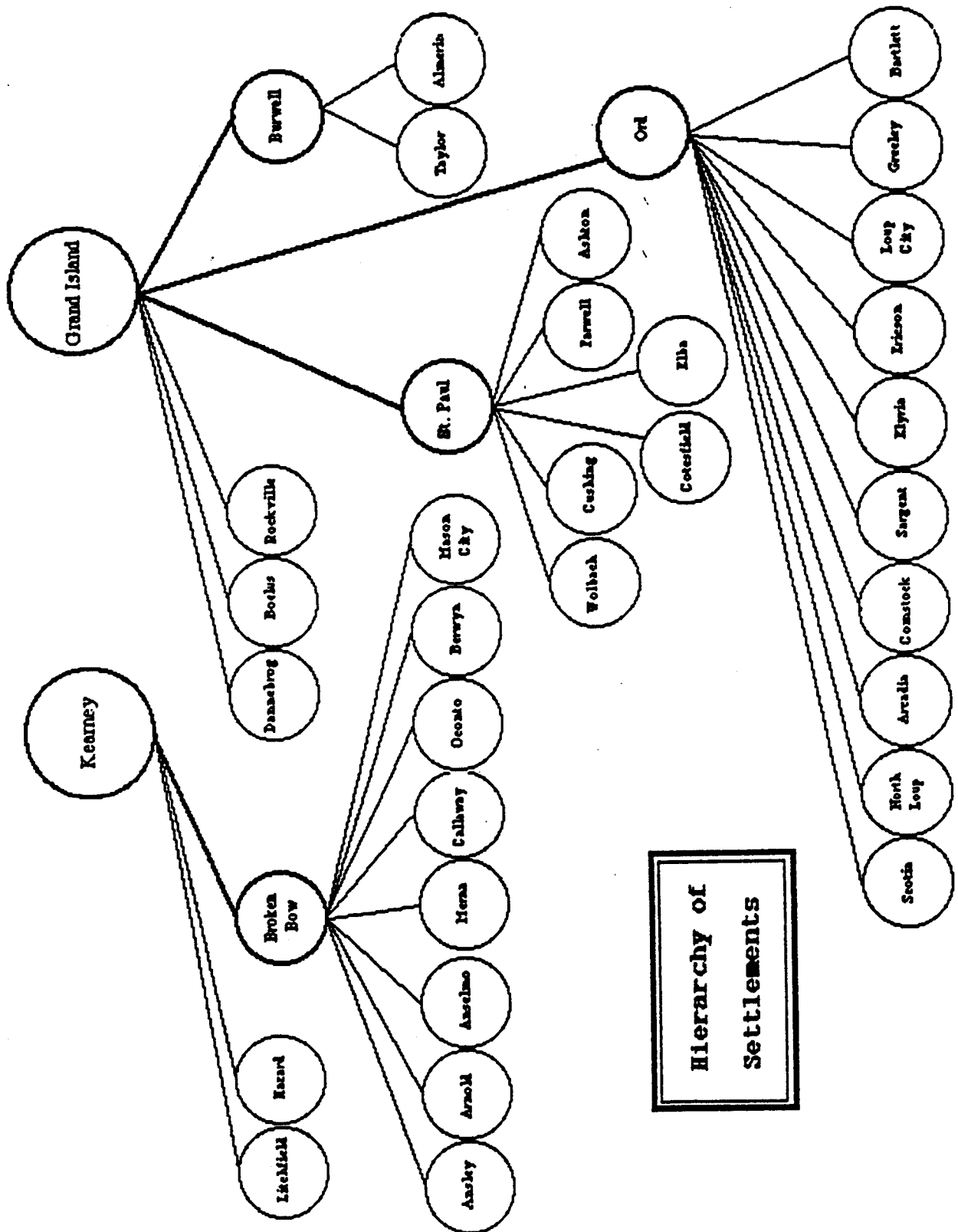
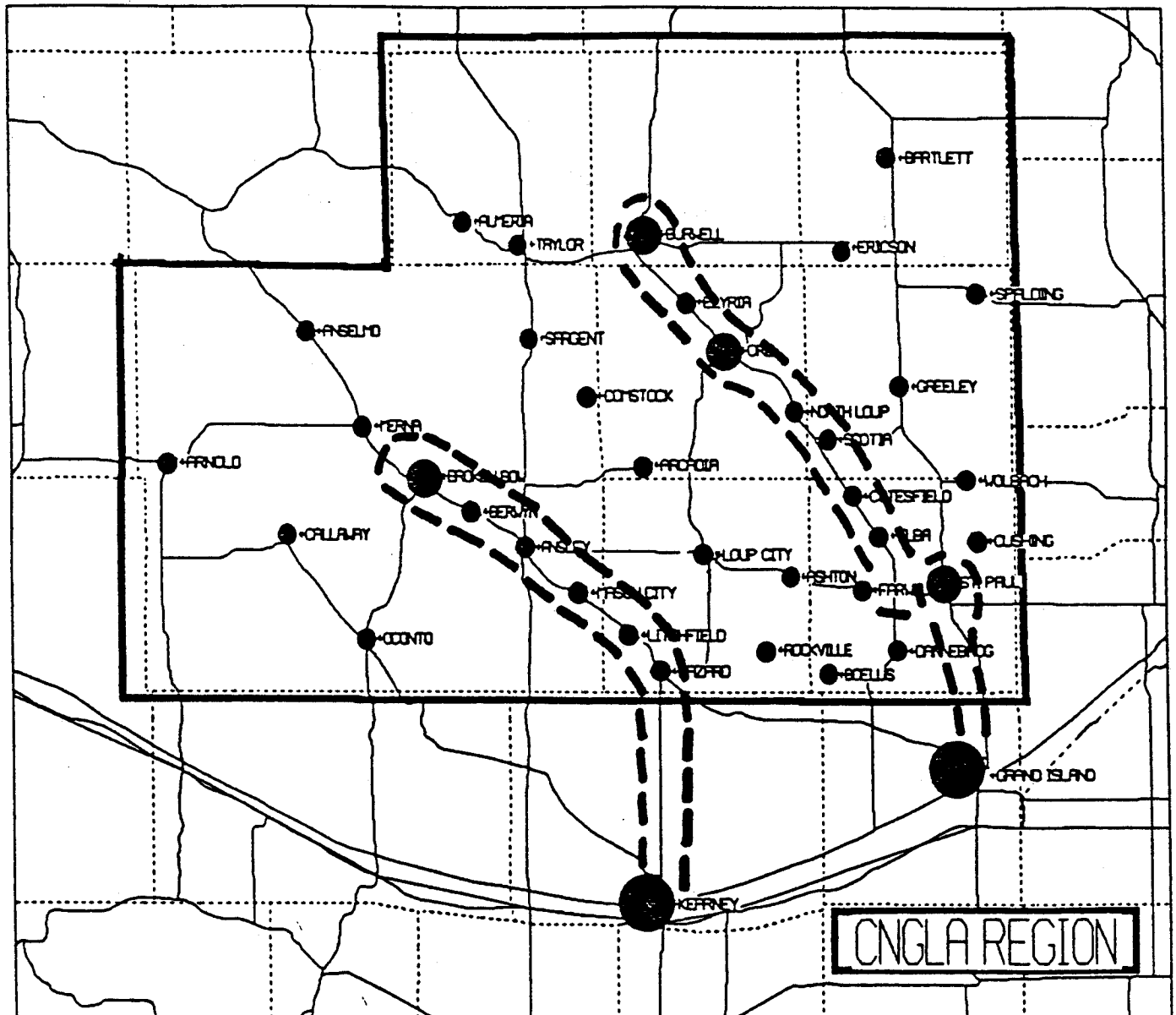


Figure 1-11

CNGLA Growth Corridors



- Third Class Community
- Second Class Community
- First Class Community

Prologue Assessment and Analyses

The delineated region establishes the spatial and functional framework for assessments and analyses. Assessments and analyses are the segments of the study that enable the identification and articulation of problems and prospects in the region. The Systems approach is adopted as the structural framework for the conduct of assessments and analyses.

The "systems approach" involves the identification and study of four sub-systems as follows:

1. Physical-Environmental
2. Social-Demographic
3. Economic
4. Political

Data relevant to each of the four sub-systems was collected and analyzed. Data came from many sources including active participation by citizens in the region at town meetings and site visits, library research as well as information provided by various public agencies and organizations.

Endnotes

1. Hartschorn, Truman A., Interpreting the City: An Urban Geography, John Wiley and Sons, New York, New York, 1978, p. 104.
2. Ibid. p. 107.
3. Ibid.
4. Ibid.

Chapter 2

Assessment and Analysis of The Physical/Environmental Subsystem

The physical-environmental subsystem is that component of the regional planning system which is concerned with the natural and built environments within the region. For purposes of analysis, the physical-environmental subsystem may be divided into two components: natural resources and the built environment. The natural resources and built environments components of the physical-environmental subsystem impact and are impacted by the social--demographic, economic-financial, and political-institutional subsystems.

The analysis of natural resources deals with the study of water, land, air, flora, and fauna and their interrelationships in Loup, Garfield, Wheeler, Custer, Valley, Greeley, Sherman, and Howard counties. The analysis of the built environment refers to the study of the urban communities and their interactions with one another in the counties mentioned above.

Area of the Region

Figure 2-1 shows that the counties within the CNGLA region contain 8.56% of the state's total land area. Custer county contains 39.10% of the land area within the delineated region.

Natural Resources

A natural resource may be defined as anything obtained from the physical environment which is utilized to meet human needs. Natural resources include air, soil, water, and vegetation. Natural resources which require some form of human intervention before being utilized include such things as minerals, ground-water, fish and game animals among others.¹

Climate

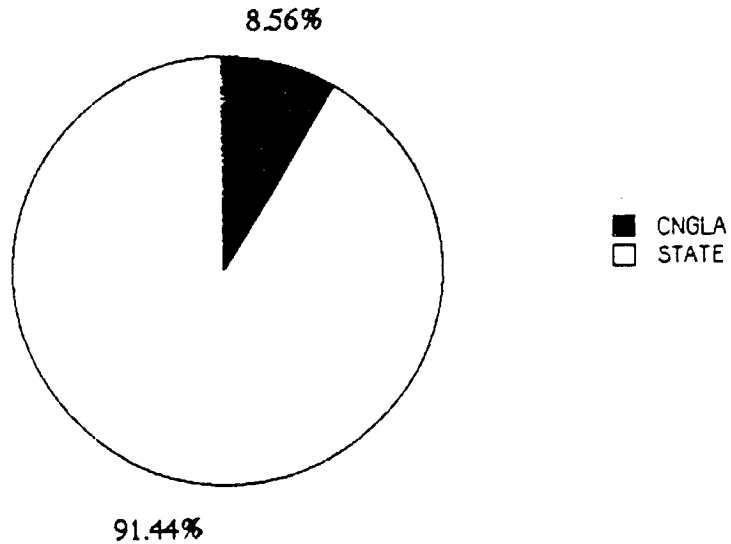
The climate in the CNGLA region is classified as continental, typical of a climate found in the interior of a large continent. Summers are warm, winters are cold, humidity is generally low, and rainfall is moderate.²

Water Resources: Ground and Surface Water

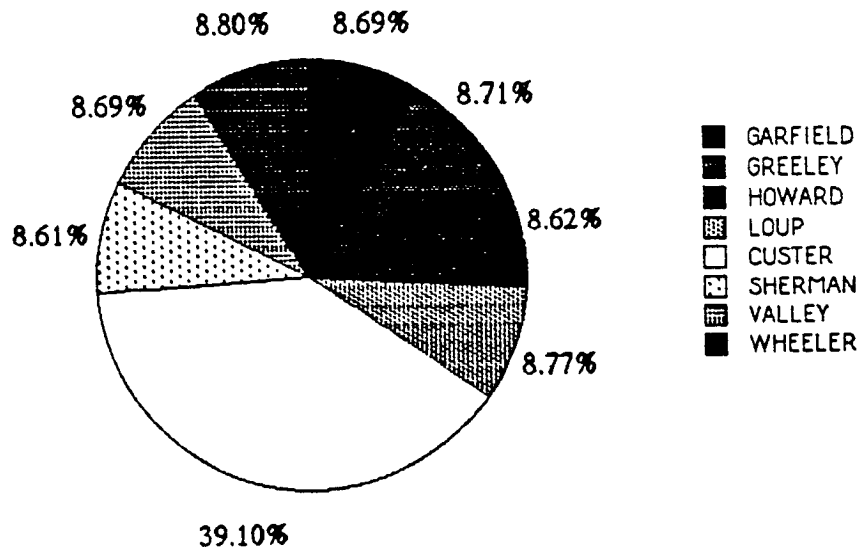
Water resources may be classified under two categories; ground and surface water resources. Ground water is that water which is stored below the surface. In the CNGLA region, ground water occurs in the Dakota sandstone of the Ogallala aquifer. Surface water includes creeks, rivers and reservoirs. The Loup River system and the Calamus and Sherman reservoirs are the major

Figure 2-1

Percentage of State Land Area in CNGLA



Percentage of CNGLA Land Area by County



Source: The 1988-89 Nebraska Statistical Handbook

surface water resources. The area is divided up by numerous small creeks which feed into the Loup system.

The Ogallala aquifer system is the source of ground water for the region (Figure 2-2).³ Ground water resources are used for crop irrigation and municipal water supplies. Most of the counties in the region have 10-20% of the land irrigated. Surface water is used mainly for irrigation and recreational activities such as boating, canoeing, fishing and swimming.

Ground and surface water are resources which must be protected from point and nonpoint pollution sources. One source of contamination might be leachate from area landfills. This may be a major consideration in the location of a landfill site(s). Together ground and surface water are the lifeblood of the region, providing water for crops, livestock, tourist attractions, and human consumption.

Soil Resources

There are basically seven types of soils in varying combinations found in the region (Figure 2-3).⁴ The permeability to air and water of these soils ranges from moderate (Colby, Ulysses, and Leshara soils) to rapid (Valentine, Dunday, and Platte soils). The Northern three counties, Wheeler, Garfield, and Loup, are mostly sandhills. The soil composition of the sandhills is generally not suitable for row-crop production and is used primarily for growing hay and ranching. The other counties are mostly dissected plains which allows for intermediate agricultural activities including both crop production and ranching.

None of the seven soil types provides

a suitable geologic base for a sanitary landfill site because of their high permeability to air and water. There may be specific places in the region that may provide natural geologic barriers between the surface and the aquifer in the form of a layer of clay or impermeable rock. Where natural barriers are nonexistent, man-made barriers such as a lining at the bottom of the landfill may be utilized.

Mining

Mining activity is associated primarily with sandpit operations.⁵ Abandoned quarry sites create a resource of new water bodies that may provide scenic areas for housing. These sites may also be developed for sport fishing by stocking fish from the future fish hatchery at Calamus reservoir

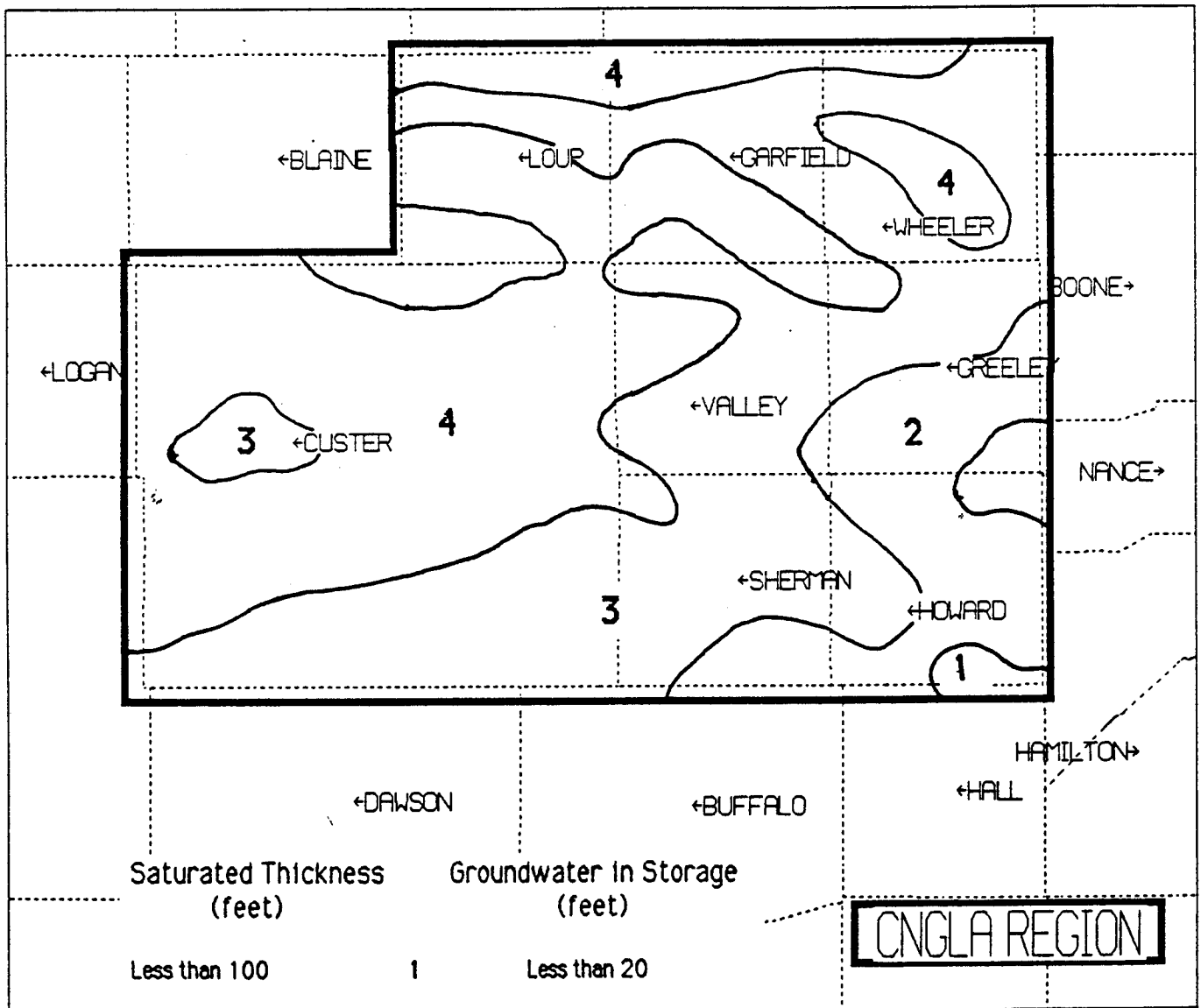
Agriculture

Agriculture is a vital component in the economy of the region and the life-style of the residents. The strength of the agricultural sector may be analyzed in terms of crop productivity and the percentage of irrigated land.

As Table 2-1 illustrates, the CNGLA region fell slightly short of the state in terms of crop productivity from 1978 to 1987. However, the productivity per acre for every crop increased in the region, from 1978 to 1987. The region outpaced the state in dry hay production in 1987. The abundance and accessibility of ground and surface water make irrigation feasible in the region. Table 2-1 also illustrates the strong reliance on irrigation for the improvement of corn and soybean production from 1978 to 1987. Soybean production increased

Figure 2-2

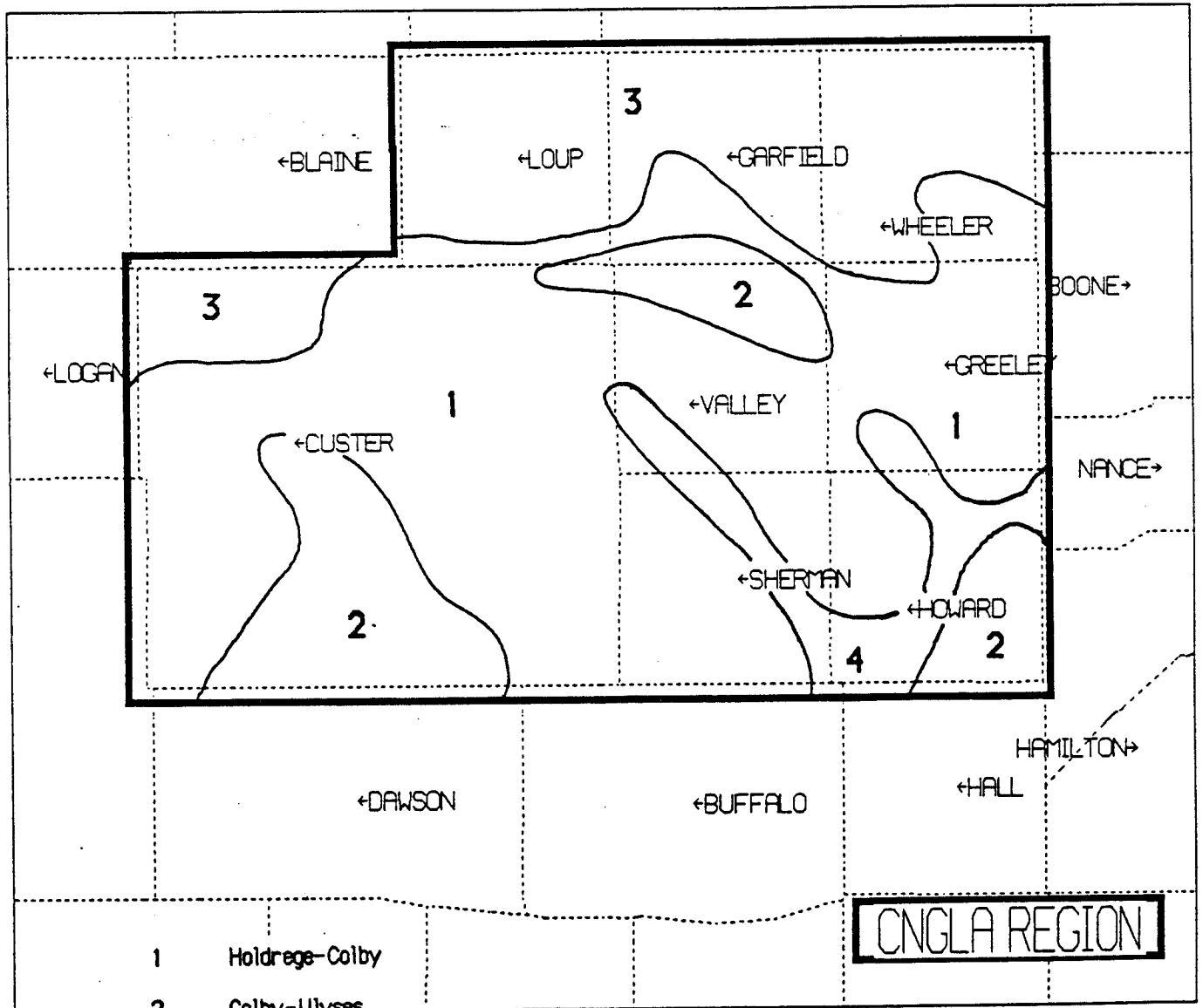
Saturated Thickness of the Principle Groundwater Table



Source: Nebraska Groudwater Atlas

Figure 2-3

Soil Types



- 1 Holdrege-Colby
- 2 Colby-Ulyses
- 3 Valentine-Dunday
- 4 Leshara

Source: Soils of Nebraska, J.A. Elder

Table 2-1

**CROP PRODUCTIVITY AND
PERCENTAGE OF IRRIGATED LAND BY CROP**

CROP	YEAR	(production in bushels per acre)		% IRRIGATED LAND	
		NEBRASKA	CNGLA	NEBRASKA	CNGLA
CORN	1978	106	99	65	73
	1982	104	98	66	78
	1987	123	120	68	79
SORGHUM	1978	71	56	8	9
	1982	71	49	12	18
	1987	78	66	8	4
WHEAT	1978	30	30	3	5
	1982	34	35	5	5
	1987	39	37	6	4
OATS	1978	46	38	3	2
	1982	56	48	6	8
	1987	49	45	4	6
SOYBEANS	1978	31	26	10	43
	1982	33	31	19	50
	1987	34	34	21	46
HAY (tons)	1978	1.99	1.86	12	12
	1982	2.09	2.08	12	14
	1987	2.07	2.22	12	13

considerably throughout the region from 1978 to 1987.⁶

Market facilities for agricultural products are located in and around the region with most cash crops being sold at local elevators. Livestock is sold at Ericson, Burwell, and Sargent. The recent opening of the IBP beef processing plant in Lexington, Nebraska has created a new market for cattle production. This new market may bring about an increase in cattle and feed production in the region.

Tourism

There are a variety of sites and attractions that attract tourists to the CNGLA region. Figure 2-4 illustrates the major tourist attractions in the region which include Calamus Reservoir near Burwell, Sherman Reservoir near Loup City, and Victoria Springs near Anselmo. Fort Hartstuff State Historical Park near Elyria is another point of interest.⁷ The fish hatchery at Calamus Reservoir and the Davis Creek Dam near North Loup may become important tourist attractions in the region. Other attractions and features in the region are: the Burwell Rodeo, the Dowse Sod House near Comstock, and the Custer County Historical Museum in Broken Bow. The community festivals in the region such as Dannebrog's Danish Days, North Loup's Popcorn Days and Sargent's Chokecherry Jamboree, attract many tourists each year.

Accessibility to tourism attractions within the region is provided by state highways as indicated by Figure 2-5. Calamus Reservoir and Fort Hartstuff are located on highway 11. Sherman Reservoir is located near Loup City at

the intersection of highways 10 and 92. Highway 281 provides access to North Loup Recreation Area and Pibel Lake Recreation Area. Victoria Springs Recreation Area is accessed by Highway 2 and Arnold Lake Recreation Area is accessible from highways 40 and 92. There is also a significant potential for increased tourism opportunity associated with abandoned sand pits. These areas may be developed for hunting and fishing activity and may also provide locations for camping facilities.

A primary concern among residents in various communities in the region is the means to attract travellers off Interstate 80. There is a lack of signage on Interstate 80 as well as within the region informing travellers of attractions. This lack of signage may be a contributing factor to the inability of the region to pull travellers from Interstate 80.

Forestry

Halsey National Forest is located northwest of the region and is accessed by Highway 2.

Fishing

The fish hatchery at Calamus Reservoir will provide a significant increase in the state's fishing industry. Recreational fishing is a popular sport in the lakes, reservoirs, and sand pits found in the region.

Built Environment

The built environment may be defined as the physical environment created by humankind. Elements of the built environment include urban communities and

Figure 2-4

Principle Tourist Sites

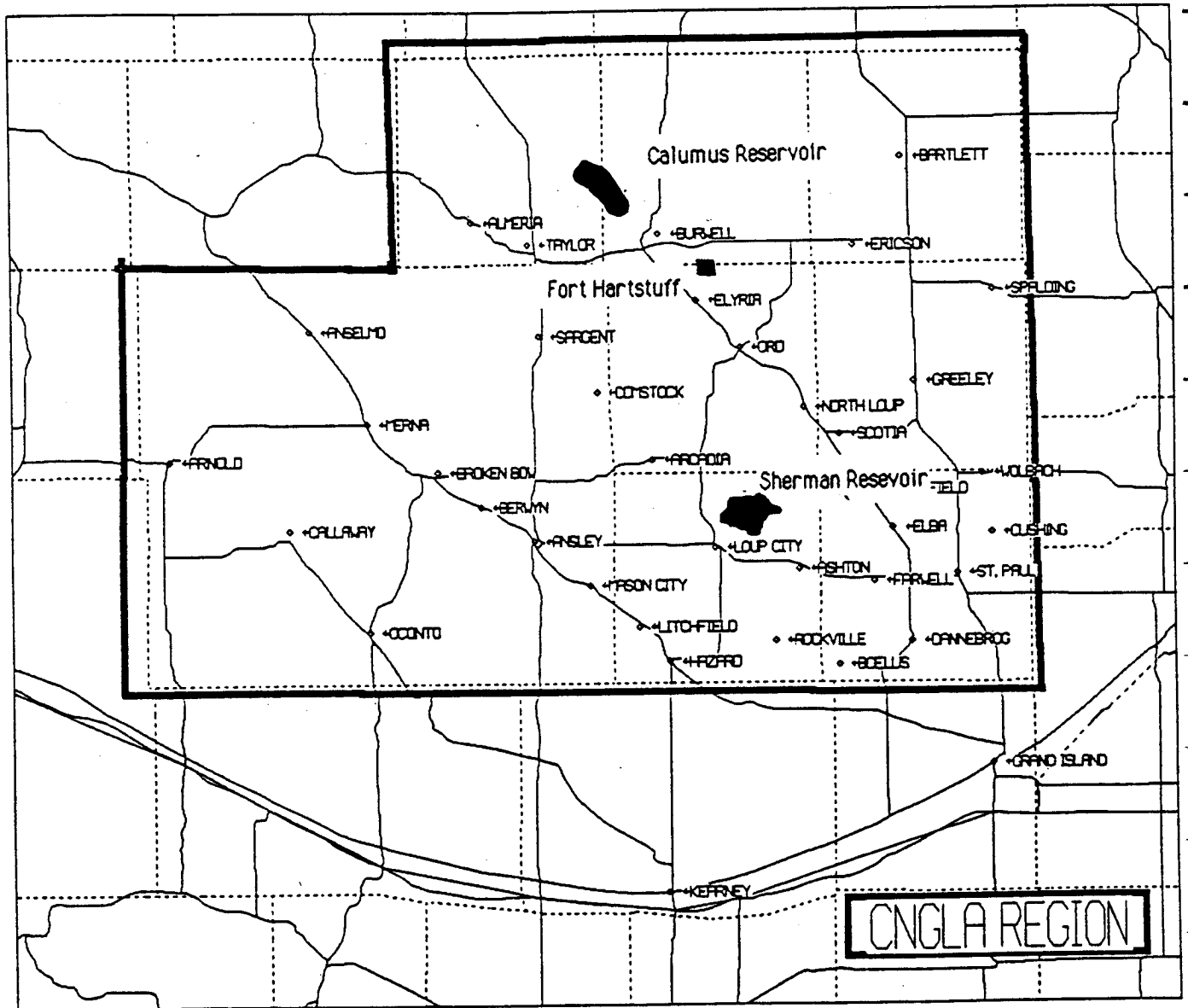
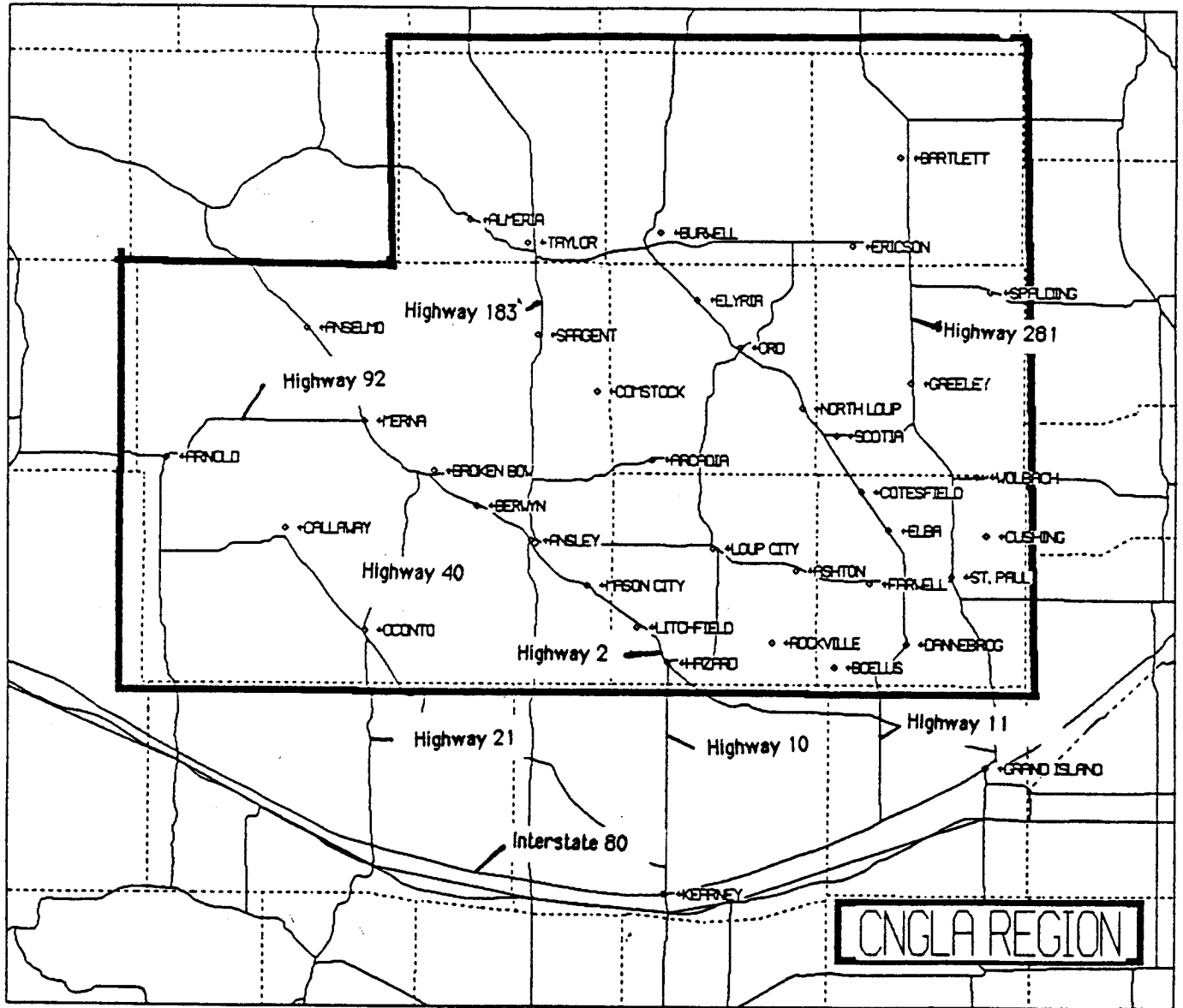


Figure 2-5

Nebraska State Highways



the infrastructure that serves one or more communities. A regional study of the built environment requires an examination of the interaction among urban communities.

Urban Communities

Table 2-2 illustrates the urban communities within the CNGLA region and their 1990 populations.

Transportation and Accessibility

Transportation is a critical factor in the provision of goods and services. Communities within the region must be accessible to one another as well as to communities outside the region. Adequate transportation is crucial to the continued development of the region.

As Figure 2-5 indicates there are no interstate highways in the CNGLA region. Interstate 80 is the closest interstate highway that serves the region. The three principal state highways in the CNGLA region are Highway 2, Highway 11 and Highway 281. These highways appear to be most crucial to the vitality of the region. Highway 2 links the communities of Hazard, Litchfield, Mason City, Ansley, Berwyn, Broken Bow, Merna and Anselmo. Highways 281 and 11 connect the communities of St. Paul, Elba, Cotesfield, Scotia, North Loup, Ord, Elyria, and Burwell. Highways 2, 281, and 10, link the communities in the region to Interstate 80.

Highway 92 is the main east-west route which links the communities of St. Paul, Farwell, Ashton, Loup City, Ansley, Berwyn, Broken Bow, Merna, and Arnold.

The eight county region is serviced by 6,023 miles of road, of which 9.57% is

hard surfaced, 70.39% graveled and 20.04 percent unsurfaced.⁸ Table 2-3 illustrates a break down of road mileage by surface and county. The alignment of highways in the eastern part of the region suggests a logical convergence to Grand Island on Interstate 80 which may be the key urban core and "regional capital" that serves the region. Highway alignment in the western section of the region suggests a hub at Keamey which may be another urban core that serves the region.

Building Stock

The buildings are largely older, dating from early to middle twentieth century. Most of the buildings are in relatively good shape but many need some extra care because of their age. Very few of the communities in the CNGLA region have had any new housing starts in recent years. St. Paul has seen an increase in housing starts because of people moving out of Grand Island. Burwell has had some construction near the Calamus reservoir.

Infrastructure

Infrastructure includes not only the streets, roads and bridges, but also the water and sewer systems, the electricity delivery systems and the telephone systems. The communities in the CNGLA region have their own wells and water treatment plants. The electrical needs are met by the Nebraska Public Power District. The region contains no power plants but it is transversed by transmission lines. The region is served by N-orthwestem Bell, General Telephone of Nebraska, Continental Nebraska, Consolidated Telephone Co., and Unitel of

Table 2-2

Urban Communities and 1990 Populations

Custer County		Loup County	
Westerville	*	Almeria	*
Weissert	*	Taylor	190
Milburn	*	Howard County	
Broken Bow	3840	St. Libory	*
Sargent	730	St. Paul	1880
Callaway	660	Dannebrog	300
Arnold	590	Elba	160
Ansley	550	Boelus	120
Merna	380	Farwell	120
Mason City	180	Cotesfield	70
Anselmo	170	Cushing	40
Oconto	150	Valley County	
Comstock	110	Ord	2650
Berwyn	80	Arcadia	370
Wheeler County		North Loup	370
Ericson	150	Elyria	50
Bartlett	130	Greeley County	
Sherman County		Spalding	590
Loup City	1180	Greeley	580
Ashton	240	Scotia	270
Litchfield	210	Wolbach	240
Rockville	80	Garfield County	
Hazard	70	Burwell	1200

* unincorporated

Table 2-3

**State of Nebraska Department of Roads
Mileage of Road Surface Types by County**

County		Natural Earth	Gravel	Flexible Paved	Rigid Paved	Total Miles
Custer	Miles	387.90	1546.26	319.46	38.50	2292.12
	Percent	16.92	67.46	13.94	1.68	0.38
Garfield	Miles	48.00	230.00	21.83	6.24	306.53
	Percent	15.66	75.19	7.12	2.04	0.05
Greeley	Miles	161.53	411.54	12.53	4.32	589.92
	Percent	27.38	69.76	2.12	0.73	0.10
Howard	Miles	170.95	650.50	7.12	14.52	843.09
	Percent	20.28	77.16	0.84	1.72	0.14
Loup	Miles	12.92	200.37	25.37	0.00	238.66
	Percent	5.41	83.96	10.63	0.00	0.04
Sherman	Miles	209.41	480.54	28.08	13.91	731.49
	Percent	28.61	65.65	3.84	1.90	0.12
Valley	Miles	111.95	480.54	70.09	9.70	677.48
	Percent	16.52	71.70	9.70	1.43	0.11
Wheeler	Miles	104.75	234.59	4.45	0.00	343.79
	Percent	30.47	68.24	1.29	0.00	0.06
CNGLA	Miles	1207.40	4240.01	488.93	87.19	6023.53
	Percent	20.04	70.39	8.12	1.45	1.00

Nebraska, and has access to the major long distance carriers such as AT&T, MCI, and Sprint; however local exchanges may not be capable of handling increased operations.

Other Land Uses

Most of the towns in the region follow a typical main street business district profile. Businesses on main street are usually family owned and operated. Main streets function as the center piece of a community and help to create a sense of identity. Many of these towns have at least one elementary and high school. Some of towns have hospitals, nursing homes and clinics which serve the community and the surrounding area. Other uses include small industries and salvage yards.

Landfills

Sanitary landfills are a key element of land use that affect the communities in the region. There are 24 active unlicensed landfills in the region according to the Nebraska Department of Environmental Control (Table 2-4). Most of the 24 sites are located close to surface water resources. (Figure 2-4)

According to the Whitney amendment, passed in 1972, these landfills, did not have to meet state environmental regulations, because they serve cities with population of less than 5000. Within the next two years Congress may be expected to pass a national landfill legislation which may not include any such exclusions based on the size of the community. If this legislation does pass, all landfills will be required to conform to EPA regulations concerning sanitary landfills.

The landfills in the region currently do not meet EPA standards. Landfill operations usually require that waste be covered with at least 6 inches of compacted soil at the end of each day to help alleviate odors and rodent problems. Cover is not required by law on sites within the CNGLA region. Most solid waste is generated by households within the region; however special consideration must be given to agricultural and industrial waste in the future. Toxicity and bio-degradability of solid waste are two factors that also must be considered because of their potential negative impacts on ground water resources, particularly the Ogallala aquifer.

Because of the characteristics of the soils and water in the region, solid waste issues may be very important requiring careful study and analysis before any decisions are made.

Summary of Physical-Environmental Problems and Prospects

The CNGLA region enjoys an abundance of quality natural resources. The utilization of these resources in an environmentally sound manner will be critical to the future of the region. Misuse of the region's resources may lead to a decline in the quality of life found within the region.

Water Resources

The supply of quality water is critical to the vitality of the region. Water resources are utilized for drinking, recreation, and agricultural purposes among

Table 2-4

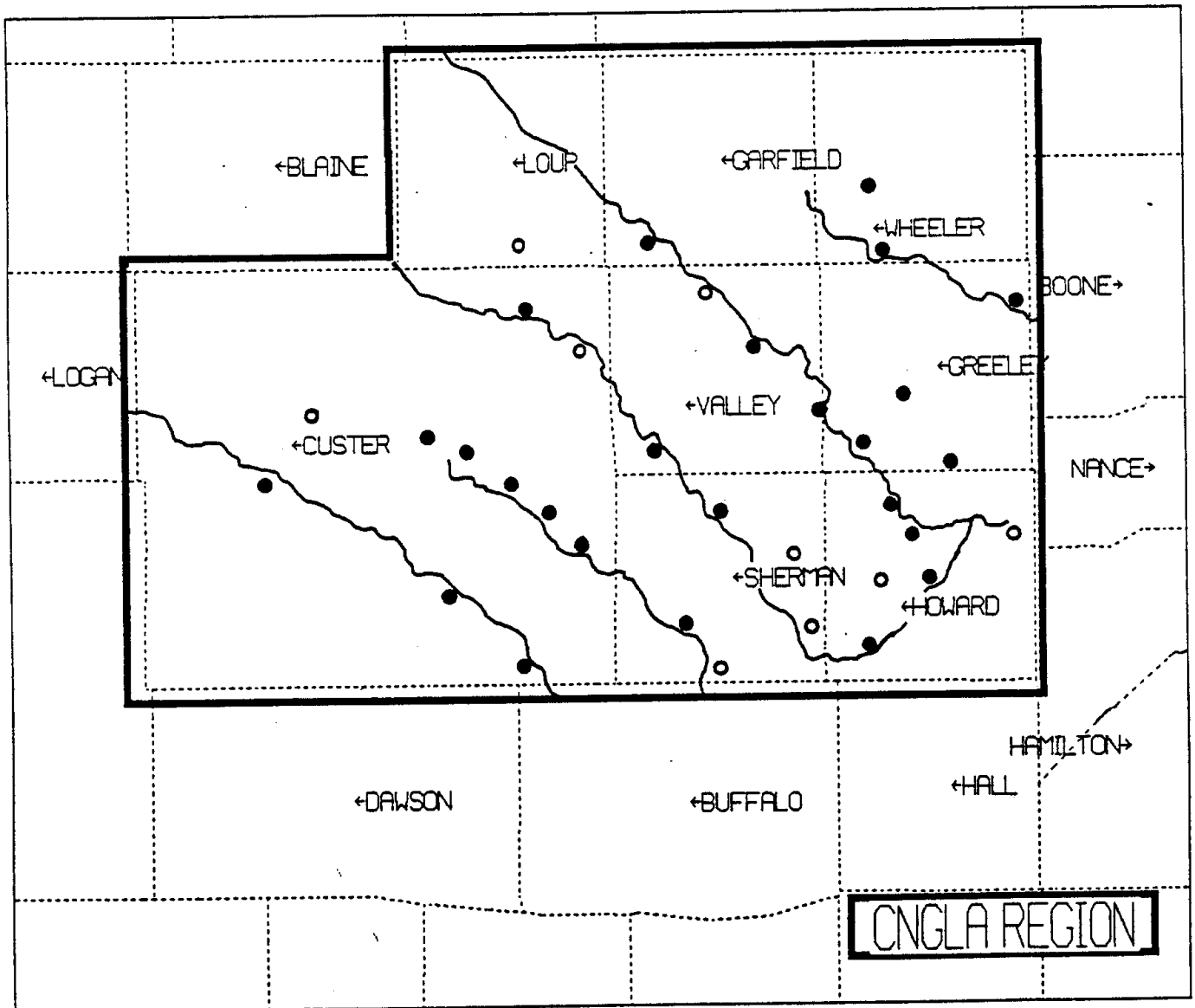
INVENTORY OF CNGLA LANDFILL SITES

COMMUNITY	ACTIVE	ABANDONED	NEAREST WATER SOURCE
CUSHING		X	
ELYRIA		X	
HAZARD		X	
BERWYN	X		250' from Mud Creek
COTESFIELD	X		
ROCKVILLE		X	25' from Mud Creek
ERICSON	X		1/2 mile from Cedar Creek
COMSTOCK		X	
BARTLETT	X		3 miles from Cedar Creek
FARWELL		X	
OCONTO	X		
ELBA	X		40' N of trib. to N. Loup River
MASON CITY	X		
TAYLOR		X	500' N of Loup River
ASHTON		X	50' S.W.
LITCHFIELD	X		3/4 mile from Mud Creek
WOLBACH	X		100' east of creek
SCOTIA	X		1/2 mile west of Wall Creek
ARCADIA	X		1/4 mile from diversion canal
DANNEBROG	X		1/2 mile N of Oak Creek
NORTH LOUP	X		1/2 mile NE of creek
MERNA		X	
CALLAWAY	X		1/4 mile S of S Loup
GREELEY	X		1 1/2 mile NW
ANSLEY	X		
ARNOLD	X		
SPALDING	X		75' from trib. to Cedar River
SARGENT	X		
LOUP CITY	X		near Sherman Reservoir
BURWELL	X		
ST. PAUL	X		near Loup River in 100 yr flood plain,
ORD	X		high water table, 1 1/2 mi SW of N Loup
BROKEN BOW	X		

Source: Nebraska Department of Environmental Control

Figure 2-6

CNGLA Landfill Sites



- Active Landfill Sites
- Abandoned Landfill Sites

Source: Nebraska Department of Environmental Control

others. Ground and surface water resources must be protected from contamination and overuse. The application of pesticides on the region's farms must be done so as not to pollute water resources.

The region contains numerous rivers and streams which may be attractive to industries desiring to locate within the region. Decision makers must be aware of the potential negative impacts associated with industrial usage of area water supplies.

Soil Resources

The region contains a variety of different types of soils which are suitable for a variety of different uses. Care must be taken to utilize soil resources in appropriate ways which preserve and protect soil resources. Wind and water erosion of soils is a potential problem which must be addressed by area farmers and the Soil Conservation Service.

Urban Communities

Communities in the region face a variety of physical-environmental problems. Infrastructure in many communities is aging and may need replacing in the near future. This may become increasingly difficult if the trend in population shifts (discussed later in the social-demographic sub-system section) continues into the future. Many communities in the region have endured through difficult economic times which saw the closing of businesses on their main streets. These closures have led to main streets which are often devoid of people and empty storefronts.

Transportation

The transportation network in the

CNGLA region is essential to the growth and development of the region. Maintenance of the existing highway network is a critical element for the vitality of communities within the region given the high degree of interdependence among communities. The proposed widening of Highway 281 north from Grand Island to St. Paul may strengthen the relationship between these two communities.

Solid Waste

A new site(s) will have to be chosen for a landfill or other appropriate method of handling solid waste. The existing sites will not meet proposed federal standards.

The new location must take into account the natural characteristics of the region, especially the soil and water. It must also be accessible to everyone in the region.

Solid waste disposal is an area of growing economic value. Solutions to the solid waste issue have the potential for creating jobs within the region.

Tourism

Tourism plays a vital role in the economy and quality of life found within the CNGLA region. Problems associated with the physical aspects of the tourism industry in the region include a lack of awareness of tourism opportunities found within the region and a lack of signage along Interstate 80 which would attract interstate travellers into the region. The potential for the growth of tourism in the region is strong given the number and quality of sites found within the region.

Endnotes

1. Miller, G. Tyier Jr., Environmental Science: An Introduction. Wasworth Publishing Company, New York, New York, 1988, p.6.
2. Climatic Atlas of Nebraska.
3. Conservation and Survey Division, The Ground Water Atlas of Nebraska. Conservation and Survey Division, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln, 1986.
4. Agriculture Atlas of Nebraska. University of Nebraska Press, Lincoln, Nebraska, 1986.
5. Elder, John A., Soils of Nebraska. University of Nebraska Conservation and Survey Division, Lincoln, Nebraska, 1969.
6. Census of Agriculture-County Data. (1978, 1982, and 1987).
7. 1989-1990 State Highway Map and Campground Directory.
8. Economic Atlas of Nebraska. University of Nebraska Press, Lincoln, Nebraska, 1977.

Assessment and Analysis of the Social/Demographic Subsystem

The analysis of socio-demographic factors provides the means of evaluating the quality of life in the region. The quality of life in the region is a reflection of the quality of health, housing, jobs, education, care for the elderly and special populations, the crime rate and level of pollution in the region as perceived and experienced by residents of communities in the region.

The study of the social/demographic subsystem involves an analysis of population characteristics of settlements in the CNGLA region. The key characteristics of population are age distribution, household characteristics, housing, index of urbanization, birth and death rates, infant mortality rate, causes of death, marriage and death rates, and net migration. Also important is analysis of labor and income analysis in terms of total personal income and per capita personal income. Health care is analyzed in terms of health service delivery, physician/population ratio, physician movement/ specialization trends, hospital patient inflow/outflow, and services for special populations. Education is evaluated in the context of educational attainment levels, and dropout rates. Public safety/crime prevention services will also be assessed.

Population Characteristics

Population Analysis

The population of Nebraska was 1,569,825 in 1980. The population of the eight county region, which includes: Custer, Garfield, Greeley, Howard, Loup, Sherman, Valley, and Wheeler, was 38,253 in 1980.¹ A time series analysis of the state, the region, and the individual counties is presented in Table 3-1.

A decline in population of 37.5% occurred within the region from 1940-1980, as shown in Figure 3-1. From 1980-1990, population estimates in the region declined 6.41% from 38,253 to 35,800. The population of the state increased 16.18% during the period 1940-1980, as shown in Figure 3-2.

Age Structure

The regional population is divided into four age categories: 0-5, 6-19, 20--64, and 65+. The first of these groups, 0-5, represents those individuals who are most likely to require some degree of day-care service, the 6-19 age group are the ones for whom the educational

Table 3-1

```

=====
TIME-SERIES ANALYSIS OF POPULATION
=====
STATE AND REGION
=====
YEAR          STATE          REGION
=====
POP.*          ARC*          POP.*          ARC.*
=====
1940    1315634          61176
1950    1325510          51430          -15.93%
1960    1411921          44718          -13.05%
1970    1485333          39726          -11.16%
1980    1569825          38253          -3.71%
1988    1602000          35800          -6.41%
1990    1660772          37910          -0.9
2000    1735240          36000          -2.3
2010    1819736          35616          -3.3
=====

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=====
COUNTIES
=====
CUSTER          GARFIELD          GREELEY          HOWARD
=====
YEAR    POP.*    ARC.*    POP.*    ARC*    POP.*    ARC*    POP.*    ARC*
=====
1940    22591    3444    6845    8422
1950    19170    -15.14    2912    5575    -16.55    7226    -14.2
1960    16517    -13.84    2699    4595    -17.58    6541    -9.48
1970    14092    -14.68    2411    4000    -12.95    6807    4.1
1980    13877    -1.53    2363    3462    -13.45    6773    -0.5
1988    12800    -7.76    2100    3200    -7.57    6400    -5.5
1990    13777    -0.72    2361    -0.08    3401    -1.8    6712    -0.9
2000    13334    -3.2    2309    -2.2    3331    -2.1    6557    -2.3
2010    12934    -3    2196    -4.9    3193    -4.1    6319    -3.6
=====

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=====
COUNTIES
=====
SHERMAN          VALLEY          WHEELER          LOUP
=====
YEAR    POP.*    ARC.*    POP.*    ARC*    POP.*    ARC*    POP.*    ARC*
=====
1940    7764    8163    2170    1777
1950    6421    -17.3    7252    -11.16    1526    -29.68    1348    -24.14
1960    5382    -16.18    6590    -9.13    1297    -15.01    1097    -18.62
1970    4725    -12.21    5783    -12.25    1054    -18.74    854    -22.15
1980    4226    -10.56    5633    -2.59    1060    0.57    859    0.59
1988    3900    -7.71    5600    -0.59    1000    -5.66    800    -6.87
1990    4175    -1.2    5589    -0.72    1036    -2.3    843    -1.8
2000    4069    -2.5    5395    -3.4    992    -4.2    825    -0.95
2010    3934    -3.3    5232    -3    973    -1.9    804    -3.7
=====

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* POP.= POPULATION, ARC= Average Rate of Change Per Decade

Source: U.S. Census Bureau

Figure 3-1

Population Time Series For The CNGLA Region

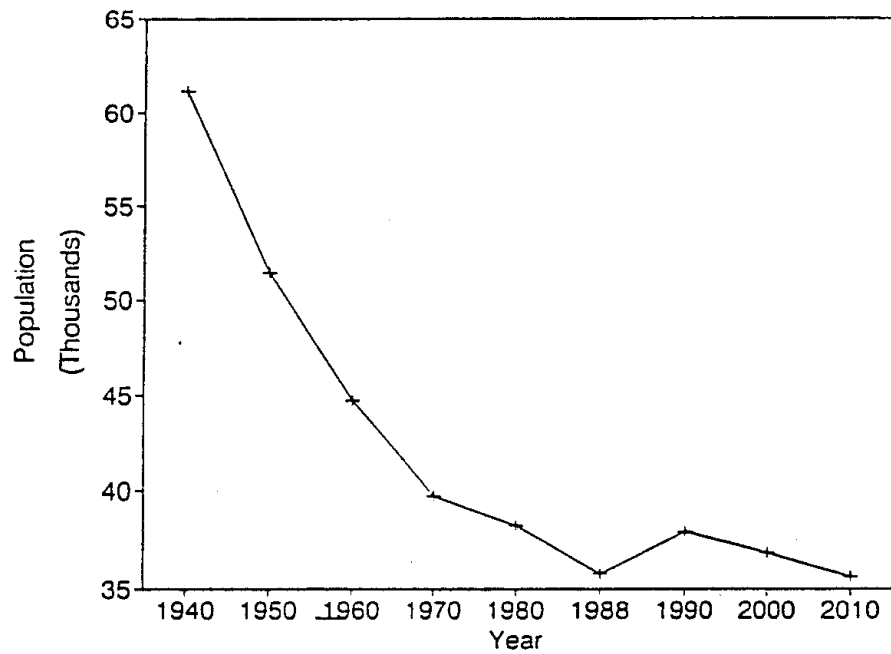
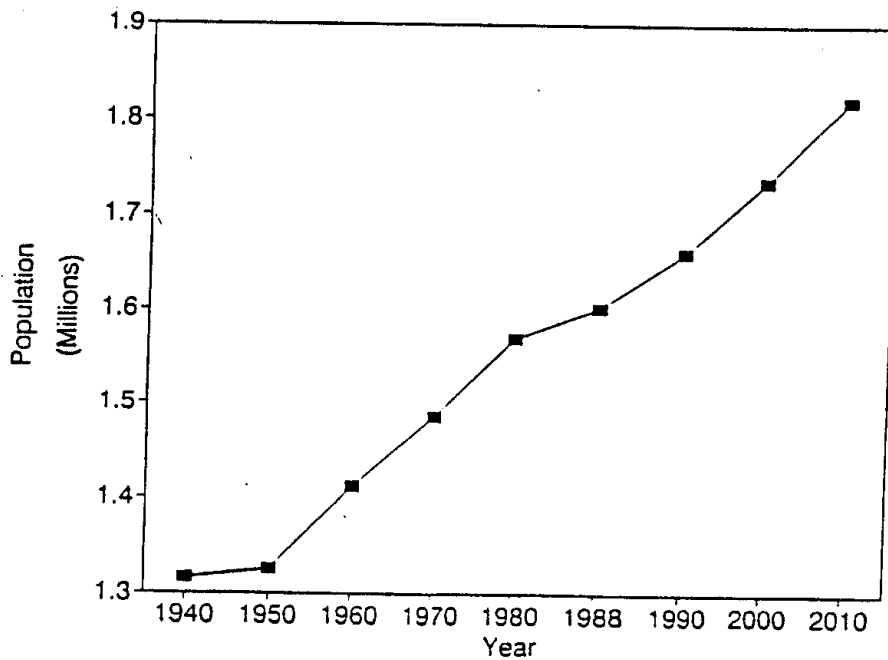


Figure 3-2

Population Time Series For Nebraska



services are being provided, the 20-64 group makes up the labor force, and the 65+ group comprises that portion of the population who may require elderly care services.

The 0-5 age category declined from 4,646 people in 1960 to 2,884 people in 1970. However, the population in this category began to increase from the 2,884 people in 1970 to a total of 2,972 in 1980. The 6-19 age category declined from 11,989 people in 1960 to 8,607 people in 1980. However, the population in the 20-64 age category began to rise from 1970-1980, to a total of 18,851 in 1980. Additionally, the 65+ population showed a rise from 6,435 in 1960 to 7,421 in 1980.

The data above indicates a decreasing demand on day care services for the future of the CNGLA region. It would also be reasonable to conclude that the need for educational services may also continue to decline. This may signal a need to reassess the economic feasibility of the number of school districts which exist within the region. The indication within the region relating to the population which comprises the labor force, 20-64, exhibits an expected increase in demand of quality employment opportunities. The displayed increase in the elderly population indicates an increasing demand on elderly care services.

Cumulative Population Projections

According to the Nebraska Statistical Handbook, the population of the region is expected to decline to 35,616 in the year 2010. Conversely, the state's population is expected to grow to a population of 1,819,736 by the year

2010.² These trends are illustrated in Figures 3-1 and 3-2.

The trends represent a large factor that determines the economies of scale within the region. All planning for the region must consider the impacts of this data on the future of the region. The residents of each community must analyze the importance of all activities in their respective communities, and determine which activities will be affected the most by a declining economy of scale.

Population Projections By Age

The projections presented in Table 3-2, Figure 3-3, and Figure 3-4 assume a continuance of the trends which were exhibited in the region from 1940-1980.³ Based on this data, the population in the 0-5 age category is expected to continue to increase until 2010, reaching a total population of 3,312 people. The population in the 6-19 category will be 10,243 by the year 2010. The 20-64 age category is expected to make a gradual increase to 20,971 in the year 2010. The 65+ age category, will comprise a greater percentage of the population by the year 2010, for a total of 10,721 people. It is imperative to realize these figures are speculative projections and should not be interpreted as predictions. They however serve as a basis for analysis.

Given the projected futures within each of these categories, several hypotheses may be drawn about the future characteristics of the CNGLA region. For example, with an increasing percentage of the population comprising the 0-5 age category, the region may exhibit an increased demand for

Table 3-2

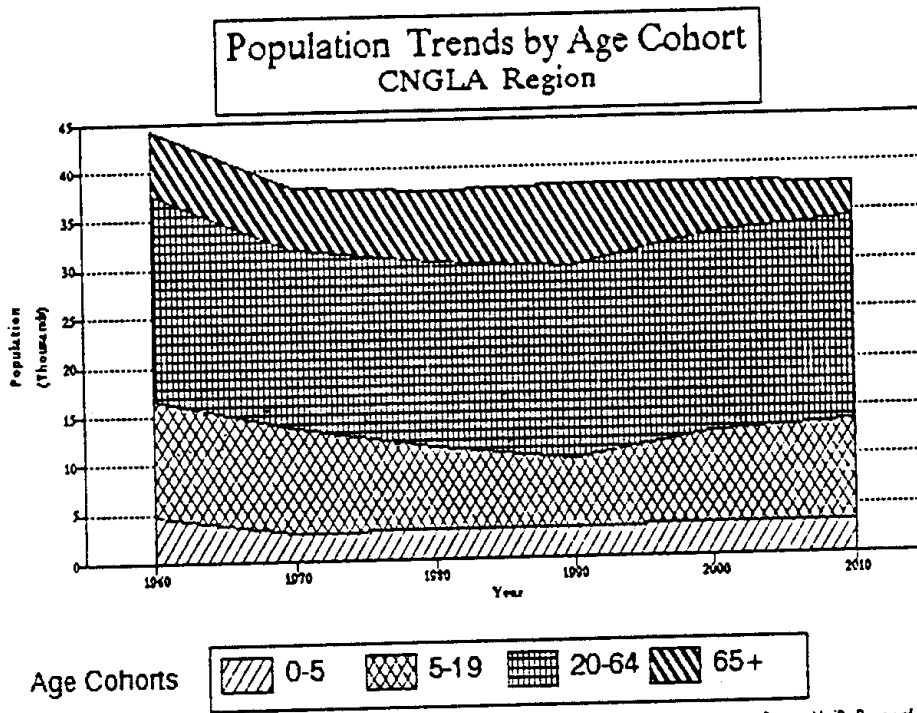
**Total Population by Age Cohorts
CNGLA Region and State of Nebraska**

Cohort Age	YEAR					
	1960		1970		1980	
	CNGLA	State	CNGLA	State	CNGLA	State
0-5	4,646	160,253	2,884	120,312	2,972	118,679
5-19	11,989	375,995	10,599	415,299	8,607	333,431
20-64	21,134	714,432	18,306	689,343	18,851	981,298
65+	6,435	164,206	6,531	183,736	7,421	215,851
TOTAL	44,718	1,411,921	39,726	1,485,333	38,253	1,569,825

Cohort Age	YEAR					
	1990		2000		2010	
	CNGLA	State	CNGLA	State	CNGLA	State
0-5	3,139	125,554	3,237	126,499	3,312	127,745
5-19	6,945	352,748	9,414	310,261	10,243	264,226
20-64	19,895	1,038,149	20,507	1,224,385	20,971	1,430,494
65+	8,477	228,356	5,208	250,569	3,547	275,326
TOTAL	37,910	1,660,772	36,830	1,735,240	35,616	1,819,736

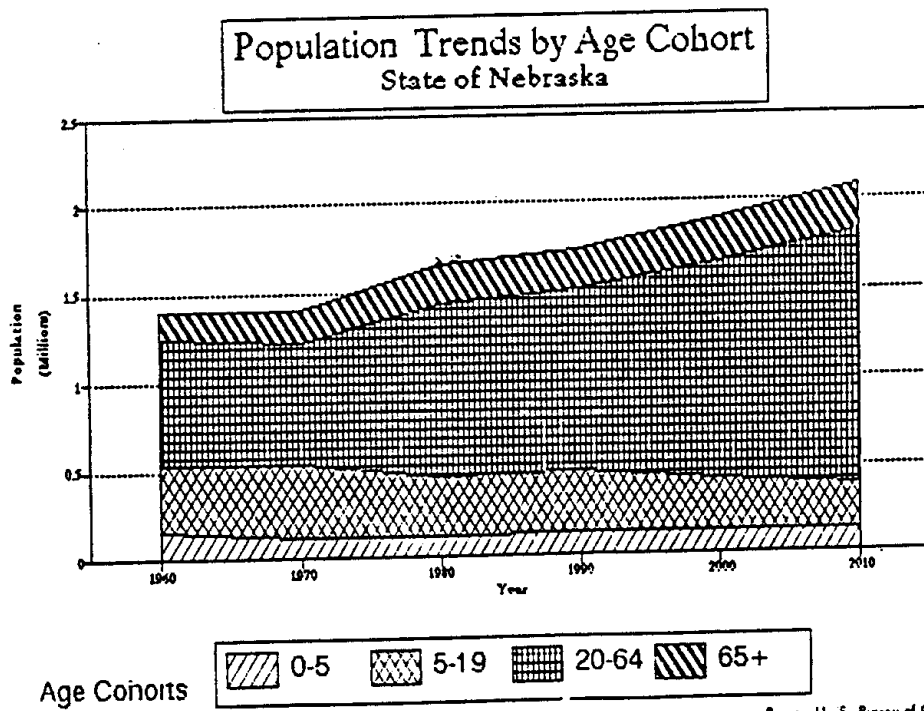
Source: U.S. Bureau of Census

Figure 3-3



Source: U. S. Bureau of Census

Figure 3-4



Source: U. S. Bureau of Census

day care services within the region. This may be due in part to the trend in which both parents may be working outside the home. Also, an analysis of the trends in the 6-19 age category shows a declining demand on educational services within the region. This may necessitate the need to analyze the educational priorities as well.

The anticipated increase of people who may be in the labor force category, ages 20-64, emphasizes the need for the creation of quality employment opportunities. Additionally, the expected increase in the 65+ age category may have several impacts on the region. For instance, the demand for elderly care facilities may greatly increase. Also, the potential number of widowed individuals may increase which in turn places an increased demand on housing for single individuals. Some individuals may move to rest homes or retirement communities in other urban areas thereby creating vacancies in existing housing in the region.

Household Characteristics

Various household characteristics are analyzed in this study including the total number of households in Nebraska, the total number in the delineated region and in the counties that comprise the CNGLA.⁴ The characteristics also include the number of persons per household, the number of female headed households and the number of one person households. Comparisons are made between figures for the region and those for the state. Comparisons of figures among various counties in the region are also made.

As shown in Table 3-3, the total

number of households in Nebraska in 1985 was 604,541. The total number of households in the CNGLA region was 14,469. Custer County had the largest number of households (5266) while Loup County had the least (345).

Between 1980 and 1985, the total number of households in Nebraska increased by 5.8% and the total number of households in the CNGLA region increased by 0.3%. In 1985, the percentage of one person households in Nebraska as well as in the CNGLA Region was 24.3%. Garfield County had the highest percentage of one person households in the Region with 27.7% and Greeley County had the lowest percentage with 19.5%. This pattern in the region is in direct contrast to the decline of population in the region. If population is declining and the number of households is increasing it may be concluded that younger members of households may be the community. This conclusion has since been confirmed from local enquiries. The implication of this is that populations in communities in the region are aging rapidly as fewer young people remain in the region.

The moderate percentage of one person households in the CNGLA Region may be attributed to the fact that a large number of retirement age individuals reside in the region; therefore, many individuals who live alone may be widowed.

In 1980, the average number of persons per household in Nebraska was 2.57 and the average number of persons per household in the CNGLA region was 2.64, which was slightly higher than that of the state as a

Table 3-3

HOUSEHOLD CHARACTERISTICS

DATA OBTAINED FROM THE U.S. CENSUS COUNTY AND CITY DATA BOOK 1988.

COUNTY	1980			1985		
	TOTAL HOUSEHOLDS	% CHANGE 1980-1985	PERSONS PER HOUSEHOLD	TOTAL HOUSEHOLDS	% FEMALE HEADED HOUSEHOLDS	% ONE PERSON HOUSEHOLDS
Custer	5271	-0.1	2.53	5266	4.5	25.3
Garfield	914	0.2	2.43	916	5.5	27.7
Greeley	1213	-3.6	2.77	1169	4.9	27.5
Howard	2364	1.8	2.7	2553	3.7	19.5
Loup	319	8	2.64	345	4.7	22.3
Sherman	1530	-1.7	2.64	1504	4.6	24.2
Valley	2170	8.4	2.47	2352	3.3	26.9
Wheeler	368	-1.1	2.93	364	4.3	21.2
Region	14419	0.3	2.64	14469	4.4	24.3
Nebraska	571400	5.8	2.57	604541	7.1	24.3

whole. Wheeler County had the greatest number of persons per household in the CNGLA region with 2.93 and Garfield County had the least with 2.43.

The percentage of female headed households in Nebraska in 1985 was 7.1% and the percentage in the CNGLA region was 4.4%. Garfield County had the highest percentage of female headed households with 5.5% and Valley County had the lowest percentage with 3.3%.

The low percentage of female headed households in the CNGLA region may be attributed to a lower divorce rate in the region, which implies a high regard for family values.

Housing

The increase in the number of households in the CNGLA region as identified earlier may necessitate the construction of additional housing units within the region. The construction and rehabilitation of affordable housing may be necessary as a result of the existence of female-headed and single family households in the region. Affordable units may include small houses, rental houses, and apartments (which are in short supply).⁵

The moderate percentage of elderly individuals in the region may necessitate the construction of retirement housing and nursing homes for older individuals who are in need of assisted living care. Such units may also accommodate individuals who reside in single person households.

As previously stated, the moderate number of single family households may be related to the number of elderly individuals in the region. Many retire-

ment aged individuals who reside alone may be widowed; therefore it may be difficult for an individual to maintain his or her home. As a result, many individuals may desire to move into an apartment, retirement community or a nursing home, however, these types of units are in limited supply within the CNGLA region.

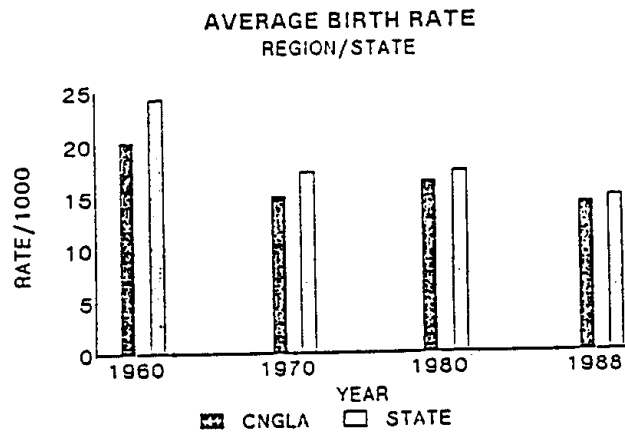
Vital Statistics

Birth and Death Rates

Quality of life in the CNGLA region may also be assessed by examining the birth and death rates per 1,000 population in the region as compared to the state. Figure 3-5 shows trends in the average birth rates from 1960 -1988. The birth rate declined in the region and in the state since 1960.⁶ The average number of births in the region declined by 6% from 1960 -1988, while the state average declined by 9.6% for the same period. The region has always had a lower level of birth rate compared to that of the state with the discrepancy diminishing over the decades examined. Birth rates in 1988 are similar in the region and the state, 14.3% and 14.9% respectively. A declining birth rate may be explained by fewer couples deciding to have children and by the apparent exodus from the region of young adults in their prime child-bearing years.

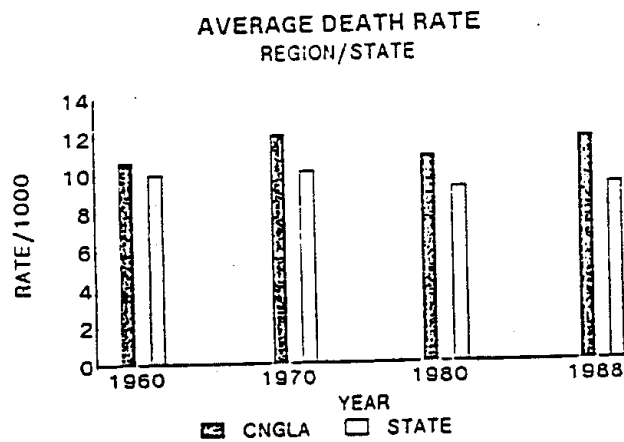
An examination of the death rates for the state and the CNGLA region by decade from 1960 to 1988 shown in Figure 3-6, reveals that the region exhibited a fluctuating pattern with a slight upward trend between 1980 and

Figure 3-5



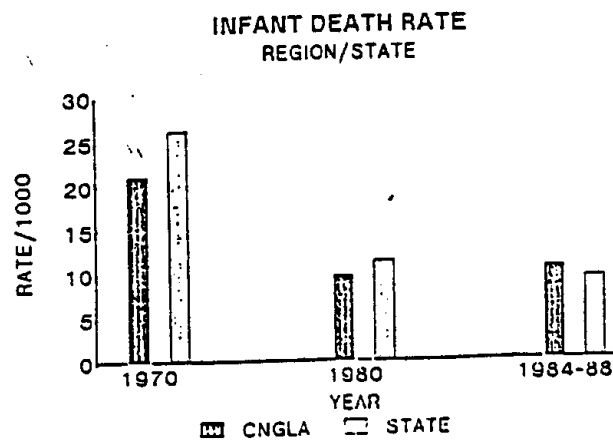
SOURCE: Nebraska Department of Health, Vital Statistics Reports, 1960-1988

Figure 3-6



SOURCE: Nebraska Department of Health, Vital Statistics Reports, 1960-1988

Figure 3-7



SOURCE: Nebraska Department of Health, Vital Statistics Reports, 1960-1988

1988.⁷ While the region's death rates are higher than that of the state's in each of the decades reviewed, the difference is minimal until 1988, where there is a significant difference of 2.5%. Whereas a higher death rate may be an indication of a larger share of aging population, it also serves as a key reminder of the need for adequate health care.

Infant Mortality Rate

Infant deaths are defined as deaths of persons under one year of age and are measured as the number of deaths per 1,000 live births. Figure 3-7 shows that the CNGLA region's 1970 rate of 21.2/1000 and 9.8/1000 for 1980 were both lower than that of the state in 1970 and 1980, (26.3/1000 and 11.5/1000 respectively) but higher than that of the state for the years 1984-1988, (10.6/1000 to 9.4/1000 respectively), which is an average rate.⁸

Since there is such a small number of births per year, the region's infant mortality rate may be expected to be the same as or lower than that of the state. Due to the higher rate within the region, the numbers during the years 1984 -1988, as shown above, may reflect a problem in the health care delivery system.

Causes of Death

Heart disease and cancer are the number one and two causes of death respectively in both the region and the state in the four time periods examined: 1960, 1970, 1980 and 1988. While the incidence of deaths caused by heart disease has remained steady in the region as well as in the state since

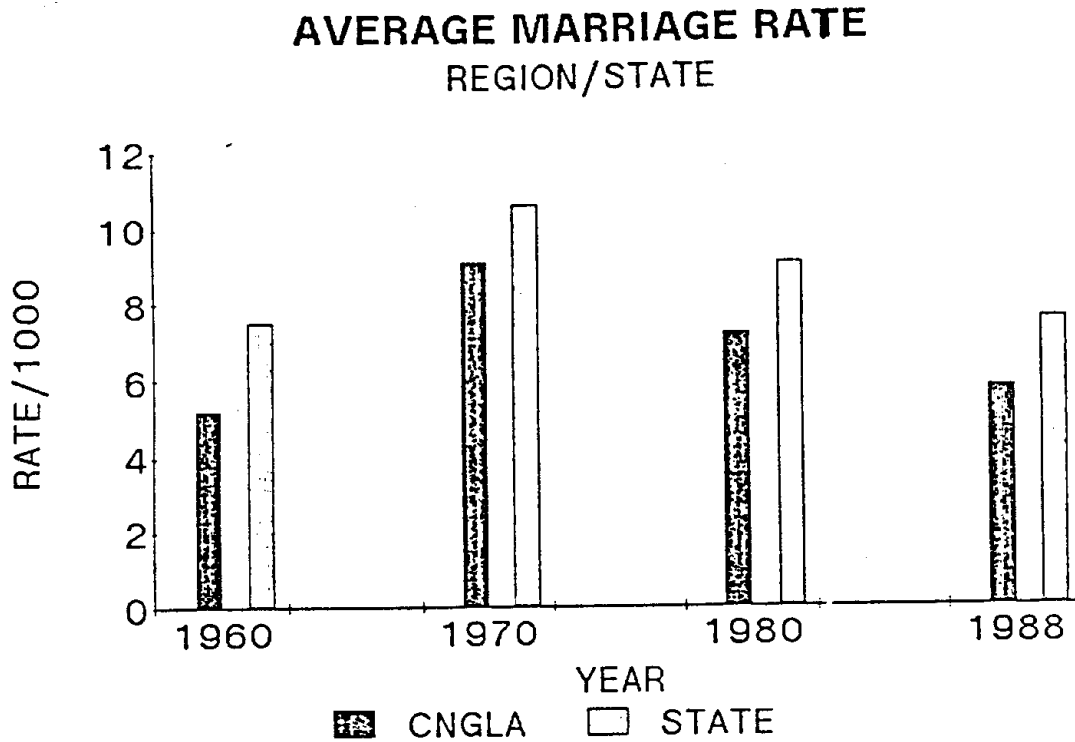
1960, at 37%, the incidence of deaths caused by cancer has steadily increased from 14-16% in 1960 to 18-21% in 1988.⁹ Treatment of disease and cancer requires very specialized medical services which are available in the CNGLA region in a very limited amount. All of the above indicators are suggestive of the need for improved health care services in the region to serve the diverse needs of various segments of the population.

Marriage and Divorce Rates

An examination of the region's marriage and divorce rates as measured at a rate per 1,000 population may be used as an indicator of family stability in the region. Figure 3-8 shows that the marriage rate in the region is consistently lower than that of the state over the four time periods. After peaking in 1970, at 9.1/1000 and 10.6/1000, the marriage rate in the region and the State has been declining.¹⁰ Figure 3-9 reveals that the divorce rate in the region is consistently lower than that of the state; both rates show a gradual upward trend."

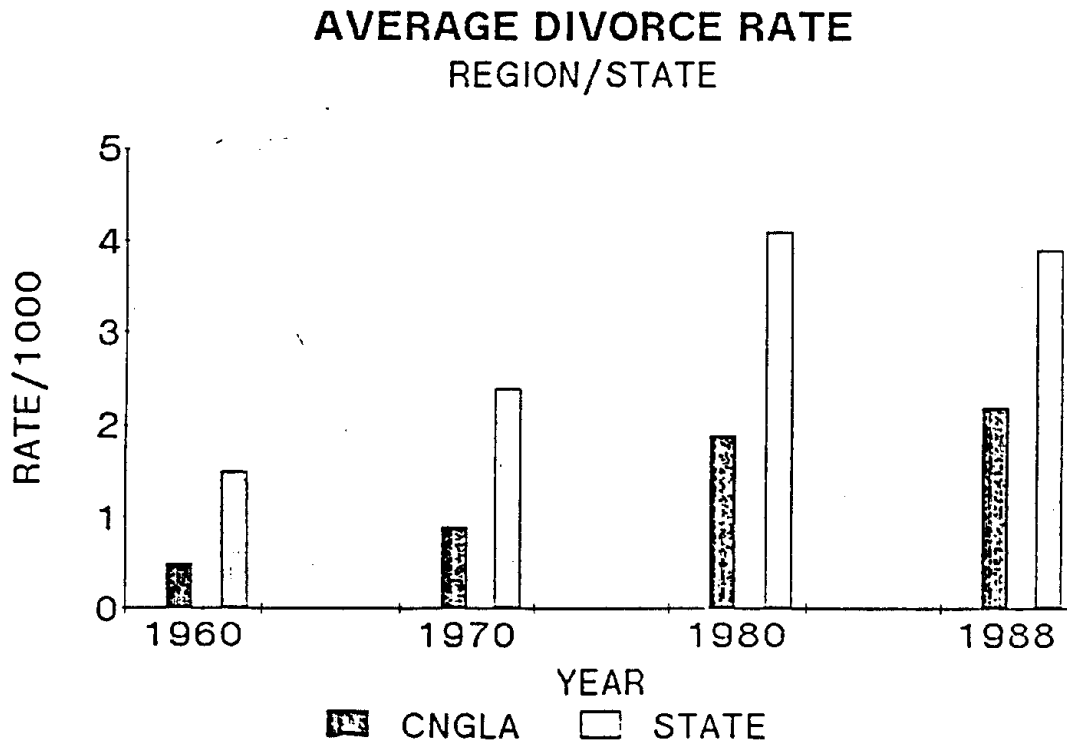
The region has a low marriage rate and low divorce rate when compared to that of the state. A low marriage rate may reveal that young, single individuals are leaving the area and marrying elsewhere. It may also indicate that marriage may be delayed or not considered. A low divorce rate is an indication of family stability in the region. These measures of marital and family stability have important economic and housing implications.

Figure 3-8



SOURCE: Nebraska Department of Health, Vital Statistics Reports, 1960-1988

Figure 3-9



SOURCE: Nebraska Department of Health, Vital Statistics Reports, 1960-1988

Index of Urbanization

The index of urbanization measures the extent to which the population in the region resides in rural or urban areas. Analysis of the index of urbanization by decade reveals the movement of the population into those areas classified as urban. This index becomes a significant factor in planning for the people in the region. Figure 3-10 shows that the percentage of persons living in urban areas in the CNGLA gradually increased from 45% in 1960 to over 55% of the total population in 1980.¹² From 1980 to 1988, however, the percentage decreased to 52%, demonstrating that more people in urban areas in the CNGLA region chose to leave the area. With a declining urban population the quality of life in the CNGLA may be difficult to maintain because services that depend upon the population base may find it difficult to remain viable.

Net Migration

Migration is an important factor affecting the quality of life in the CNGLA region. As demonstrated in Table 3-4, every county in the CNGLA region has experienced out migration considerably exceeding the out migration percentage rate of the state. The high percentage of out migration in the region may be considered as an indicator of inadequate job and other social/recreational opportunities in the region. It may also be reflective that the quality of life in the region does not meet the expectations of a sizeable share of the population who choose to live elsewhere in the state and the country. This places a considerably

high emphasis on the improvement of the quality of life to all age groups in the region to serve as a source of attraction to retain population.

Analysis of Labor

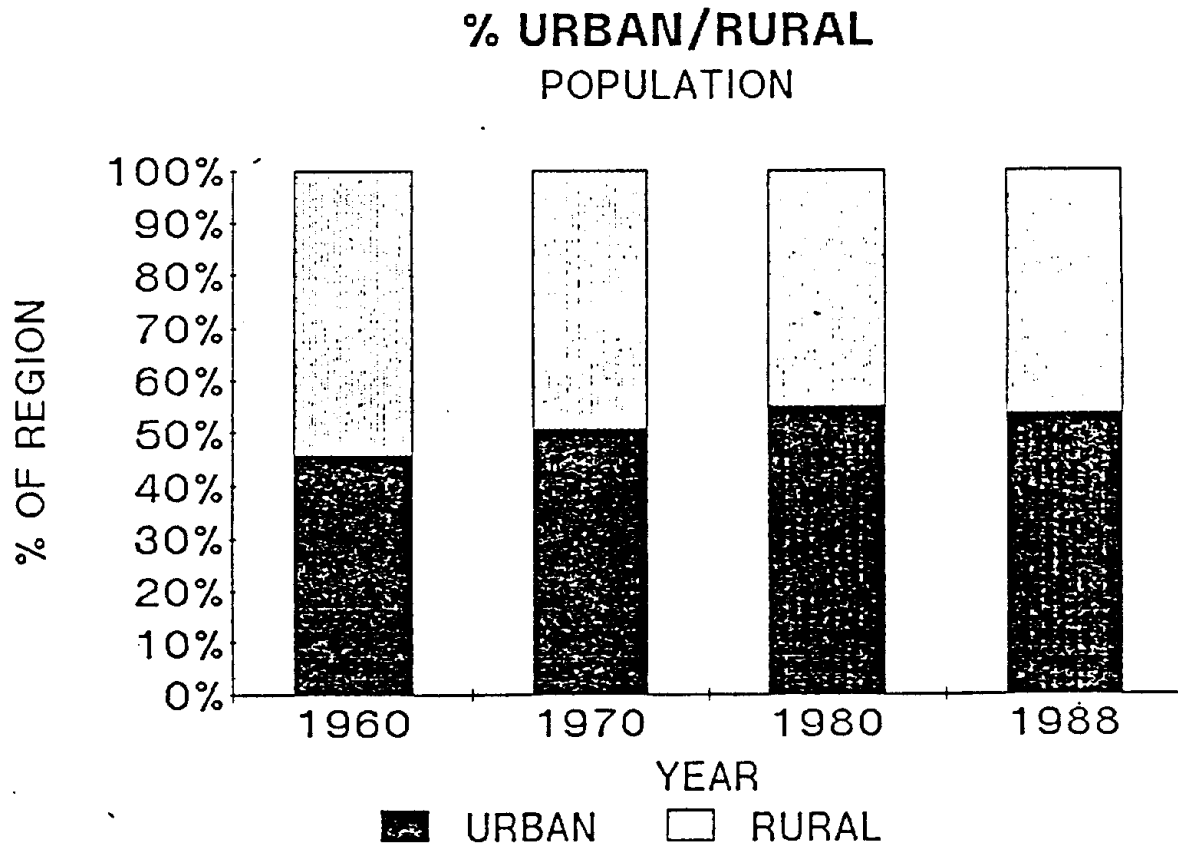
Labor Distribution

The labor distribution rates shown in Table 3-5 include both farm and non-farm sources and show employment and unemployment rates.¹³ Unemployment rates in Nebraska increased since 1970 (1.6%)(labor force of 642,416) but decreased since 1980 (4.0%)(labor force of 767,915) to (2.3%)(labor force of 838,884) in 1990. For the same period unemployment rates in the CNGLA region decreased from 1970 (2.3%)(labor force of 18,085) to 1990 (2.0%)(labor force of 16,363). Increasing employment opportunities may enhance the attractiveness of the region and may make the region competitive in the retention of taxable income earners. However, the low unemployment rate in the region indicates that in addition to quality employment opportunities, the key to population retention may be the improvement of the quality of life vis-a-vis education, health and social/recreational infrastructure.

Total Personal Income

Per capita personal income levels by county and state, show that five out of the eight counties in the region have lower per capita income levels than the average rural areas of the state. With the exception of Wheeler county, all of the counties have lower per capita

Figure 3-10



SOURCE: Nebraska State Data Center, Center for Public Affairs Research, 1988

Table 3-4

NET MIGRATION STATE/COUNTY

	1960 - 1970		1970 - 1980		1980 - 1990	
	*NET MIG.	% OF POP.	*NET MIG.	% OF POP.	*NET MIG.	% OF POP.
STATE	-72700	-5.2	-12616	-0.8	-58000	-3.7
CUSTER	-2932	-17.8	-460	-3.3	-900	-6.7
GARFIELD	-406	-15	-7	-0.3	-200	-9.3
GREELY	-817	-17.8	-583	-14.6	-300	-9.2
HOWARD	-185	-2.8	-283	-4.2	-400	-6.3
LOUP	-287	-26.2	-8	-0.9	-100	-8.5
SHERMAN	-985	-18.3	-565	-12	-300	-6.6
VALLEY	-939	-14.2	-136	-2.4	-100	-1.1
WHEELER	-380	-29.3	-73	-6.9	-100	-12.6

SOURCE: BUREAU OF THE CENSUS, BUREAU OF BUSINESS RESEARCH.

*NET MIGRATION IS THE DIFFERENCE BETWEEN THE POPULATION FOR THE END YEAR AND THE BEGINNING YEAR PLUS THE NATURAL INCREASE (BIRTHS MINUS DEATHS) FOR THE PERIOD. THE MINUS SIGN (-) DENOTES OUTMIGRATION.

Table 3-5

POPULATION, LABOR FORCE, EMPLOYMENT, UNEMPLOYMENT,
 EMPLOYMENT TO POPULATION %, UNEMPLOYMENT TO POPULATION %, UNEMPLOYMENT RATE

	CUSTER	GARFIELD	GREELY	HOWARD	LOUP	SHERMAN	VALLEY	WHEELER	STATE	REGION
1970										
POPULATION	14012	2411	4000	6007	854	4725	5703	1054	1487963	39726
LABOR FORCE	6530	1370	1750	2760	400	2190	2600	405	642416	10005
EMPLOYMENT	6420	1360	1700	2680	360	2120	2550	475	631054	17665
UNEMPLOY	110	10	50	90	45	60	40	10	10562	415
% EML/POP	43	56	43	39	42	45	41	45	42	41
% UNEM/POP	0.7	0.4	1.3	1.3	1.3	1.2	0.7	0.9	0.7	1
UNEMP RATE	1.7	1	2.9	3.1	10.6	3	1.7	1.8	1.6	2.3
1980										
POPULATION	13877	2363	3462	6773	59	4226	5633	1060	1569025	30253
LABOR FORCE	6568	1151	1453	2001	479	1754	2633	630	767915	17549
EMPLOYMENT	6430	1111	1399	2022	460	1700	2501	617	731019	17136
UNEMPLOY	130	40	54	59	19	46	52	13	30346	413
% EML/POP	46	47	40	42	54	40	46	46	50	45
% UNEM/POP	0.9	1.9	1.5	0.9	2.2	1	0.9	1.2	1.9	1
UNEMP RATE	2	3.5	3.7	2.1	4	2.6	2	2.1	4	2.4
1990										
POPULATION	12267	2139	3001	6049	603	3709	5160	944	1572503	33960
LABOR FORCE	5946	1072	1348	2529	427	1625	2768	648	838004	16363
EMPLOYMENT	5850	1035	1320	2473	409	1562	2731	639	819410	16019
UNEMPLOY	96	37	28	56	18	63	37	9	19474	317
% EML/POP	47	48	44	41	60	42	48	60	52	47
% UNEM/POP	0.78	1.72	0.93	0.93	2.63	0.02	0.72	0.95	1.24	0.9
UNEMP RATE	1.6	3.5	2.1	2.2	4.2	3.9	1.3	1.4	2.3	2

SOURCE: NEBRASKA DEPARTMENT OF LABOR
 DIVISION OF EMPLOYMENT
 RESEARCH AND STATISTICS

income levels than that of the state, see Figure 3-11.¹⁴ Wheeler county's low population, combined with the profitable feedlot operation, has allowed the county to almost double the average per capita income level of the state, see Figure 3-12. Total personal income levels are the taxed incomes that were earned in one year by taxpayers as expressed on their returns. Total personal income in Nebraska increased by 5.3% (\$22,514-23,701 in millions) from 1987-1988.¹⁵ In the eight county CNGLA region, personal income in 4 of the 8 counties increased in percentage from 1987 -1988, as shown in Figure 3-13. None of the counties in the region had personal income totals increase as much as the state average but two out of the eight grew at the same rate as state's non-metropolitan average. These figures show that the income of the region as a whole is declining or at least maintaining the status quo, as shown in Figure 3-14. One county, Greeley, showed a 9% decrease in personal income totals from 1987 - 1988. Improving personal income totals may keep the area attractive to its residents. Improving personal income with available resource development suggests a need to explore value added opportunities to existing development programs and projects.

Poverty Characteristics

The Nebraska Department of Social Services defines poverty as income below 8,024 for a family of four. A Nebraska Department of Health study indicates that 18% or 6,516 of the residents in the CNGLA region live below

the poverty level, compared to 10.7% of the state's population which lives below the poverty level.¹⁶

One factor that contributes to the poverty level in the region is the lack of quality, well-paying employment opportunities. Adult educational facilities and programs which may provide necessary skills and knowledge to obtain better employment opportunities are also lacking in the region. Poverty levels also indicate that fewer people can afford quality housing, education, public health, and social/recreational infrastructure, thus fewer people can contribute to the community to provide for these services.

Health Care

Delivery of Health Care Services

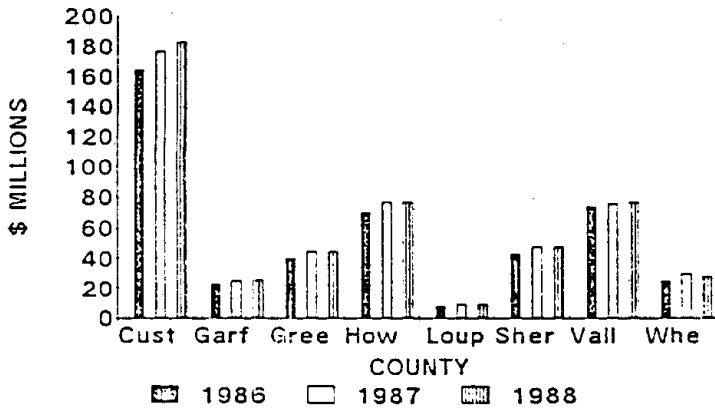
The delivery of health care services is a major concern for the residents of the CNGLA region and is an important attribute contributing to the overall assessment of the area's quality of life. Health care services available and accessible in the region measure the extent to which health care services adequately serve the health care needs of the region's residents. Physician/population ratios, physician movement trends, physician's specialization and hospital inflow/outflow data measure the level of health care service in the region.

Physician/Population Ratio

Figure 3-15 reveals the number of persons served per physician in each of the region's eight counties, the region, and the state. The Nebraska Depart-

Figure 3-11

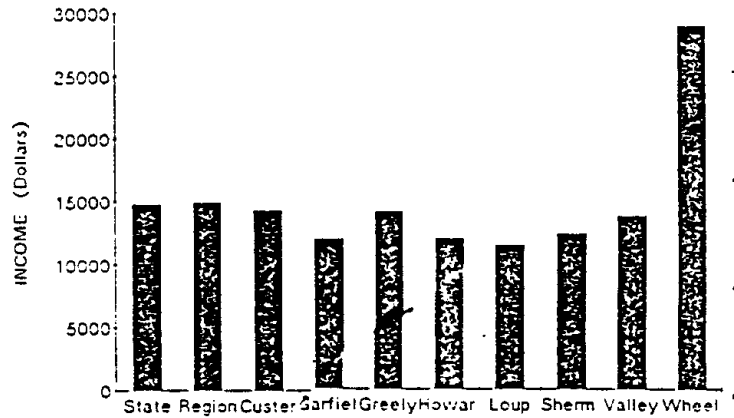
Total Personal Income by County



SOURCE: U.S. BUREAU OF CENSUS

Figure 3-12

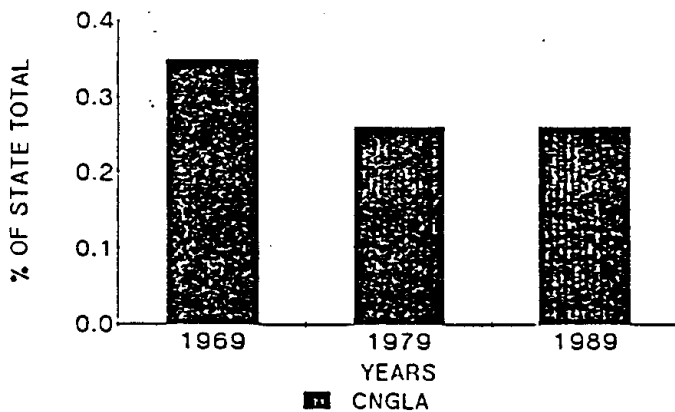
1988 PER CAPITA PERSONAL INCOME



SOURCE: U.S. BUREAU OF THE CENSUS

Figure 3-13

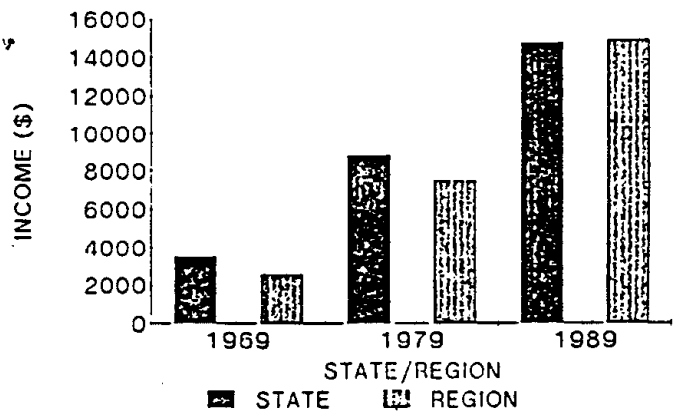
CNGLA % OF STATE PERSONAL INCOME



SOURCE: U.S. BUREAU OF CENSUS

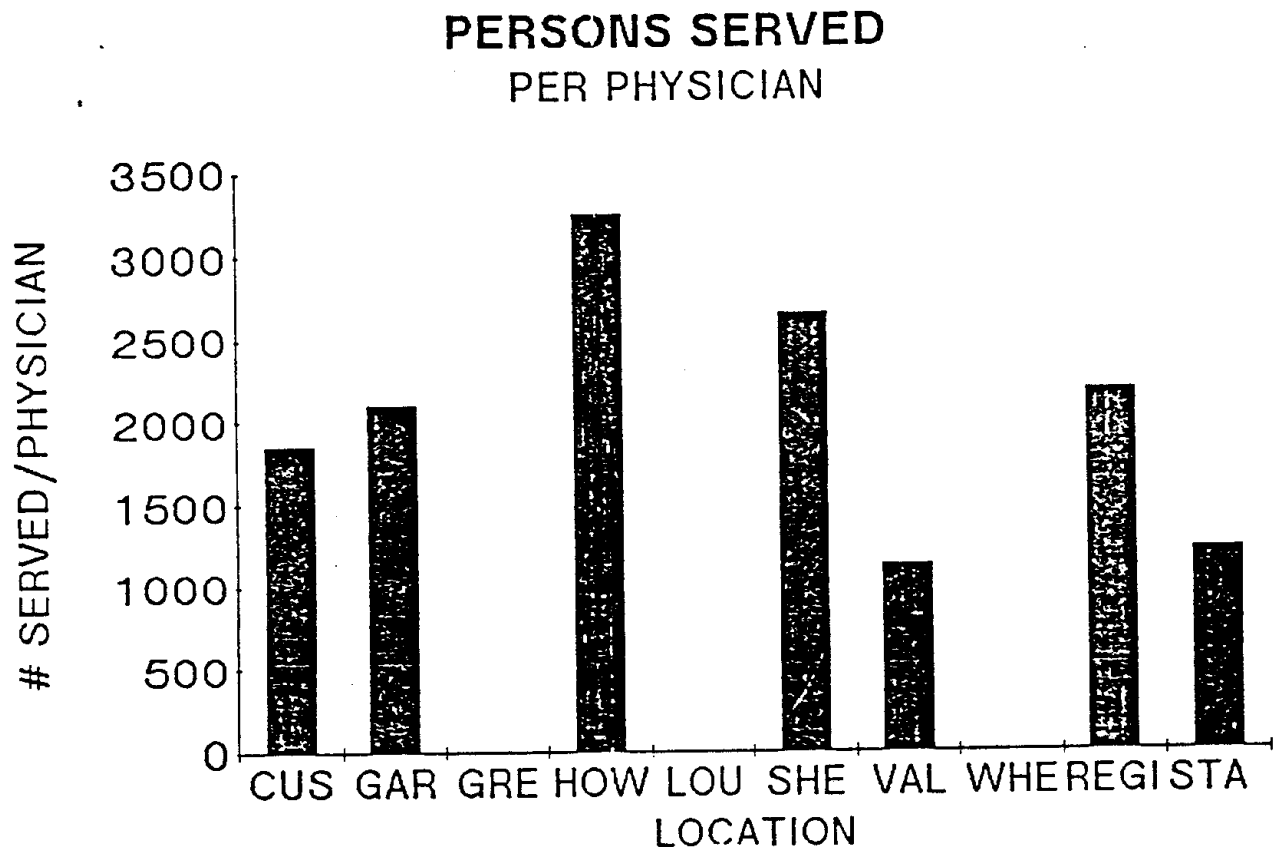
Figure 3-14

PER CAPITA INCOME 1969 - 1979 - 1989



SOURCE: U.S. BUREAU OF CENSUS

Figure 3-15



SOURCE: Nebraska Department of Health, Office of Rural Health,
1990

ment of Health recommends that the physician/population ratio should be at least 1 physician per 3,000 residents for proper health care.¹⁷ The state has a physician/population ratio of 1230:1. The ratio meets recommended standards for the state, however the physicians are not distributed equitably among the communities in the region in which 2181 persons are served per physician. Howard County exceeds that ratio and Sherman County comes quite close. Greeley, Loup and Wheeler Counties do not have a resident physician in their counties and must depend on travelling physicians for their health care needs or travel to adjacent counties where physicians are available. Either recourse places a strain on the health care delivery system where localized health care treatment is often preferred and recommended.

Physician Movement Trends

Data obtained from the Nebraska Department of Health reveals that there is a gradual trend toward centralization of the physician population in the region with the highest concentration of physicians in Custer and Valley Counties.¹⁸ Since 1978 Garfield, Greeley and Howard Counties have each lost one physician allowing Greeley County to join Loup and Wheeler Counties which do not have a resident physician. Typically, new physicians to the region tend to select Custer and Valley Counties to establish their residency. This data illustrates a trend toward centralization of the health care system, but also points toward an inequitable distribution health care services delivery.

Physician Specialization

Data from the Nebraska Department of Health also indicates that all of the physicians currently in the CNGLA are not specialists in any particular medical field and are classified as general practitioners.¹⁹ With the region exhibiting a higher than normal infant mortality rate and heart disease and cancer contributing the most to the cause of death in the region, the region is at risk without physicians who specialize in these at risk areas. Residents with specialized medical problems must often travel to Grand Island or Kearney for their specialized medical needs.

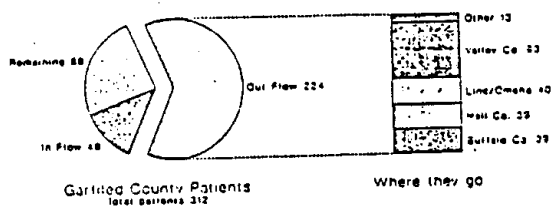
Hospital Patient Inflow/Outflow

Hospital Patient Inflow/outflow data measures the demand for hospital services within a county and outside of a county by the patients who utilize the hospital services. The quality of life in the region is partially dependent upon the quality and utilization of the hospital services within the region. Figures 3-16 and 3-17 show that more patients sought hospital services outside of the Burwell and Loup City community hospitals than remained in the two communities.²⁰ Ultimately, this may have resulted in two community hospitals closing. The Burwell Community Hospital closed in October, 1989 and Loup City Community Hospital closed in August of 1990.

The Custer County hospitals located in Sargent, Broken Bow and Calloway have more residents utilizing the hospital services there instead of leaving to go to primarily the hospital facilities in Kearney, see Figure 3-18. The Ord Community Hospital has more

Figure 3-16

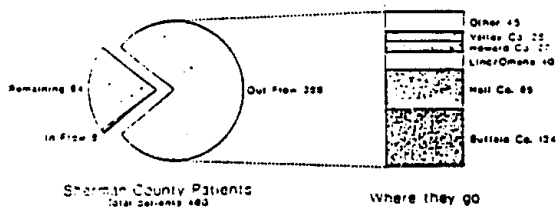
Hospital Patient Inflow/Outflow
(Burwell Community Hospital)
1989



Nebraska Department of Health 1990

Figure 3-17

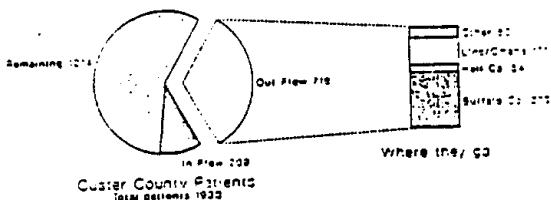
Hospital Patient Inflow/Outflow
(Loup City Community Hospital)
1989



Nebraska Department of Health 1990

Figure 3-18

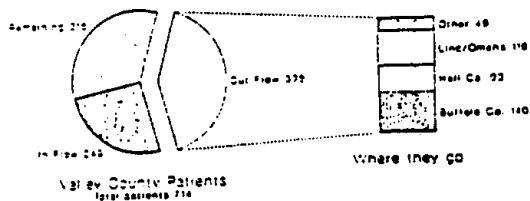
Hospital Patient Inflow/Outflow
(Sargent, Broken Bow and Calloway)
1989



Nebraska Department of Health 1990

Figure 3-19

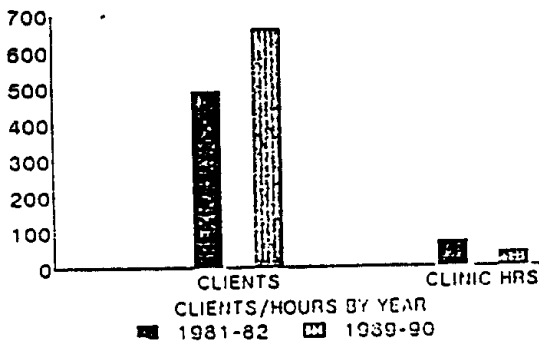
Hospital Patient Inflow/Outflow
(Ord Community Hospital)
1989



Nebraska Department of Health 1990

Figure 3-20

MENTAL HEALTH
DELIVERY OF SERVICES



SOURCE: Nebraska Department of Health, Mental Health Services, 1990

county residents leaving to seek hospital services in either Kearney, Lincoln, Omaha or Grand Island. But The Ord Community Hospital is strategically located in an area without hospitals in the surrounding counties, and therefore the Ord Community Hospital is the recipient of those residents seeking hospital services, see Figure 3-19. A similar pattern is revealed with the St. Paul Community Hospital having more residents seeking hospital services in Grand Island, Omaha, and Lincoln than it has remaining in the county for hospital services. The St. Paul Community Hospital remains viable due to the influx of patients from surrounding communities which do not have hospital services.

Services for Special Populations

The degree to which the CNGLA region attends to the needs of the special populations of people which include mentally retarded, mentally ill and handicapped individuals also contributes to the quality of life in the area. The delivery of human services in the region is affected primarily by cost and economy of scale. Cost is one factor which contributed to the decline in clinic hours available to serve the needs of mentally ill individuals in the region as is depicted in Figure 3-20. While the number of clients seeking mental health services increased from 492 clients in 1981-82 to 659 clients in 1989-1990, the number of clinic hours available declined from 72 hours in 1981-1982 to 39 hours in 1989-1990.²¹ Additionally, where there were mental health clinics in Broken Bow, Loup City, Burwell, Greeley and Ord in

1981-82, only the Broken Bow and Ord clinics are still open today. This reduces the equitable distribution of mental health clinics in the region and makes accessibility to the available clinics quite inconvenient for some residents of the region.

Furthermore, due to the economy of scale in the region, where a declining population must help support the various human services and treatment programs, the needs of special populations are often compromised or neglected.

Analysis of Education

School Attainment

In 1980, 57% of the individuals 25 years old and older in Nebraska had completed grades 9-12. The corresponding average for individuals in the CNGLA region was 36.17%.²² Greeley County had the highest educational attainment level with 56.37%. Sherman County had the lowest educational attainment level with 42.59%.

School Dropout Rates

The following dropout rates are based upon data from the 1981-1982 academic year. In 1981-1982, 4,852 individuals dropped out of school in Nebraska. This figure comprised 3.4% of all individuals who were enrolled in grades 7-12. The CNGLA region comprised .76% of these dropouts. Custer County had the highest dropout rate in the CNGLA region with .21% while Loup and Garfield Counties had the lowest with .02%. This indicates a commitment to quality basic education

in the region.²³

Analysis of Public Safety/Crime

Fire/Police/Emergency services

The fire/police/ambulance services are shared among the CNGLA region, with the larger facilities located in more populated communities. Due to the relatively longer distances between communities, the emergency response time is 20-60 minutes from some areas of the region.²⁴ The first responder program provides medically trained local residents who respond to emergencies. This enables residents to provide assistance before the Emergency Medical Team can arrive. Fire services includes local volunteers in the smaller communities and full time fire services in the larger communities. Police services (local and state) in the CNGLA region have shared services for many of the smaller communities where local services are not available. The high level of poverty in the region may place a higher burden on fewer residents for the provision of these services in various communities in the region.

Crime

Communities look toward the reduction of the incidence of crime to enhance the safety of its citizens and to increase the quality of life in their communities. As shown in Table 3-6, the total number of reported crimes committed in Nebraska for 1989 dropped by 2% compared to the

number of reported crimes committed in 1980 (66,680 - 64,470).²⁵ In the eight county CNGLA region, only one county, Custer, decreased the number of reported crimes from 1980 - 1989, the other counties experienced an increase despite losing population in each county (Figure 3-21).²⁶ Nebraska experienced an 8% increase in total reported crimes from 1988 - 1989 by 8%.

Summary of Social— Demographic Problems and Prospects

The analysis of the social-demographic subsystem is undertaken in part to assess the quality of life found in the CNGLA region. Characteristics associated with population, health care, the labor force, and education are utilized for this assessment.

Data associated with population indicate that the population of the region has declined since 1940. The breakdown into cohorts and projections of the population indicate that there may be an increasing demand for day care services, a decreasing demand for secondary education needs, an increase in the provision of quality employment opportunities, and an increase in services needed by older segments of the population.

The analysis of household characteristics and housing indicates that overall, population is decreasing while the number of households is increasing, an indication that younger residents may be migrating to other areas. Data

Table 3-6

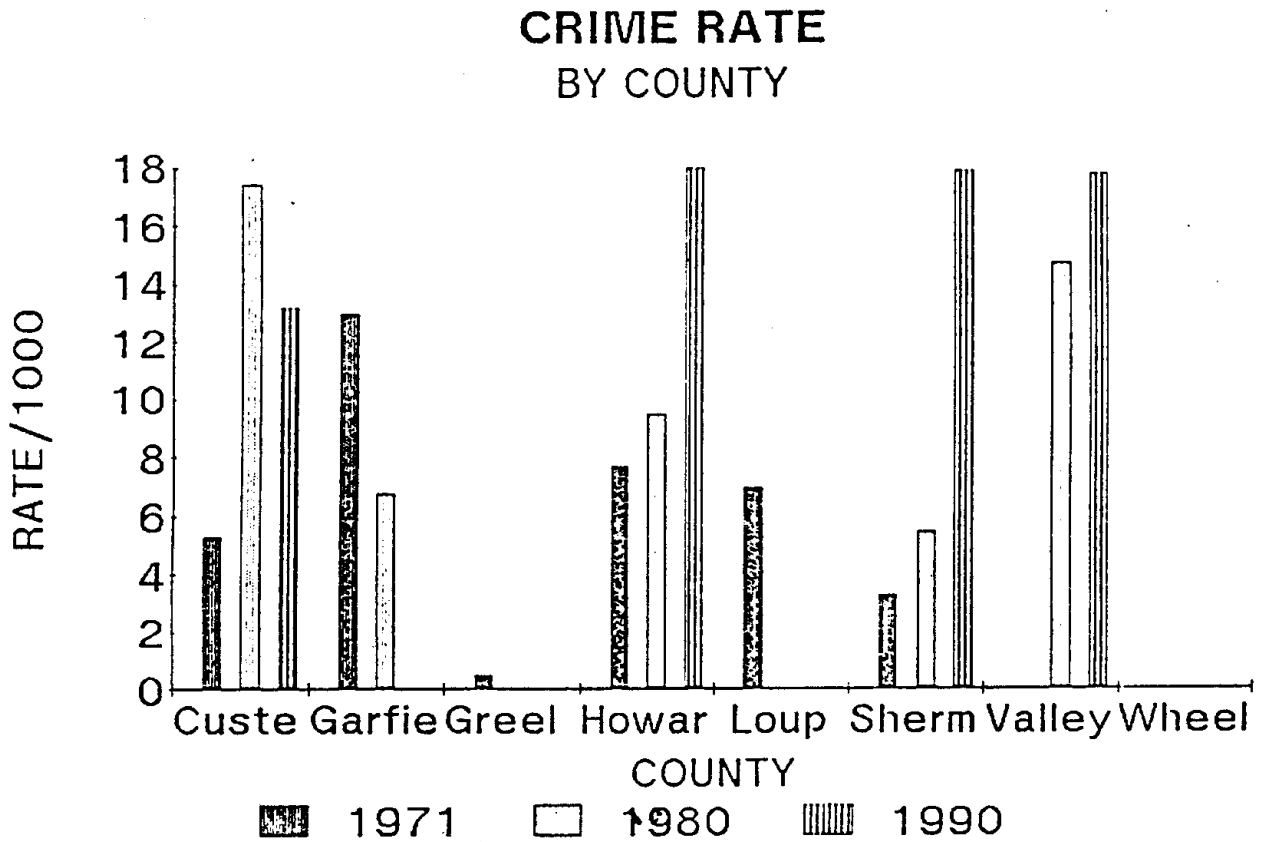
Total Crime Index And Crime Rate 1971			
County	Population	Crime Rate	Total Crime Index
Custer	10358	5.3	55
Garfield	1070	13	14
Greely	4000	0.5	2
Howard	4781	7.7	37
Loup	854	7	6
Sherman	3269	3.3	11
Valley	3344	0	16
Wheeler	1051	0	0
Region	28727	5	141
State	1487963	9.4	

Total Crime Index And Crime Rate 1980			
County	Population	Crime Rate	Total Crime Index
Custer	13827	17.4	241
Garfield	2359	6.8	16
Greely	3448	NR	NR
Howard	6719	9.5	64
Loup	853	NR	NR
Sherman	4219	5.5	23
Valley	5631	14.7	83
Wheeler	1056	0*	0
Region	38112	11.2	427
State	1563921	42.6	66680

Total Crime Index And Crime Rate 1989			
County	Population	Crime Rate	Total Crime Index
Custer	12870	13.2	170
Garfield	2112	0.0	0*
Greely	3218	0*	NR
Howard	6435	18	116
Loup	804	0.0	0
Sherman	3921	17.9	70
Valley	5631	17.8	100
Wheeler	1005	0.0	0*
Region	35996	13.9	456
State	1611000	40	64470

Source: Marilyn Keelan, Statistical analyst, Nebraska Crime Commission Reports - 1980 and 1989.

Figure 3-21



SOURCE: NEBRASKA CRIME COMMISSION

also indicates that the region has a very low percentage of female headed households. Housing data indicate that there is a need for increased housing supply in the region.

Vital statistics analysis indicates that the region is experiencing a declining birth rate, an indication that couples are having fewer children later in life and that younger people are leaving the region. The death rate in the region is higher than that of the state, indicating the need for improvement in the delivery of health care services. The primary causes of death in the region are heart disease and cancer.

The marriage rate in the region in the region is consistently lower than that of the state, while the divorce rate is consistently lower than that of the state. This indicates a stable family structure within the region for those individuals who decide to marry. The low marriage rate may be attributed once again to younger individuals leaving the region.

The index of urbanization shows that the regions has become increasingly urbanized. However the urbanized areas have lost population over time, indicating that more urban residents choose to leave the region. Net migration analysis indicates that each county in the region experienced a decline in population. This may be representative of many residents not being satisfied with the quality of life in the region.

The analysis of labor indicates that the region experienced decreasing unemployment rates from 1970 to 1990. This demonstrates that employment opportunities alone do not constitute a satisfactory quality of life.

The analysis of the delivery of health care services indicates that many residents must travel outside the region for specialized health care. Furthermore the physician to patient ratio demonstrates that the region is quite close to unacceptable levels of health care provision.

The analysis of education reveals that the region had drop out rates significantly lower than other areas of the state. There is also a significant percentage of individuals with a high level of educational attainment.

Crime rates in the region are significantly lower than those for other areas of the state.

Some of the characteristics examined in this section might indicate that the quality of life offered in the CNGLA region is not up to par in selected sectors. However most of the areas examined indicate that the region enjoys a higher quality of life than expected in most sectors and this was revealed through interviews with residents in various communities in the region.

Endnotes

1. Nebraska Department of Economic Development, 1988-1989 Nebraska Statitistical Handbook, 1989.
2. Ibid.
3. Ibid.
4. U.S. Bureau of Census, County and City Data Book, 1988.
5. Interviews with residents of various communities, September 9-10, 1990.
6. Nebraska State Data Center, Center for Public Affairs Research, Nebraska Population by Place. 1940-1988.
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23. U.S. Bureau of Census.
24. Interview with staff of Nebraska State Department of Education, October 2, 1990.
25. Pat Meeks, Interview during field visit to CNGLA region September 9-10, 1990.
26. Marilyn Keelan, Statistical Analyst, Nebraska Crime Commission, Uniform Crime Reports - 1980, 1989.

Chapter 4

Assessment and Analysis of the Economic Subsystem

The economic subsystem describes the economic activity within the delineated region in terms of:

1. economic base
2. retail pull factors
3. retail leakage
4. economic threshold
5. tourism economics

Each of these areas is described below.

ECONOMIC BASE ANALYSIS

L Introduction

Economic base analysis concentrates on the employment characteristics of the CNGLA delineated region using Standard Industrial Classifications (SIC) over a period of time. The source of the data used in this analysis is the Nebraska Department of Labor, Division of Labor, Research and Statistics. In this study,

the analysis was done for the years 1970, 1980, and through July 1990.

SICs are grouped according to the major employment sectors of the economy. These sectors are: 1) Agriculture (AGR), 2) Manufacturing (MAN), 3) Construction (CON), 4) Transportation (TRN), 5) Trade (both retail and wholesale) (TRD), 6) Finance (FIN), 7) Services (SER), and 8) Government (GOV). By comparing the number of persons employed in a particular SIC, in a county with the corresponding number in a region, the strengths and weakness of the county or region may be determined. Similar comparisons may be made between region and state.

If the percentage employed in a particular SIC area in the region exceeds the percentage employed in that same SIC area in the state, then that SIC area is considered an export base of the region. In other words, the percentage in excess employment generates a surplus of those goods or services in excess of local needs and they may be exported to outside the region in exchange for goods in short supply.

If the percentage employed in a particular SIC area in the region is less than the percentage employed in that same SIC area in the state, then production in that SIC is available only for local consumption and no surplus for export is generated.

II. Analysis

A. CNGLA Versus State

The first part of the economic base analysis compares the percentage employed in each SIC classification for the delineated region, to the percentage employed in each SIC classification in the state as a whole. This indicates the strengths and weakness of the region in relationship to the state averages.

Table 4-1 describes the relationship of employment between the CNGLA delineated

region and the state through July, 1990.

Analysis of this data suggests that the CNGLA delineated region is predominantly agriculturally based. The export base of the CNGLA delineated region for 1990 (through July) is agriculture and government. All other SIC areas produce goods and services for local consumption which are not available for export outside the region. A historical look at this region, specifically the years 1970, 1980, and through July 1990, is described in greater detail in Table C-1 of Appendix C.

B. County Versus Delineated region

The second part of the analysis consisted of comparing the percentage employed in each SIC classification for each county within the CNGLA delineated region, to the percentage employed in corresponding SIC classifications in the

TABLE 4-1

CNGLA VERSUS STATE THROUGH JULY 1990

SIC	NUMBER EMPLOYED CNGLA	NUMBER EMPLOYED STATE	% EMPLOYED CNGLA	% EMPLOYED STATE	DIFFERENCE
AGR	7071	101034	45.92	12.31	33.62
MAN	584	95906	3.79	11.68	-7.89
CON	275	26121	1.79	3.18	-1.40
TRN	232	46602	1.51	5.68	-4.17
TRD	2408	185128	15.64	22.55	-6.91
FIN	359	48446	2.33	5.90	-3.57
SER	1453	172179	9.44	20.97	-11.53
GOV	3015	145634	19.58	17.74	1.84
TOTAL	15397	821050			

CNGLA delineated region as a whole. Again, this indicates the strengths and weakness of each county in relationship to the CNGLA delineated region averages.

1. Custer County

Table 4-2 shows the relationship between Custer County and the CNGLA delineated region through July, 1990.

The export base of Custer county is composed of manufacturing, construction, transportation, trade, and services. The non-export sectors are government, finance, and agriculture. A historical evaluation of economic base in Custer county the years 1970,1980 and through July 1990, is described in Table C-2 in Appendix C.

2. Garfield County

Table 3 shows the relationship between Garfield County and the CNGLA delineated region through July, 1990.

The export base of Garfield county is composed of manufacturing, construction, trade, and services. The non-export sectors are government, transportation, finance, and agriculture. A historical evaluation of economic base in Garfield county the years 1970,1980 and through July 1990, is described in Table C-3 in Appendix C.

3. Greeley County

Table 4-4 shows the relationship between Greeley County and the CNGLA delineated region through July, 1990.

The export base of Greeley county is composed of construction, government, finance, and services. The non-export

sectors are transportation, manufacturing, trade, and agriculture. A historical evaluation of economic base in Greeley county the years 1970,1980 and through July 1990, is described in Table C-4 in Appendix C.

4. Howard County

Table 4-5 shows the relationship between Howard County and the CNGLA delineated region through July, 1990.

The export base of Howard county is composed of agriculture, and construction. The non-export sectors are transportation, services, manufacturing, government, trade, and finance. A historical evaluation of economic base in Howard county the years 1970,1980 and through July 1990, is described in Table C-5 in Appendix C.

5. Loup County

Table 4-6 shows the relationship between Loup County and the CNGLA delineated region through July, 1990.

The export base of Loup county is composed of agriculture. All other SIC areas could not be determined from the information available due to disclosure conflicts. A historical evaluation of economic base in Loup county the years 1970, 1980 and through July 1990, is described in Table C-6 in Appendix C.

6. Sherman County

Table 4-7 shows the relationship between Sherman County and the CNGLA delineated region through July, 1990. The export base of Sherman county is composed of government, and finance. The non-export sectors are trade, agriculture, and construction. A historical evaluation of economic base in Sherman

TABLE 4-2
CUSTER COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN CUSTER COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN CUSTER COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	2314	7071	40.38	45.92	-5.54
MAN	455	584	7.94	3.79	4.15
CON	127	275	2.22	1.79	0.43
TRN	118	232	2.06	1.51	0.55
TRD	927	2408	16.18	15.64	0.54
FIN	127	359	2.22	2.33	-0.12
SER	711	1453	12.41	9.44	2.97
GOV	951	3015	16.60	19.58	-2.98
TOTAL	5730	15397			

TABLE 4-3
GARFIELD COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN GARFIELD COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN GARFIELD COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	349	7071	34.73	45.92	-11.20
MAN	62	584	6.17	3.79	2.38
CON	27	275	2.69	1.79	0.90
TRN	13	232	1.29	1.51	-0.21
TRD	224	2408	22.29	15.64	6.65
FIN	23	359	2.29	2.33	-0.04
SER	162	1453	16.12	9.44	6.68
GOV	145	3015	14.43	19.58	-5.15
TOTAL	1005	15397			

TABLE 4-4
GREELEY COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN GREELEY COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN GREELEY COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	548	7071	42.48	45.92	-3.44
MAN	14	584	1.09	3.79	-2.71
CON	24	275	1.86	1.79	0.07
TRN	8	232	0.62	1.51	-0.89
TRD	200	2408	15.50	15.64	-0.14
FIN	36	359	2.79	2.33	0.46
SER	165	1453	12.79	9.44	3.35
GOV	295	3015	22.87	19.58	3.29
TOTAL	1290	15397			

TABLE 4-5

HOWARD COUNTY THROUGH JULY 1990						
SIC	NUMBER EMPLOYED IN HOWARD COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN HOWARD COUNTY	% EMPLOYED CNGLA	DIFFERENCE	
AGR	1402	7071	57.25	45.92	11.32	
MAN	7	584	0.29	3.79	-3.51	
CON	44	275	1.80	1.79	0.01	
TRN	20	232	0.82	1.51	-0.69	
TRD	306	2408	12.49	15.64	-3.14	
FIN	44	359	1.80	2.33	-0.53	
SER	205	1453	8.37	9.44	-1.07	
GOV	421	3015	17.19	19.58	-2.39	
TOTAL	2449	15397				

TABLE 4-6

LOUP COUNTY THROUGH JULY 1990						
SIC	NUMBER EMPLOYED IN LOUP COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN LOUP COUNTY	% EMPLOYED CNGLA	DIFFERENCE	
AGR	342	7071	85.50	45.92	39.58	
MAN	NA	584	NA	NA	NA	
CON	NA	275	NA	NA	NA	
TRN	NA	232	NA	NA	NA	
TRD	NA	2408	NA	NA	NA	
FIN	NA	359	NA	NA	NA	
SER	NA	1453	NA	NA	NA	
GOV	28	3015	7.00	19.58	-12.58	
TOTAL	400	15397				

TABLE 4-7

SHERMAN COUNTY THROUGH JULY 1990						
SIC	NUMBER EMPLOYED IN SHERMAN COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN SHERMAN COUNTY	% EMPLOYED CNGLA	DIFFERENCE	
AGR	679	7071	44.85	45.92	-1.08	
MAN	NA	584	NA	NA	NA	
CON	14	275	0.92	1.79	-0.86	
TRN	NA	232	NA	NA	NA	
TRD	181	2408	11.96	15.64	-3.68	
FIN	45	359	2.97	2.33	0.64	
SER	NA	1453	NA	NA	NA	
GOV	386	3015	25.50	19.58	5.91	
TOTAL	1514	15397				

county the years 1970, 1980 and through July 1990, is described in Table C-7 in Appendix C.

7. Valley County

Table 4-8 shows the relationship between Valley County and the CNGLA delineated region through July, 1990.

The export base of Valley county is composed of transportation, trade, finance, and government. The non-export sectors are services, manufacturing, agriculture, and construction. A historical evaluation of economic base in Valley county the years 1970,1980 and through July 1990, is described in Table C-8 in Appendix C.

8. Wheeler County

Table 4-9 shows the relationship between Wheeler County and the CNGLA delineated region through July, 1990.

The export base of Wheeler county is

composed of agriculture. All other SIC areas were not able to be identified due to disclosure conflicts. A historical evaluation of economic base in Wheeler county the years 1970,1980 and through July 1990, is described in Table C-9 in Appendix C.

III. Projections

Employment projections for the delineated region were calculated using the Constant-Share method as described in Community Analysis and Planning Techniques by Richard E. Klosterman. This technique assumes that the delineated region may grow in each SIC areas in proportion to the growth experienced by the state. Growth projections for the state were obtained using OBERS statistics from the United States government. Table 4-10 shows the results of this analysis. As this table shows, the service industry and the trade industry are projected to account for the majority of the employment growth.

TABLE 4-8
VALLEY COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN VALLEY COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN VALLEY COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	1007	7071	37.31	45.92	-8.61
MAN	46	584	1.70	3.79	-2.09
CON	39	275	1.44	1.79	-0.34
TRN	73	232	2.70	1.51	1.20
TRD	570	2408	21.12	15.64	5.48
FIN	84	359	3.11	2.33	0.78
SER	210	1453	7.78	9.44	-1.66
GOV	670	3015	24.82	19.58	5.24
TOTAL	2699	15397			

TABLE 4-9
WHEELER COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN WHEELER COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN WHEELER COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	430	7071	70.61	45.92	24.68
MAN	NA	584	NA	NA	NA
CON	NA	275	NA	NA	NA
TRN	NA	232	NA	NA	NA
TRD	NA	2408	NA	NA	NA
FIN	NA	359	NA	NA	NA
SER	NA	1453	NA	NA	NA
GOV	119	3015	19.54	19.58	-0.04
TOTAL	609	15397			

TABLE 4-10

EMPLOYMENT PROJECTIONS TO YEAR 2005

SIC	NUMBER EMPLOYED CNGLA 1990	PROJECTED EMPLOYMENT STATE 1990	PROJECTED EMPLOYMENT STATE 2005	% EMPLOYED DIFFERENCE 1990-2005	PROJECTED EMPLOYMENT CNGLA 2005
AGR	7071	95700	94900	0.00	7057
MAN	584	100800	111500	0.01	767
CON	275	44900	53800	0.01	428
TRN	232	54900	65700	0.01	417
TRD	2408	202900	238600	0.04	3020
FIN	359	57200	70800	0.02	592
SER	1453	196900	252800	0.06	2411
GOV	3015	144700	150400	0.01	3113
TOTAL	15397	898000	1038500		17806

IV. Conclusions

The economic base analysis indicates that the primary export base of the region is agriculture. This dependence on agriculture makes the Delineated region very vulnerable to economic fluctuations of that market. The percentage employed in all other SIC classifications, except government employment, were below the state average. Government employment is only slightly higher than the state average.

Economic diversification, which would provide more balance in each SIC sector, would also stabilize the economy of the Delineated region if the agricultural economy should falter.

In the future, the areas of services and trade appear to have the most potential for economic growth within the state and the delineated region. A leveling off of the agricultural employment is also predicted.

RETAIL ACTIVITY

I. Introduction

The retail activity of the region may be measured by examining the volume of retail in the region, and the share of sales that remain in the community. Pull factor and retail leakage are used as two indicators of retail activity within the delineated region.

The pull factor is used to trace patterns of retail trade activity within the Delineated region, and to indicate how communities within the region compare to the average of

other communities of similar size within the state.

Retail leakage is an economic indicator that tests how much potential retail sales may be leaving (leaking out) a particular community and going to another community within the same trade area for a particular good or service.

Each of these indicators are explained in further detail in the following sections.

II. Retail Pull Factor Analysis

Nine cities within the CNGLA delineated region, and each of the eight counties composing the region, were studied in relation to the pull factor. The source for the pull factor information used in this report is the Department of Agricultural Economics at the University of Nebraska-Lincoln.

The cities included in this analysis are: Bartlett, Broken Bow, Burwell, Loup City, Ord, St. Paul, Sargent, Spalding, and Taylor. The nine cities are divided according to population to obtain a comparative analysis by community size. The retail pull factor is defined as the ratio of city or county per capita retail sales to the state per capita retail sales. The formula for pull factor is:

Retail Pull factor =

$$\frac{\text{per capita retail sales town or county}}{\text{per capita retail sales state}}$$

Garfield County is used as an example to illustrate the retail pull factor concept and its interpretation.

$$\text{Garfield County, 1989 } \frac{4855}{5986} = .811$$

TABLE 11

CHANGE IN PULL FACTOR BY COUNTY: 1980 TO 1989

COUNTY	CUS	GAR	GRE	HOW	LOU	SHE	VAL	WHE	CNGLA
1980 PULL FACTOR	.902	.931	.603	.722	.604	.717	.923	.683	.767
1989 PULL FACTOR	.702	.811	.523	.482	.104	.367	.793	.193	.497
% CHANGE (X 100)	-21	-12	-8	-24	-50	-35	-13	-49	-27

TABLE 4-12

ANALYSIS OF TOWNS WITH POPULATIONS BELOW 500

TOWN	1970	1975	1980	PERCENT CHANGE			1970-80	1980-89	1970-89
				1985	1987	1988			
BARTLETT	NA	.858	.907	.718	.742	.683	+6	-25	-20
TAYLOR	NA	.768	.648	.433	.421	.414	-16	-36	-46
STATE AVE.	1.079	.997	.907	.632	.613	.598	-16	-34	-45

TABLE 4-13

ANALYSIS OF TOWNS WITH POPULATIONS BETWEEN 500 AND 999

TOWN	1970	1975	1980	PERCENT CHANGE			1970-80	1980-89	1970-89
				1985	1987	1988			
SARGENT	1.416	1.268	1.158	.665	.622	.594	-18	-49	-58
SPALDING	1.363	1.058	1.346	1.091	1.261	1.594	-1	+18	+17
STATE AVE.	1.015	1.029	.941	.696	.748	.741	-7	-21	-27

The pull factor for Garfield County is below 1.0 (100%), this means that the county is losing retail trade to outside areas. Specifically, Garfield County is securing only .811 (81%) of its full trade potential. When the pull factor is above 1.0 then the community (or county) is attracting consumers from outside the local area.

A. Analysis by County and Region

Table 4-11 describes the change in pull factors for each county within the delineated region, and also for the region as a whole. Overall, the pull factor for the delineated region dropped by 27% from 1980-1989. While a 27% decline in pull factor is significant, it may be observed that the delineated region is following the general downward trend experienced throughout the state (Figures 1, 2 in Appendix D). Only Lancaster, Buffalo, Douglas, and Dakota counties are not experiencing leakage in the state.

The average pull factor for the eight counties in 1989 is .497. This indicates that only about 50% of potential retail trade is being realized in counties in the CNGLA during 1988.

Loup, Wheeler, and Sherman counties experienced the most drastic decreases in retail pull factors from 1980-1989, 50% and 49%, and 35% respectively. Two of these counties derived a large amount of total labor and proprietary income from farming from 1980-84; Loup County - 68%, Wheeler County - 48% (Figure 3 in Appendix D).

The depressed agricultural economy of the first half of 1980 probably contributed to the decreased pull factors. One way that a depressed agricultural economy may

decrease retail activity is through loss of support businesses, such as implement dealerships. • These businesses act as anchors in rural communities to draw consumers from outside the local area.

B. Analysis by City or Town

Nine cities from the eight county region were studied in relation to the pull factor. The nine cities were grouped according to population to obtain a comparative analysis by community size. Figure 4 (see Appendix D) illustrates the pull factor activity of the nine cities compared to the state average pull factors for same size classifications.

The state average pull factor for towns with populations of less than 500 has dropped significantly from 1970-1988, as can be seen from in Table 4-12. Bartiett appears to follow the state trend while Taylor has had pull factors significantly lower than the state average. Since 1978 small communities appear to be relying more on larger towns for retail goods.

The state average for towns with populations between 500 and 999 has decreased from 1970-1988. Both Sargent and Spalding had retail pull factors well above the state average in 1970, but while Sargent experienced a drastic decrease in 1985, Spalding*s retail activity increased in 1985.

Table 4-13 describes the pull factor analysis for towns with populations between 500

Cities with populations between 1000 and 2499 experienced the most drastic reduction on the average for the state. Burwell, Loup City and St. Paul had higher pull factors than the state aver-

age. However, the retail activity in these cities followed the same downward trend as the state average until 1987, when they all experienced increased activity. Burwell and Loup City continued the upward movement in 1988, while St. Paul's pull factor drastically decreased. Table 4-14 describes the pull factor analysis for towns with populations between 999 and 2499.

The state average pull factor for cities with populations between 2500 and 4999 have decreased since 1970, although it has remained over 1.2. Broken Bow has experienced the strongest retail activity within the cities studied, and although

it's pull factor fell in the early 1980's, it appears to be recovering some of the lost retail activity. Ord also experienced a downward trend in the retail pull factor from 1970-1987, but in 1988 there was a significant rise in the retail activity.

Table 4-15 describes the pull factor analysis for towns with populations between 2500 and 4999.

III. Retail Pull Factor Conclusions

Generally the pull factors for counties and cities within the delineated region experienced a decline between 1970-1988. This trend continues throughout the

TABLE 4-14
ANALYSIS OF TOWNS WITH POPULATIONS BETWEEN 999 AND 2499

TOWN	1970	1975	1980	PERCENT CHANGE			1970-80	1980-89	1970-89
				1985	1987	1988			
BURWELL	1.453	1.579	1.583	1.221	1.352	1.460	+9	-3	+1
LOUP CITY	1.629	1.407	1.438	1.001	1.030	1.065	-12	-26	-35
ST. PAUL	1.370	1.410	1.533	1.165	1.231	.700	+12	-34	-49
STATE AVE.	1.327	1.423	1.364	1.052	1.065	1.066	+3	-22	-20

TABLE 4-15
ANALYSIS OF TOWNS WITH POPULATIONS BETWEEN 999 AND 2499

TOWN	1970	1975	1980	PERCENT CHANGE			1970-80	1980-89	1970-89
				1985	1987	1988			
BROKEN B.	2.173	2.175	2.105	1.674	1.618	1.693	-3	-20	-22
ORD	1.948	1.902	1.669	1.418	1.382	2.064	-14	+24	+6
STATE AVE.	1.589	1.623	1.623	1.308	1.314	1.324	+2	-18	+32

state, with the exception of major retail centers. There appears to be a substantial migration of retail sales activity out of rural and agricultural dependant areas into the larger population centers. The communities within the delineated region tend to have pull factors higher than the state average for communities of the same size. This could be attributed to the fact that the communities studied have more retail businesses than would be predicted for population size according to threshold estimates (refer to following section on threshold analysis). Generally, the communities in the delineated region with populations over 500 seem to be starting an economic revitalization phase, while pull factors suggest that the communities in the area have stronger retail activity than state averages.

IV. Retail Leakage Analysis

For the purpose of this analysis the classification of the CNGLA settlements developed in chapter 1 is adopted. The lowest order communities were then compared to the next higher order of communities to determine if community size was a factor in the amount of lost retail trade to other communities in a trade area. Retail leakage data was obtained from the Nebraska Department of Economic Development as prepared by the Nebraska Department of Commerce. Population estimates were obtained from the U.S. Bureau of Census, released November 1989. Per capita income estimates by county were obtained for 1988 from the U.S. Department of Commerce, Bureau of Economic Analysis.

Because of inconsistencies in reporting Net Taxable Sales to the Nebraska Department of Commerce, data was only available for the years of 1984,1986, and 1988. These years are examined to obtain insights as to the recent trends of the region. The formula for retail leakage is:

Retail Leakage =

$$\frac{(\text{PCS of City A} / \text{PCI of City A})}{(\text{PCS of City B} / \text{PCI of City B})}$$

PCS = Per Capita Sales

PCI = Per Capita Income

Broken Bow is selected as the example of Class A city to explain and interpret the above concept. The year 1988 is selected as the sample year for the illustration.

The retail leakage of Broken Bow to Grand Island =

$$\frac{\text{PCS Broken Bow} / \text{PCI Broken Bow}}{\text{PCS Grand Island} / \text{PCI Grand Island}}$$

$$\frac{\$9777.83 / \$14.313}{\$9709.30 / \$14,074} = .99 \text{ (1\%)}$$

The retail leakage of Broken Bow to Keamey =

$$\frac{\$9777.83 / \$14.313}{\$9489.93 / \$13,128} = .95 \text{ (5\%)}$$

The retail leakage of Broken Bow to Lexington =

$$\frac{\$9.777.83 / \$14.313}{\$10,105.20 / \$13,290} = .90 \text{ (10\%)}$$

The average retail leakage of Broken Bow to the three class 3 settlements is equal to .95 (5%)

This ratio indicates Broken Bow is losing 5% (1-.95) of its potential retail sales to nearby trade areas. In the Retail Leakage analysis if this percentage is negative, a community is bringing in retail sales. Example: (If the % had been a negative number such as a (-5%) instead of (+5%) then there would be an indication a 5% gain in potential retail trade). Tables 4-16 and 4-17 summarize the results of the retail leakage analysis.

IV. Retail Leakage Conclusions

The findings of this study imply several interesting facts about recent economic trends. According to this analysis, the smaller communities are losing potential retail sales to larger communities. The greatest amount of potential retail trade loss is occurring between the smallest Class 1 Cities and the intermediate Class 2 Cities, with Farwell and Spalding being the exceptions. Farwell showed an average accumulative increase of about 64% in the potential retail sales since 1984, but lost 13.7% in 1988, which is reflected in a loss of per capita income for the same year. Spalding showed a yearly increase in potential retail sales with an average accumulative increase of a little more than 21% for the same time period. The Class 2 Cities appear to be holding their own against the Class 3 Cities, with all but St. Paul showing average cumulative increases since 1984. The amount of

increase in potential retail sales has been marginal for the remainder of the Class 2 Cities, with smaller increases occurring between each of the years examined. This may be indicating that the larger Class 3 Cities are beginning to draw potential retail sales from the Class 2 Cities.

The findings of this analysis may be attributed to several factors such as: a steadily declining agricultural economy, customer preferences, the transportation network that tends to converge on higher order settlements, the lack of population base to support various retail activities, and because of the inconvenience of scattered trade areas that support a particular product or service, making the larger Class 3 shopping areas more attractive. A complete copy of the economic leakage analysis is included in Appendix D.

ECONOMIC THRESHOLD ANALYSIS

I. Introduction

The threshold population for a given good or service is defined as the minimum number of people required to support that establishment. It is a useful tool for economic analysis because it may be used along with other indicators to predict the potential viability of a new business. Information on threshold estimation was provided by the Research Division of the Nebraska Department of Economic Development.

Two sets of data are required to calculate threshold estimates. The first is population, which was derived from the most recent census estimate completed in July 1, 1988. The second

TABLE 4-16
CLASS 2 CITIES VS. CLASS 3 CITIES

(-) PERCENTAGE = INCREASE IN POTENTIAL RETAIL SALES
(+) PERCENTAGE = LEAKAGE IN POTENTIAL RETAIL SALES

COMMUNITY	1988	1986	1984	AVE FROM '84 - '86
BROKEN BOW	5.5%	-6.1%	-19.8%	-6.8%
BURNWELL	-1.4%	-35.3%	-43.9%	-26.8%
ORD	12.9%	-6%	-30.6%	-6.0%
ST. PAUL	14.7%	8.0%	-2.0%	6.9%

TABLE 4-17
CLASS 1 CITIES VS. CLASS 2 CITIES

COMMUNITY	1988	1986	1984	AVE FROM '84 - '86
ANSELMO	80.3%	70.1%	73.9%	74.8%
ANSLEY	80.0%	70.4%	71.2%	73.9%
ARCADIA	35.3%	15.3%	36.7%	29.1%
ARNOLD	34.4%	39.0%	41.1%	38.1%
ASHTON	64.4%	32.0%	32.9%	43.1%
BARTLETT	75.3%	30.0%	38.3%	35.0%
CALLAWAY	68.4%	53.6%	53.8%	58.6%
DANNEBROG	64.5%	50.7%	52.4%	55.9%
ELBA	45.5%	44.5%	43.5%	44.5%
ERICSON	84.4%	54.3%	19.3%	46.3%
FARWELL	13.7%	-131.2%	-74.3%	-63.9%
GREELEY	76.8%	61.2%	63.3%	46.7%
LITCHFIELD	78.3%	69.3%	71.5%	73.0%
LOUP CITY	18.0%	8.2%	8.9%	11.7%
LOUP COUNTY	77.0%	92.0%	91.2%	86.7%
MASON CITY	79.5%	69.6%	73.9%	74.4%
MERNA	30.3%	36.8%	22.9%	30.0%
OCONTO	65.9%	47.1%	51.7%	54.9%
SARGENT	62.8%	41.8%	45.5%	50.0%
SCOTIA	62.6%	24.5%	29.3%	38.8%
SPALDING	-7.4%	-14.7%	-5.5%	-21.2%
WOLBACH	40.3%	18.2%	32.1%	21.1%

is the current number of establishments which was derived from the yellow pages of the local telephone directories.

The threshold estimates for Nebraska are denned by regions, with the Delineated region contained within the Central Nebraska Region.

II. Analysis

The largest communities in each of the eight counties in the delineated region were chosen for threshold analysis. These communities are Broken Bow, Ord, St. Paul, Burwell, Loup City, Spalding, Bartlett, and Taylor. The four representative types of establishments included in the analysis are: grocery (Class 1 good); farm implement (Class 2 good); banking (Class 2 service); and health clinic (Class 3 service). For a detailed explanation of the classification of cities, see the Physical Subsystem (chapter 3).

Only four types of establishments are used for purposes of manageability of the study. The four categories were selected

for analysis because they represent two typical goods and two typical services in their respective classes.

Table 4-18 describes the threshold analysis for selected communities within the delineated region.

St. Paul is used as an example to illustrate the concept. St. Paul has: a) two farm implements which is also the number predicted by threshold estimate; b) two grocery stores while threshold estimate predicts its population could only support one; c) two banks, while the threshold estimate predicts that only one bank could be supported; and d) one health clinic which corresponds with the one clinic predicted by threshold estimate.

Even though the one health clinic in this community was predicted by threshold estimate, its presence is still surprising due to the fact that St. Paul is a Class 2 city, while the health clinic it supports is a service characteristic of a larger, Class 3 city.

Table 4-18 indicates that overall, communities within the delineated region

Table 4-18

ACTUAL	CNGLA NUMBER	THRESHOLD ESTABLISHMENTS	ESTIMATES VS. THRESHOLD ESTIMATE			
			Implement	Grocery	Banking	Health Clinic
Broken Bow		2/4	2/3	2/2	3/2	
Ord		3/3	4/2	2/1	1/1	
St. Paul		2/2	2/1	2/1	1/1	
Burwell		2/1	3/1	1/0	1/0	
Loup City		1/1	3/1	1/0	1/0	
Spalding		1/0	2/0	1/0	0/0	
Bartlett		0/0	0/0	0/0	0/0	
Taylor		0/0	0/0	1/0	0/0	

TABLE 4-19

AVERAGE	POPULATION	SUPPORTING	ONE TO FOUR	ESTABLISHMENTS
POPULATION	POPULATION	PREDICTED	BY THRESHOLD	ANALYSIS
1	Farm Implement 870 877	Grocery 180 1282	Banking 660 1538	Health Clinic 1728 1887
2	2307 1754	2093 2564	2790 3077	---- ----
3	2650 2632	1190 3846	---- ----	3840 5660
4	---- ----	2650 5128	---- ----	---- ----

are supporting a greater number of establishments than threshold estimates would predict. Class 1 cities often support a Class 2 good or service (farm implement, banking), while Class 2 cities often support a Class 3 service (health clinic).

Next, the average population of the communities supporting a given number of establishment types was compared to the threshold estimate population. Table 4-19 describes the predicted populations that are necessary to support 1 to 4 establishments.

As an example communities supporting one bank had an average population of 765, while the threshold estimate for the number of people needed to support one bank is 1,538 people. This represents a difference of 773 people. The communities with two banks had an average population of 2,790 people,

which is about 287 persons less than the threshold population needed to support two banks.

III. Conclusions

The threshold analysis of the delineated region indicates that the selected communities are often supporting a greater number of establishments than what threshold estimate would predict. They are also have smaller populations than what is expected in the threshold estimate. There are a number of factors which enable these trends to occur. These included: a) the willingness to drive longer distances to obtain goods and services; b) community support for local businesses and; c) family owned businesses which do not have to shoulder the financial risks and start-up

costs associated with opening a new business.

Problems may arise if the population in the region continues to decline because as the population declines, so does the demand for goods and services.

ECONOMIC IMPACTS OF TOURISM

I. Introduction

Tourism is a unique economic factor that has a bearing on the development problems and prospects for the region. Hence this subject is addressed in its own right as a separate subject of economic analysis.

Information for the economic impact of tourism in the delineated region is derived from the Research Division of the Nebraska Department of Economic Development. Two types of indicators, lodging tax and the tourism multiplier, are used to determine the economic impact of tourism in the delineated region.

II. Analysis

The first indicator to be discussed is the lodging tax. The revenue generated from the lodging tax is used primarily to support advertising and other activities necessary for tourism promotion. Currently only two of the eight counties in the delineated region have implemented a lodging tax. Custer County began collecting the tax in 1982, and obtained initial revenue of \$5,675. By 1989, the amount of revenue collected from lodging

tax had grown to \$8,166. Garfield County began collecting a tax on lodging in 1988, and its revenue for 1989 was \$3,645. Without having a lodging tax, a county may not have adequate funding for advertising and other activities.

A second economic indicator for tourism is the tourism "multiplier". For the State of Nebraska the tourism multiplier is 2.7. This figure means that for every dollar spent on tourism in Nebraska, an additional \$1.70 of associated revenue is derived in the state.

For a rural area such as the delineated region, the tourism multiplier is much lower, 1.0-1.7. Therefore, the delineated region cannot expect to generate revenue associated with tourism to the same degree as large cities or the state as a whole.

III. Conclusions

It is evident that for counties without a tax on lodging, revenue may not be available for tourism promotion in that area. The delineated region is a rural area, so it cannot expect to experience great economic impact from tourism because of the low tourism multiplier associated with a rural region.

SUMMARY OF ECONOMIC PROBLEMS AND PROSPECTS

The assessment and analysis of the economic subsystem examined the areas of economic base, retail pull factors, economic threshold, and the economic aspects of tourism. Analysis of these five areas helps to describe the economic

activity within the delineated region of the CNGLA.

The economic base analysis indicates that the delineated region is predominantly based on agriculture. The export base of the region lies in agriculture and government. All other elements examined show that production is for local consumption. The dependence on agriculture makes the region vulnerable to economic fluctuations in the state and national agriculture markets. This suggests that economic diversification is needed to develop a more balanced economy within the region.

The pull factor analysis illustrates that most of the communities in the region are losing consumers to outside areas;

there appears to be a substantial migration of retail sales activity out of rural agricultural areas into larger population centers. This is parallel to trends in the state. The dependence on the agricultural sector of the economy may explain this pattern.

The retail leakage analysis demonstrates that smaller communities within the region are losing potential retail sales to larger communities in all classes of the hierarchy of settlements. This finding helps to validate the notion discussed in chapter 3 that there is a high degree of interdependence among communities within the region.

The threshold analysis indicates that most communities within the region are supporting a greater number of establishments than what threshold estimates may predict. Communities also have smaller populations than what is expected in the threshold estimate. This may be attributed to a willingness of residents to drive longer distance to obtain

goods and services.

The analysis of the economic aspects of tourism illustrate that counties without a lodging tax may find it difficult to generate revenue for the development of the tourism economy. Furthermore, the rural characteristic of the region mean that the tourism multiplier is significantly lower than the multiplier for the state.

Chapter 5

Assessment and Analysis of The Political Subsystem

The political sub-system, is made up of administrative dimensions eight components. They are:

1. Education
2. Public Health
3. Human Services/Housing
4. Public Works
5. Transportation
6. Tourism: a. Recreational
b. Cultural
7. Economic Development
8. Environmental Protection

The foci of these components for this analysis are authority, responsibility, and jurisdiction within the CNGLA'S regional boundaries. Roles may be formal or informal. Formal roles refer to the statutory responsibility for a mission within a particular jurisdictional area. Authority may be direct or indirect. Informal roles refer to the influence that a group(s) or individual(s) with formal roles, may exert upon decision making.

Administration of Education

One of the many functions of a region is the provision of education for its population. In fact, "more public money is spent for education than for any other single state and local government..."¹

This regional mission may be divided into the provision of primary, secondary and post secondary education.

Primary and Secondary Education

State and local agencies play a formal, direct role in primary and secondary education. The Federal and State Departments of Education provide financial aid to local school districts and set general policy. Educational Service Units #10 and #8 which are multi-county organizations, provide supplemental curriculum assistance to local districts in the CNGLA region. Local agencies such as school boards and districts provide the facilities and curriculum standards for primary and secondary education.

An examination of school districts in the eight county region offers an insight into the distribution of primary and secondary educational facilities (see Appendix E1-E9). Fifty nine school districts exist in this region. Of these, 39 are class I districts (grades K through 8), 6 are class II districts (offering K through 12 services in areas with less than a population of 1,000), 13 are class III districts (offering K through 12 services in areas with a population between 1,000 and 50,000) and one class IV district exists which offers only high school education.² With this number of

districts, there is likely to be an excessive fragmentation of jurisdictions and uneconomical delivery of primary and secondary education services in the region.

The federal government plays a formal but indirect role in post secondary education through its financial aid programs.

On the other hand, the state government plays a more formal, direct role in the provision of post-secondary education. These educational services are centralized in the State University System, the State College System and the State Community College System. This centralization of services often has a tendency to draw youth away from the region, especially since there are no community colleges in the locality can be found which could provide education without leaving the area.

Administration of Public Health

Public health services may be divided into six missions. These include hospitals, clinics, nursing care for the elderly, mental health, mental retardation and substance abuse. Overall, the public health services appear to be localized in the large communities within the CNGLA region.

Hospitals

The federal government plays a formal, direct role in the setting of national policy and regulation through the Health Care Facilities Administration and funding mechanisms such as Medicaid and Medicare. Medicaid funds are further disbursed to hospitals by the Nebraska State Department of Social

Services. The Nebraska Department of Health plays a formal, direct role in the licensing of facilities.

Hospital boards work at the local level to carry out administrative procedures for hospitals in the region. Due to legislation and policy that favors urban services, community hospitals are quickly becoming a luxury afforded to those in larger communities while hospitals continue to close down in the smaller communities in the CNGLA region (see Appendix E-10 for hospital locations).

Clinics

The federal government plays a formal, indirect role through the Health Care Facilities Administration and through its funding programs. The State Department of Health is also responsible for licensing health care professionals and clinics run in the region.

The State Department of Social Services determines Medicaid reimbursement rates for local providers. Clinics, like hospitals, have begun to centralize in the larger communities of the delineated region. Clinics are located in Burwell, Broken Bow, Loup City, Ord, Sargent, Spalding, St. Paul and Taylor.

Nursing Care

The federal government indirectly affects nursing home care through its funding programs as well as through regulation by the Health Care Facilities Administration.

At the state level, the Department of Health plays a formal role in the licensing of service providers, while the Department of Social Services disburses funding. The State Department on Ag-

ing provides information about services for the elderly.

Locally, administrative boards work to administer policy and programs. Nursing facilities are available in Broken Bow, Callaway, Greeley, Loup City, Ord, Sargent, Spalding and St. Paul.

Mental Health

The federal government assumes a formal, indirect role in the delivery of mental health services by setting general policy and by providing funds to states. Most involvement at the federal level comes through the National Institute of Mental Health.

Agencies involved in the provision of mental health services at the state level include the Department of Public Institutions for licensing and regulation, the Department of Social Services for funding and the Region III Mental Health Services based in Grand Island.

Region III satellite offices are found at the local level in the larger cities of Ord and Broken Bow and serve the smaller communities in the region.

Mental Retardation

The federal government plays a formal, indirect role through funding and policies for mental retardation services. The Department of Health and Human Services is the agency responsible for funding and policy formation.

The State Department of Public Institution's (DPI) Office of Mental Retardation directly reviews and regulates service programs and channels funding to these programs. The DPI oversees six independent regional offices of mental retardation, with Region III being centered

at Hastings. The State Department of Health licenses and monitors these service programs.

Mid Nebraska Mental Retardation Services operates at the local level in Ord and Broken Bow.

Substance Abuse

Services for alcohol and drug rehabilitation are federally influenced through policy set by the Department of Health and Human Services.

On the state level, the Department of Health directly licenses and monitors treatment centers with the Department of Social Services in charge of disbursing Medicaid payments. The Department of Public Institutions reviews service programs. Services to people in the delineated region area are encompassed by the Central and Western Regions as recognized by the State. These regions have base offices in Keamey and Grand Island.

Local services are offered through providers found in Ord and Broken Bow.

Administration of Human Services

The demand for human services continues to increase while funding for them is reduced due to competing demands at both the state and federal levels of government.

Housing

The federal government has formal, direct influence in the provision of housing through subsidies and programs offered by its Housing and Urban Development Department (HUD).

The State Department of Economic Development is responsible for community development block grant fund disbursement, while the Department of Social Services also offers funding.

The Central Nebraska Community Services office located in Loup City offers low-cost housing programs to low-income families and to the elderly in all counties comprising the delineated region. Local HUD housing and staff are located in Ord, Burwell and Broken Bow.

Human Services

The federal government provides a formal, direct role in the provision of human services as it sets national programs and provides funding for programs. Federal departments involved in human services are the Department of Health and Human Services and the Department of Agriculture.

The State Department of Social Services directly administers programs through regional and county satellite offices. The Department of Social Services oversees North Central District offices in Ord, Broken Bow and Grand Island. The Central Nebraska Community Services office administers a number of programs in the delineated region also.

Itinerant local offices are staffed on a weekly or monthly basis in the smaller towns within the region, such as Taylor, Burwell, Bartlett, Spalding, Sargent, Loup City and St. Paul.

A wide range of services are available such as food stamps, commodities, disability benefits, energy assistance, aid to dependent children and social security benefits.

Administration of Public Works

There are three primary components under Public Works. They are:

1. Water systems
2. Sanitary & storm sewers
3. Electric power

Water Systems

In the formal sector, each city and town in the CNGLA Region has the responsibility in operating and controlling their water systems locally. The State Health Department has the responsibility of examining the water for contaminants and levels of bacteria. The measuring standards to determine the levels of bacteria and contaminants is determined by the Federal Department of the Environmental Protection Agency.³

Informally, the farmers of the region administer the water systems personally. The water systems in the region are considered to be in good condition. Most, if not all, of the water is supplied from wells.

Sanitary/Storm Sewers

The delineated region is regarded as having excellent sewage disposal facilities. Generally, there are minimal drainage problems due to the constant monitoring and testing of sanitary sewage plants. The sanitary and storm sewer systems are regularly monitored by the Department of Environmental Control which is headquartered in Lincoln. This Department is mainly responsible for overseeing the discharges of utilities by

the stonn/sewer systems.⁴

Electric Power

The Electric Power in the CNGLA Region is all publicly owned. If power lines need constructing, it would fall under the jurisdiction of the Public Service Commission who will then obtain easements or right of ways necessary for construction. However, the actual approval needed to construct the power plants or microwave facilities would fall under the decision-making domain of the Power Review Board whose office is located in Lincoln.⁵ However, there are representatives from the Board that serve in the CNGLA Region.

Transportation

There are essentially three primary categories that are related to Transportation. They are:

1. State Highways
2. County & City Roads
3. Railroads

State Highways

There are thirteen state highways which serve the eight county region. The state highways are administered by the State Department of Roads. However, the regulations are set forth by the Federal Department of Transportation. Financially, the state highways receive insignificant support from the federal government. The federal government supplies FAS (Federal Aid Secondary) to the state.

County/City Roads

Administration of the county/city

roads in the CNGLA Region fall under the responsibility of the county and city who oversee their respective roads. Similar to the state highways, the county and city roads abide by the guidelines determined by the Department of Transportation who have ultimate jurisdiction. However, the primary decision makers are the individual counties and towns coordinated by the State Department of Roads, in the region. Also, the county and city roads receive minimal financial support from the federal government. The county and city roads receive their primary support from the state, county and municipal governments.⁶

Railroads

The railroads in the eight county region are few in number. Commercial cargo lines are the only Railroad lines in existence in the delineated region. The Burlington Northern Railroad runs through Broken Bow while the Union Pacific Railroad operates through Ord and St. Paul. The Burlington Northern's business operations are managed and administered from Ft. Worth, Texas while the Union Pacific's business operation's are managed and administered from Omaha, Nebraska. The only significant relationships that Broken Bow, Ord, and St. Paul have with both railroads is through the maintenance operations that the three towns have while both railroads pass through the aforementioned towns . Thus, other than the maintenance areas, the delineated region has very little authority over the Railroads. The primary authority is held by the Department of Transportation which also possesses exclusive rights of way in the

delineated region.

Tourism

Tourism has essentially been divided into two categories. They are:

1. Tourism based on Recreation
2. Tourism based on Culture

Tourism Based on Recreation

Each county (other than Greeley) offers a local park or recreational area. Each of these recreational areas offer a variety of activities such as camping, fishing, swimming, baseball, and other sports activities. Of the seven recreational areas, all are state owned except the Calamus Recreational area and the Sherman Recreational area. Both of these recreational areas are federally owned with the state of Nebraska having leases on them thereby giving the Nebraska Games & Parks Commission jurisdiction over the recreational areas.⁷

All expenses of the recreational area's are funded entirely by the state. The finances are utilized for maintenance and upkeep.⁸ An expenditures report is illustrated in Table 5-1

TABLE 5-1
EXPENDITURE REPORT

REC.AREAS	EXPENDITURES
North Loup	\$3,157
Pibel Lake	\$6,146
Sherman Reservoir	\$89,199
Bowman Lake	Inc.w/Sherman
Calamus Reservoir	\$105,876
Victoria Springs	\$61,958
Fort Hartsuff	\$114,133

Tourism based on Culture

The cultural aspects of tourism refer to fine and performing arts, crafts, and history. The federal government does not provide monetary assistance and does not have a significant influence pertaining to any of the previously mentioned activities. The state however, has a formal influence regarding fine and performing arts and crafts through the Nebraska Arts Council. The Nebraska Arts Council strives to increase the number and diversity of attractions and may serve as a potential funding source.

The Nebraska State Historical Society has a formal role as its responsibilities include: maintaining the state historical sites (which include Fort Hartsuff in the region), determining sites and events of significant importance to the State, procuring historical markers through funds as allocated by the legislature, and nominating sites and buildings to the National Register of Historic Places.⁹ All other activities are undertaken locally, with significant input from local volunteers and businesses. The Department of Economic Development also has a formal influence on tourism. The Travel and Tourism Division provides the entire State with advertising campaigns and assists individual communities with tourism activities. Presently, the Nestbuilders Association promotes tourism in Custer County. However, greater emphasis may be placed on promoting Calamus Reservoir, Sherman Reservoir, and Fort Hartsuff as important economic tourist attractions.¹⁰ Local Chambers of Commerce are not significantly active in promoting tourism.¹¹

Administration of Economic Development

This section discusses the administration of farming, agribusiness, grain storage, tourism, and services.

The federal government plays a formal, indirect role on farming through the Department of Agriculture and the loan and insurance programs offered. The Department of Agriculture has a formal influence through the Agricultural Stabilization Conservation Service (ASCS) and the Soil Conservation Service (SCS).¹² The SCS has a formal influence through administration of watershed protection and conservation programs.¹³ The Department of Agriculture is primarily a regulatory agency which oversees the processing, production and distribution of food. The leadership for these programs is provided through the County Extension Service and its agents. The County Extension Service has agents based in Burwell, Loup City, St. Paul, Ord, and Broken Bow which serve the CNGLA region.

The Department of Economic Development (DED) has an informal effect on agribusiness through its information development programs. The Department of Agriculture, specifically the Soil Conservation Service, provides technical assistance in the form of conservation plans, resource data, and requested information.

The state has an informal influence on the service sector by assisting local communities in their efforts to attract new industries and businesses. Local entities such as banks and co-operatives have a

formal effect on farming and agribusiness through their direct lending of services to these industries. Local economic development corporations appear to be nonexistent within the region.¹⁵

Administration of Environmental Protection

The Environmental Protection Agency (EPA) has a formal, indirect influence on the delineated region through its funding of state agencies and research activities. The EPA has a formal influence through the enforcement of laws concerning the regulation of air, water, hazardous waste management, toxic substances, and pesticides.

The Nebraska Department of Environmental Control (DEC) has a direct impact on the region since it has the responsibility and authority to enforce regulations concerning the state's water, land, and air quality.

The Department of Environmental Control (DEC) has a branch office located in Lincoln. The DEC oversees the regulation and enforcement of laws pertaining to wildlife conservation.¹⁶

Local program administrators rely completely on state and federal agencies to provide environmental protection.¹⁷ However, private advocacy organizations such as the Audubon Society and the Whooping Crane Trust provide local input to national concerns throughout the region.¹⁸

Summary of Problems and Prospects of the Political Subsystem

The emphasis of the Political and Jurisdictional Subsystem study has been on missions, jurisdictions and the decision making process. The study reveals many opportunities and needs as follows:

In the context of public health, the region appears to lack the critical population mass to support the current 59 school districts economically.

There appears to be inequitably distributed health care at the local level, this is attributable to hospital closings, the availability of fewer doctors, and the overall absence of a rural health care network.

In human services, there is an unsatisfied and growing need for increased human services support. This is especially evident for those requiring mental health care, the elderly, and low income families. There is a lack of city and regional involvement in the administration of such services. The lack of infrastructure contributes significantly to this issue. The control of these services are dominated by the larger cities within the state.

A higher level of preventive maintenance is necessary on Nebraska Highway 2 between Grand Island and Broken Bow. This has a considerable impact upon the local and regional economics for those served by this roadway.

There is inadequate promotion of tourist attractions and historical sites within the delineated region. The State Department of Economic Development, under the auspices of the Federal Department of the Interior,

sponsors the Division of Travel and Tourism which promotes tourism statewide but does not have an emphasis on the delineated region. There exists an overall lack of coordinated effort by communities and individuals within the region.

There is a need for greater coordination for city and town cultural events. This includes such events as local festivals and annual events. Greater coordination may lead toward promoting a sense of unity throughout the region and promote tourism by providing a cohesive events schedule for visitors

Stronger involvement is necessary in regional environmental protection issues. This involvement needs to be established at a regional level supported through local participation. This includes the establishment of landfills, sanitary sewage disposal, and monitoring water quality.

There is a lack of regional coordinated political influence involving such issues as promoting greater state enabling legislation. The lack of coordinated political influence is attributable to the absence of a centralized committee concerned with promoting the primary issues of the region.

There is insufficient critical mass at the local level for leveraged representation. The region contains sufficient mass for strong representation, however it currently lacks unity and direction in its efforts.

Stronger media representation is necessary to increase the promotion of the CNGLA region. Cooperation must replace competition between communities. The media needs to provide the common interests that exist among the Nestbuilders Association and the CNGLA.

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Chapter 6

Goals and Sub-Goals

The preceding chapters identify the problems and prospects of the delineated region which were inferred from the assessments. On October 5, 1990, these items were presented to, and clarified and endorsed by, representatives from the CNGLA. The endorsed problems and prospects became the Agenda for the formulation of goals and sub-goals.

Each problem or prospect necessitates several sub-goals which may be collectively aggregated to constitute the goal statement. The goal statement was presented to representatives of the CNGLA on October 24, 1990, where it was amended and endorsed. The endorsed goals and sub-goals are listed below. Objectives were then formulated to accomplish these goals. The goals and objectives developed by this study were presented to a delegation of the CNGLA on October 24th. The delegation assisted in amending and prioritizing these goals and objectives to best reflect the needs of the region. The CNGLA delegation then presented the amended goals and objectives statement for adoption by the CNGLA Board on October 25, 1990. The following is the adopted version of goals and objectives for development of the CNGLA Region.

Problem: Inadequate utilization of recreational and tourism resources

Goal 1: Utilize and expand recreational and tourism opportunities in the area.

Sub-goals:

- Create a regional tourism agency.
- Promote historical research.
- Increase features and attraction in the region.
- Increase publicity networks for the region.
- Increase recreational opportunities in the region.
- Increase resource base from tourism and equitably disperse resources.
- Provide adequate recreational infrastructure.

Problem: Lack of Economic Diversification in the region.

Goal 2: Diversify the economy of the region.

Sub-goals:

- Encourage new enterprises to develop in the region.

- Provide educational and vocational training within the region.
- Promote tourism.
- Improve existing infrastructure (provide and improve urban infrastructure.)
- Find optimal locations for new enterprises in appropriate communities throughout the region.
- Equitable distribution of the benefits of growth among all communities within the region.
- Protect the physical environment from the consequences of economic development.
- Provide adequate/better employment for all ages in all communities in the region.
- Protect existing business vitality in the region.
- Establish effective lead agencies for economic growth in the region.
- Improve accessibility in the region.

Problem: The quality of life in the region is threatened

Goal 3: Maintain and enhance the quality of life in the region.

Sub-goals:

- Protect the physical environment from the consequences of growth.
- Provide adequate/better employment for all ages throughout the region.
- Improve existing infrastructure.
- Improve recreational opportunities in the region.
- Provide for the equitable distribution and cooperation of public health, safety, and human services within the region.
- Enhance the sense of community within the region.
- Enhance overall economically feasible educational opportunities in the region.
- Improve the attractiveness of communities in the region.
- Improve accessibility.
- Provide adequate affordable accommodation throughout the region.

Goal 4: Create a regional system to economically handle solid waste.

Sub-goals:

- Identify an appropriate method and location for solid waste.

- Minimize negative impact of solid waste disposal on natural resources.
- Provide for continuous, appropriate management of sites.
- Provide appropriate mechanisms by which to evaluate and repair existing sites.
- Identify and appropriate method or methods for solid waste disposal.
- Improve awareness of environmental impact of solid waste disposal.
- Utilize economic potential of solid waste.

Issue: Developing the three growth corridors of Highway 2, Highway 11, and Highway 281.

Goal 5: Improve functional interdependence between growth poles and independent nodes.

Sub-goals:

- Improve accessibility along each corridor.
- Provide equitable redistribution of functions towards regional balance.
- Maintain viable communities consistent with their desired qualities of life.

These goals and sub-goals furnish the agenda for the formulation of planning programs and projects. Upon review of the goals and objectives five key thematic areas were identified as priorities by the representatives of the CNGLA on October 24.

1. Economic Development
2. Health, Human Services, and Housing
3. Tourism Development
4. Solid Waste Management
5. Implementation

The selected priorities define the scope of the development plan which is documented in the following chapters.

Chapter 7

The Plan For Economic Development

Regions that have a large percentage of rural areas (like that of the delineated region) have experienced economic stagnation

because of their emphasis on a single sector of their economic system, agriculture. Diversifying the economy tends to make the delineated region more economically balanced, attracting new businesses or industries that may enable the region to expand its present level of development. Economic development planning for the delineated region involves a variety of strategies, programs, and projects that attempt to improve the economic vitality of the region.

Strategies

The four main strategies to promote economic development are:

1. Infrastructure improvement
2. Entrepreneurship initiation and promotion
3. Education enhancement
4. Tourism promotion and development

The adoption of programs, and projects to facilitate these strategies may result in a more diverse economic base for the delineated region.

Strategy 1: Infrastructure Improvement

Improvements in infrastructure focus on the following items:

1. Communication and Transportation Access
2. Facilities and Utilities
3. Capital Formation
4. Market Research.

Program 1: Communication and Transportation Access

Projects:

1. Computer Links

Communication may be accomplished by the use of telecommunications technology, computers and computer linkages (modems) by regional associations such as the CNGLA. The region may link up with national and state networks that disseminate information, such as the Nebraska Venture Capital Network among others.

2. Newsletter

A regional newsletter may be

published by a lead agency (such as the CNGLA in conjunction with local chambers of commerce) to distribute information and coordinate economic development within the region.

3. Highway Improvements

The major transportation corridors of Highways 281, 11, and 2 may allow a higher volume of goods movement, as well as make travel easier for residents and visitors. A lead agency needs to be developed to evaluate the effectiveness and needs of current transportation routes and then make recommendations based on this analysis. The lead agency membership should include representatives from: Chambers of Commerce, Business leaders, Department of Roads, and Railroad officials, may be convened by the CNGLA.

Program 2: Facilities and Utilities

Projects:

1. Regional Cooperatives.

Regional cooperatives need to be organized to address a variety of agriculture, manufacturing, health, and household industry concerns. These cooperatives may benefit local businesses and industries by giving them the ability to purchase large quantities of goods at substantial savings from suppliers. A craft cooperative may be helpful in getting people started in home based industries and may further diversify the economy of

the region. The National Cooperative Business Association may help in implementing this project along with the county extension office and the CNGLA.

2. Utility Improvements

Improvements to the utilities of the region such as the electrical, water, and sewer systems may be needed to handle increased demands for such services consequent on increased economic development. Companies in the region that seek to expand production or business interests may need utilities that are able to handle the increased work load. Companies that are seeking investment opportunities to locate in the region may be more likely to do so if the utilities in the region match their expectations. Industry and business representatives along with a regional association (like of the CNGLA) need to conduct an assessment of the current status of utilities and their improvement and expansion potentials. Industrial Development Revenue Bonds (IDRB) or the Community Improvement Financing (CIF) may be used to finance utility improvements.

3. Building Improvements.

Buildings may be divided into two categories:

- a) Those on main street (storefronts, warehouses, signage and landscaping)

- b) Those not on main street (public buildings, warehouses, signage, and landscaping).

Improvements and maintenance of main street may both be an inducement for new development as well as an addition to the quality of life in the communities. Improvements and maintenance on other streets may increase the utility of existing facilities as well as making the communities a more attractive places to live and work. The Nebraska Investment Finance Authority (NIFA) offers opportunities for low interest financing for manufacturing facilities. Buildings for retail and commercial use may be improved with assistance from programs such as the Community Development Block Grant (CDBG) and funding support from the Community and Rural Development division of the Nebraska Department of Economic Development (DED). At the federal level, the Economic Development Administration (EDA) provides loans from 50% to 80% of the cost of the project depending on the economic conditions of the area. Local Chambers of Commerce and associations such as the Nestbuilders and the CNGLA may also provide assistance in the assessment of community needs.

Program 3: Capital Formation

Projects:

1. Revolving loan fund.

This fund may be used to make small loans (\$500 to \$5000) to new and existing businesses. The fund may be community based and implemented with the organizational help of agencies such as the Center for Rural Affairs, in Walthill Ne, and the Nebraska Department of Economic Development (DED). Research by an association such as the CNGLA, may be funded by the Nebraska Research and Development Authority (RDA).

2. Alternative funding sources.

Venture capital loans offer a wide variety of funding options. Many types of venture capital loans are available from the DED and other agencies at both the state and federal levels. In addition, venture capital formation maybe modeled after the efforts in other states where associations of larger businesses and industries offer direct working capital loans for new businesses. See appendix (F).

Program 4: Market Research

Projects:

1. Analysis and Evaluation of Regional Resources.

This project would involve research of new markets for existing products and new methods of production for products that are locally manufactured. As an exam-

ple, the University of Nebraska's Institute of Agriculture and Natural Resources has developed an alfalfa-wheat straw mixture that can replace peat moss as a soil additive. Programs such as this and others may contribute to the increased use of many Nebraska grown products.

2. Promotion of locally produced products.

A catalog of local handicrafts that may be distributed outside the delineated region would give the communities a more visible identity as well as promotion of regional products and services. This catalog may be assembled by associations such as local Chambers of Commerce, Rotary clubs, and the CNGLA.

Strategy 2: Entrepreneurship Initiation and Promotion

The promotion of entrepreneurship within the framework of the regions resources is a cost effective strategy that may be especially beneficial to the region. Entrepreneurship skills may require some training and education for implementation. A good example of vocational training geared toward entrepreneurship would be that being offered at the Center for Rural Affairs in Walthill, Ne. Workshops being offered at the Center include practical topics such as debt theory, the economics of thrift and personal resource audits. Three example programs have been selected as possibilities for entrepreneur-

ship businesses

- (1). Cottage industries,
- (2). Marketing and Advising
- (3). Value Added possibilities.

Program 1: Cottage Industries

Projects:

1. Promotion of a home based handicraft industry.

Handicraft industries are some of the easiest types of businesses to implement, because they do not require large "start up" sums of capital and may be used as a secondary source of income. A handicrafts cooperative may be especially helpful in encouraging residents of the delineated region to develop alternative income possibilities.

2. Exploration of "Bed and Breakfast" and "Dude Ranch" opportunities.

Bed and Breakfast establishments are some of the fastest growing entrepreneurship businesses. Developmental help may come from many sources such as the DED Travel and Tourist Division, the Bed and Breakfast association and the Home Based Business Association.

Program 2: Marketing/Advising

Projects:

1. Promotion of locally produced goods and services.

the delineated region may be developed for presentations at state, national, and international trade shows. The sponsoring agencies may be associations such as the CNGLA, the Nest Builders, and local chambers of commerce. Nebraska's Department of Economic Development may be the best equipped state agency to promote Nebraskan products to the international market. At the federal level, The Export Revolving Line of Credit Program offers loans that may be used to finance labor, materials, and methods to develop foreign markets.

2. Development of new methods and products.

An agency such as the CNGLA may serve as a clearing agency for the dissemination of information about new innovative techniques of production and possible new products that may be produced by communities in the region. The regional newsletter that was previously mentioned may be instrumental in the distribution of information.

Program 3: Value Added Processing

Projects:

1. Development of industrial complexes based on agricultural products.

Industrial Complex Analysis techniques have been used to determine alternative uses and products involved in the produc-

tion of agricultural products, it is possible to open new markets for locally manufactured goods. Examples of an industrial complex analysis are included in appendix E. Value added processing may greatly increase the income generated from a specific product. Individuals and associations such as the CNGLA, may develop industrial complexes based on other regional products.

2. Development of methods to reduce production of solid waste and/or possible uses for byproducts of solid wastes.

Recycling of some of the solid wastes that are generated in agricultural production may be a good method for residents of the region to use byproducts that are not generating income. Ethanol extraction from agricultural products is a good example of value added processing that is currently being used and may continue to be used in the future. Associations such as the Nest Builders may focus on regional production centers and agencies like the CNGLA may facilitate technology transfer.

3. Development of industrial complexes based on gravel.

Gravel, one of the regions mineral resources, may be considered as a possibility for value added processing. Value added processing for gravel may take the form of manufacturing floor or roofing tiles, or sand paper uses. In addition, the sorting at the point of ex-

traction of the gravel may be another form of value added processing giving the gravel additional earning potential. Agencies, such as the CNGLA, may investigate the alternative uses of resources of the region. See appendix E for further examples of industrial complex analysis.

population to run production. While the attraction of larger industries might bring an abrupt end to the out-migration of the youth of the region, home based industries and value added processing of the products and resources may both create economic expansion and may not adversely affect the quality of life in the delineated region.

Conclusion

Economic growth in the region may be realized by diversifying the economy. The strategies and programs that are discussed, namely the improvements in communication and access, value added processing, and entrepreneurship development projects (especially cottage industries) appear to be the most promising, cost effective strategies available, though many other alternatives are possible. Some of the programs discussed may be started and implemented in relatively short periods of time (1 to 2 years) while other programs may require longer periods for research and realization (3 to 10 years). Education of the current work force is an important consideration, both in terms of entrepreneurship and in work force characteristics and may be addressed in a subsequent section (Chapter 8). Tourism is the third largest industry in the state and may be very important to the economic diversification the region. Tourism is also discussed in greater detail later in this report (Chapter 9). Due to the low percentage of unemployment in the delineated region (1% - lower than the states average), larger industries may have a difficult time finding enough

Chapter 8

The Plan for Health, Human Services and Housing

The following programs and projects offered in the Human Services and Housing subsystem are recommended in order to maintain and enhance the quality of life in the region. Employment, education, health, housing, human services, and public safety related programs and projects are the key categories discussed below.

Strategy 1: Community Involvement in Creating Employment Opportunities

This strategy attempts to include community leaders as key participants in the education of the area's youth as the prerequisite for creating employment opportunity in the region.

Program 1: Public School Career and Skill Enhancement

This program creates an educational partnership between community leaders and the public schools to improve the skill levels and career opportunities for the area's youth.

Projects:

1. Private sector involvement in career counseling.

Community and business leaders throughout the region may visit students in the schools and invite students to on-site business visitation. Community and business leaders may conduct question and answer sessions to inform the students of the details regarding that particular business activity to stimulate interest.

2. Establishment of a career/education fair to be held at high schools in the region.

Representatives from state educational institutions and employers in the region may participate on a yearly or semester basis in fairs and provide information, advice, and guidance for future education and employment opportunities in the region.

3. Development of a Youth Improvement Program in the region. Students from grades 7-12 may be encouraged

to engage in community improvement projects. Projects which may enhance the physical attractiveness of the communities may include yard/park clean ups, house painting, and general rehabilitation of run-down structures. Community leaders may provide the guidance for the students, and the students may learn the value of cooperation, and at the same time receive some monetary compensation for their efforts.

4. Establishment of a region-wide internship program.

Area business leaders may offer high school and college students specific internship appointments where the students may work for a particular business organization in exchange for an "on-site" educational opportunity in addition to fair monetary compensation.

5. Establishment of vocational-skills enhancement curriculum in the area's public schools.

In this project the region's Educational Service Units may work cooperatively with each other to develop a vocational skills curriculum for public school students and adult continuing studies students. The school's curriculum may be supplemented by regular visits from the area's vocational business leaders to assist in "real life" projects.

Program 2: College Return Investment

This program may provide the means whereby a student may attend college and also help the region with the education received at college.

Projects:

1. Development of a revolving college scholarship fund.

Public and private donations may be solicited for this revolving fund so that when the repayment of the loans occur other students may make use of these funds. With the stipulation that students also work in the region applying their enhanced educational skills in some vocational activity, the region benefits by association with these students and reaping the increased applied learning opportunities that these students may offer.

Strategy 2: Public Coordination and Cooperation on a Region-wide Basis

This strategy recognizes the need for the region's public schools to cooperate with one another in the coordination of shared/similar activities.

Program: Coordination/Sharing of Educational Resources

Projects developed under this program would be developed by having school districts pool their scarce resources together in order to achieve their maximum benefit.

Projects:

1. **Pool purchasing arrangements between the various school districts for school supplies and equipment.**

Various regional school districts may pool their allocated revenues for school supplies and equipment together and negotiate bulk purchasing of supplies in a manner which maximizes value discounts and economy of scale.

2. **A region-wide educational system of shared instructional personnel and resources may be initiated.**

Various school districts through the region may share specialized instructors and resources with one another in order to allow each school district to provide these resources at an economical cost. Again by means of pooled purchasing arrangements, the school districts could buy these instructional resources in a collective manner.

Strategy 3: Increased Availability and responsiveness of Health Care Professionals.

This strategy addresses the health care needs of the region by increasing the numbers of health care professionals in the region, and also recommends that these professionals broaden their service capacity by catering to the need of making appropriate referral for spe-

cial populations in the area (i.e. elderly, mentally ill, mentally retarded, physically disabled).

Program 1: Recruitment Campaign

This program seeks to increase the availability of health care professionals in the region by means of recruitment techniques.

Projects:

1. **Written recruitment project.**

A written recruitment announcement in professional medical journals with national circulation may solicit health care professionals from medical schools.

2. **Speaker's bureau.**

A speaker's bureau may speak to medical students from the area studying at Creighton and Nebraska medical schools. The quality of life in the region may be highlighted as an incentive to locate and establish a practice there.

Program 2: Financial Incentives

This program provides financial inducements to prospective medical students and health care professionals to contemplate taking up residency in the area.

Projects:

1. **Tax Increment Financing**

Tax Increment Financing is a method by which a community issues a tax increment bond to pay for the building of specific projects such as a medical

facility. The loan is repaid with the enhanced revenue generated by increased property tax assessments levied against the property.

2. Return investment revolving fund scholarship program.

A return investment revolving fund scholarship program may be specifically designed to finance the medical school education of health care professionals in return for their commitment to return to the delineated region and practice medicine for a period of time.

Program 3: Health Care Professionals Inservice Training

This program seeks to broaden the health care professionals service capacity to address the needs of special populations in the region by having the health care professionals undergo mandatory training regarding the needs of special populations and also knowing where to refer patients for additional specialized services.

Strategy 4: Increased Awareness of Health, Human Services and Public Safety Issues by the General Population.

This strategy seeks to increase the awareness and participation of the region's general population in taking care of their own health care and public safety needs.

Program: Health, Human Services, Public Safety Education

This educational program may be sponsored by the public school and health care providers in the region. It seeks to comprehensively distribute health care, public safety and human services information to students in public schools and to the general public.

Projects:

1. Speaker's bureau.

A speaker's bureau campaign may be organized to discuss these issues in the public schools, retirement communities, and other public places where people tend to congregate.

2. Print campaign.

A written campaign may address these issues in the area's newspapers, in posters placed in public places and handed out in the form of brochures.

Strategy 5: Increased Availability of Medical Services Facilities

Program 1: Satellite Health Care Clinics

The Satellite Health Care Clinic program may be modelled after a similar program established in the Southwestern Nebraska communities of Cambridge, Indianola, Arapahoe, Oxford and Beaver City. In this model, local community business people, community leaders and health care providers established the Tri-Valley Medical

Foundation which raised funds from local business health care professionals and charity-raising activities to finance health care clinics in towns surrounding the main hospital in Cambridge. By cooperatively pooling their resources to enhance their relative financial strength, these communities appear to be able to share in the health care benefits provided by these clinics.

Currently, the Loup City council has approved a medical care delivery assistance feasibility study which may enable Loup City to establish a health care clinic under the auspices of Kearney's Good Samaritan Health System's facility.

Strategy 6: Enhanced Communication Networks

This strategy seeks to improve the health care and public safety in the region by developing a telecommunication networking system.

Program 1: Phone Referral Hotlines

Phone referral hotlines may provide residents of the region with the information or services that they need.

Projects:

1. The Ask-A-Nurse Health Care Line may be used to field medical questions and concerns.
2. The 911 Emergency Hotline may refer people's emergency needs to the appropriate emergency service.

Program 2: Health, Human Services, Public Safety Services Awareness

This program seeks to increase the visibility and accessibility of these related services.

Projects:

1. **Improved emergency signage.**

An emergency signage project may seek to increase emergency signage in the region to more easily facilitate the travelers' access to needed emergency/public safety services.

2. **Public service brochures**

Public service brochures containing information regarding public health, public safety and other human service information may be widely distributed across the region, to more easily facilitate access to needed services.

Strategy 7: Enhance Transportation Service Networks

This strategy seeks to enhance the region's capacity to transport residents to their medical or human services appointments.

Program 1: Client/Patient Transfer Program

This program involves transporting clients or patients to and from their medical appointments.

Projects:

1. **Handicap van service**

A cooperative campaign of

pooling financial resources may enable the purchase of a handi-cap access van which could transport clients and patients to their destinations.

2. Volunteer network.

A volunteer network project may match volunteers with cars willing to transport residents with those who need transportation assistance.

Strategy 8: Increased Post-Secondary Adult Education Availability

This strategy is intended to enable area residents with increased availability to post-secondary educational opportunities in the region thereby increasing their chances for better employment possibilities.

Program 1: Post-Secondary Adult Continuing Studies

This program may involve the state's higher education institutions in an effort to allow adults in the CNGLA region to receive post-secondary educational instruction in their own communities.

Projects:

1. Seminar series.

A seminar series may bring visiting professors and business instructors into the region for weekly or monthly instructional sessions.

2. Telecommunications and/or correspondence networking systems

Telecommunications and/or correspondence networking systems may allow area residents to participate in classroom lectures and activities from state universities outside the region in the comfort of their own communities.

Strategy 9: Enhance Tourism Activity With Community Education

This strategy seeks to enhance tourists enjoyment and accessibility to the CNGLA region's attractions by involving the local citizenry.

Program: CNGLA Hospitality Program

This program would involve the local residents as local hospitality ambassadors to help tourists with their travelling needs.

Projects:

1. Hospitality training for residents

Hospitality training for residents who frequently come into contact with tourists may be held under the auspices of the State Department of Economic Development's Travel and Tourism Division to help the residents respond to the travellers' needs.

2. Tourist information brochure

A tourist information brochure may be designed and then disseminated to establish-

ments frequented by tourists to alert the tourists' knowledge of recreational opportunities in the region.

Strategy 10: Increased Awareness/Knowledge of Cooperative Economics/Opportunities

This strategy seeks to formally adopt systems by which the residents of the region may work together toward commonly held goals and objectives utilizing scarce resources for maximum benefit. While all the other programs and projects may help unite the people of the region this strategy advocates that the area residents adopt a system of cooperative principles and economics to achieve these objectives. In the process of working cooperatively together the residents may develop a common linkage and bonding together which may enhance their overall sense of community.

Program 1: Cooperative Economics Education

This education program seeks to provide the region's residents with information regarding consumer cooperation and economics. Currently Blooming Prairie Warehouse, a natural-foods cooperatively organized wholesaler from Iowa City, Iowa is in a position to answer any of the residents questions in this regard. Blooming Prairie works with 9 food-buying clubs in the CNGLA region who combine their resources and buy healthy, natural foods at wholesale prices. This type of consumer coopera-

tive arrangement may be designed to set up hardware, childcare, health care, banking (credit unions) and housing cooperatives.

The recently enacted 1990 Farm Bill authorizes \$150 million to be spent over a 3 year period to provide grants to non-profit Regional Rural Cooperative Development Centers in order to develop new rural consumer cooperatives and expand existing ones. Area residents may contact their local elected representatives to track the implementation of this bill.

Strategy 11: Community Involvement With Youth

This strategy seeks to include community leaders as key participants in the education of the area's youth.

Program 1: Public School Career and Skill Enhancement

This program may directly involve the region's community leaders in an educational partnership with the public schools to improve the skill levels and career opportunities for the area's youth. The projects for this program are detailed in Strategy 1, Program 1 of this chapter.

Strategy 12: The Coordination of Housing Activities

A coordinated effort is needed to improve housing conditions in the region.

Program 1: Centralized Housing Agency

The development of a centralized housing agency to oversee housing programs in the region.

Projects:

1. Regional HUD Agency

The development of a Regional Housing and Urban Development Agency (HUD) at the state level may be beneficial because the only Nebraska HUD office is located in Omaha and predominately serves large metropolitan areas. The regional agency may assist in publicizing and implementing housing programs, as well as, answering questions or concerns dealing with housing and rehabilitation funds. The CNGLA needs to negotiate with the State HUD office located in Omaha to determine the possibility of a regional office to serve the central and western parts of the state.

2. CNGLA Housing Liaison Committee

The establishment of a CNGLA liaison committee may would act as a source for attaining funds for housing throughout the region. The liaison committee may also act as a source for the implementation of Federal and State housing programs.

3. CNGLA Housing Information Committee

The CNGLA may form a CNGLA Information Committee. The committee may act as a source for the dissemination of financing and program information regarding housing, housing rehabilitation programs, home finance programs, various other types of financing programs, and public housing.

The committee may develop and distribute housing information to communities in the region through brochures and pamphlets that explain the various types of programs that are available. The committee could also advertise various types of programs in local newspapers.

Strategy 13: The Enhancement of Available Housing Funds

The enhancement of available housing funds may help to create new housing and rehabilitation opportunities in the region.

Program 1: Encourage local lenders to support housing

The CNGLA may attempt to encourage lenders to finance public housing programs, housing rehabilitation programs, and housing starts. This may be done by conducting housing information seminars and by mailing banks information pertaining to financing and available tax credits that can be given for this type of financing.

Information on these lending programs may be obtained from the Nebraska DED, and the Omaha HUD office.

Program 2: Non-traditional housing funding sources

Non-traditional sources of financial support for housing may be developed by the CNGLA.

Projects:

1. Habitat for Humanity

Habitat for Humanity is a private non-profit organization that develops affordable housing utilizing volunteer labor. Information on developing this project may be obtained from the Lincoln office of Habitat for Humanity.

2. Cooperative Housing

A communication network may be developed for people who may not have the resources to own a home or the need for an entire structure to pool their resources and share housing.

Strategy 14: The Enhancement and Development of Elderly Housing

Increased demand for elderly housing is one consequence of an aging population in the region. Existing facilities need to be upgraded and new ones developed.

Program 1: Development of minimal care facilities

Minimal care facilities need to be

developed to provide for the housing needs of many of the region's elderly citizens. Minimal care facilities provide the assistance such as meals and transportation to its residents.

Projects:

1. Cooperative Housing

Cooperative housing may be used as a form of minimal care facilities where residents can work together to meet their needs.

Program 2: Housing Rehabilitation Program

A housing rehabilitation program may provide free rehabilitation of elderly individuals' homes. The rehabilitation may be done by church groups, Boy Scout and Girl Scout Troops or high school vocational education class. This program may be linked with a youth improvement program that has been previously discussed.

Strategy 15: The Development of a Regional Infrastructure Committee

The aging state of CNGLA housing, public facilities and Infrastructure may require a regional approach to coordinate action. An Infrastructure Committee may be developed to address regional infrastructure issues.

Program 1: Assessment/Coordination/Advocacy Program

Under this program, the CNGLA

may work with communities throughout the region to have a needs assessment conducted and to aid these communities in a coordination process to meet the assessed needs. The CNGLA may also aid in the development of an organization that may promote and oversee the program. This program may be funded by either State or Federal funds or both.

Program 2: American's with Disabilities Act Committee

The "Americans with Disabilities Act" has recently been established. This Act requires public facilities to become handicapped accessible. The Act requires businesses to become physically, as well as, technologically accessible by handicapped people. The Act also requires public transportation vehicles and stations to become handicapped accessible.

The Americans with Disabilities Act Committee may disseminate information pertaining to the Act and answer any questions pertaining to it. The Committee may also aid various communities in fulfilling the requirements of the act.

Program 3: Codes Enforcement Agency

A codes enforcement agency may be developed to assist communities in ensuring that buildings meet safety codes, as well as, the requirements of the "Americans with Disabilities Act." The agency may review plans on all new construction as well as enforcing codes on existing structures.

Strategy 16: The Maintenance of the Existing Housing Stock

Much of the existing housing stock in the region is older and requires extensive maintenance to remain useful.

Program 1: Rehabilitation Financing Program

A Rehabilitation Financing Program may require the CNGLA to act as a liaison between the region, bankers and the Department of Housing and Urban Development. Utilizing a combination of CDBG funds and private financing the program may offer low interest loans for housing rehabilitation in the region.

Program 2: Community Pride Improvement Program

The Community Pride Improvement Program involves communities in their own rehabilitation and maintenance. The CNGLA may encourage community participation by sponsoring contests and awarding prizes. One example of a contest is the "Best Kept Yard Contest." Members of the CNGLA may judge yards throughout various communities in the region to determine which yard fits this classification. The property owner may then receive a prize.

Program 3: Downtown Beautification Program

A Downtown Beautification Program may be implemented in various communities and may require simple improvements such as sign consistency and the landscaping of downtown areas

of communities. Signs may be made by volunteer groups and/or students of high school vocational education classes.

The landscaping of downtown areas may be accomplished through the planting of bushes, shrubs, trees, and flowers. This too may be done by high school vocational educational classes and/or volunteer groups.

Volunteer clean up weekends are also a necessary component of the Downtown Beautification Program. Clean up efforts may involve church groups, Boy and Girl Scout troops and other volunteer groups.

Conclusion

The implementation of these programs and projects tends to enhance the quality of life in the region. By enhancing the quality of life in the region the area residents may be more inclined to remain in the region, and residents who have left the region or tourists visiting the region for the first time may be inclined to return to the region.

A good quality of life also works to enhance economic development. Businesses tend to be impressed with the regions' quality of life, and may volunteer to build new facilities or expand existing ones. A good quality of life may also enhance the area's tourism activity as tourists may want to extend their vacation in the region or may want to return at a future time. Good management of solid waste is a critical component of the region's quality of life and is discussed in another section. A good quality of life is a critical component which makes the CNGLA region a

better place to live.

Chapter 9

The Plan for the Development of Tourism

The development of tourism may provide for a more diversified economy in the delineated region. Tourism brings money from outside the region directly into the regional economy providing the opportunity for growth. The following strategies, programs, and projects are designed to enhance the delineated region's tourism potential.

Strategy 1: Improve Access to Attractions

This strategy is justified because tourists need to know where attractions are located, and the easiest and safest way to get there. Having good roads to travel on and highly visible signage of attractions may bring about an increase in tourism numbers, and better roads may benefit local residents as well.

Project 1: Improvement of Roads at Attractions

This project may be achieved through efforts described in Project 3, Program 1, Strategy 1 in Chapter 7.

Project 2: Develop Coordinated Signage for Tourist Attractions

By developing coordinated signage along the highways, visitors may be made aware of the range of attractions found along a highway or route. The design and location of the signage needs

to be sensitive to appearance and reduced clutter.

The Department of Roads and the Game and Parks Commission appear to be the two most prominent agencies that need to be contacted to carry out this strategy.

Implementing this specific strategy may help to provide adequate recreational infrastructure and enhance attractions and features.

Strategy 2: Increase Accommodations

The second development strategy for tourism and recreation is to increase accommodations at attractions in the region. Some of the various types of accommodations that may be considered are: bed and breakfasts, camping spaces, R.V. parks (recreational vehicle), cabins, and a motel chain.

This strategy is justified because an increase in accommodations may increase the resource base from the lodging tax. With the addition of a variety of accommodations there may be a need for improved quality of infrastructure.

There are a number of agencies that need to be consulted to fully implement this specific strategy. The Research Division in the Nebraska Department of Economic Development (DED) may be contacted to assist in conducting a needs assessment to provide information re-

garding available accommodations and types of accommodations. The DED can assist in determining what accommodations are most needed.

The Travel and Tourism Division is a division in the Department of Economic Development. Much of the information to be provided to the CNGLA from the DED may come from this specific division.

Other agencies that may be consulted if this strategy is to be fully implemented are: the lodging industry; regional tourism agency; and the Nebraska Bed and Breakfast Association.

Program 1: Encourage Bed and Breakfast Development

Presently there are around 50 bed and breakfasts in Nebraska, many of which were formed in the past 3 years. These bed and breakfast inns are becoming increasingly popular among tourists, especially to senior citizens (65 and older). Bed and Breakfasts may also offer an opportunity for entrepreneurship described in chapter 7.

Program 2: Develop Camping, R. V. Parks, and Cabin Facilities

Increased camping, R. V. and cabin facilities may draw more tourists interested in the outdoor recreation opportunities in the delineated region. Private as well as public sources such as the Nebraska Games and Parks Commission may be enlisted in this effort.

This strategy upon implementation may help to increase resource base from lodging tax, increase recreational opportunities, and provide adequate recreational infrastructure.

Strategy 3: Enhance the Scope of Tourism Season

This strategy is recommended to extend the tourism season beyond just the summer months, and provide residents with activities or recreational opportunities that may be enjoyed during winter months as well.

Currently, there are activities and events throughout the year except during the months of March and December. It is only reasonable that events be scheduled to fill the gaps within the calendar year.

Program 1: Tourism Shuttle Service

One possible event to increase the tourism season may be by implementing a regional tourism shuttle service. The proposed CNGLA Tourism Council may employ a tour guide as well as purchase or lease a tour bus/van to take tourists to the region's attractions and features. This regional tour service may be scheduled for either March or December, or even both months depending on the success of the shuttle service.

Program 2: Regional Christmas Fair

A regional Christmas fair/carnival may provide and display food, agricultural products, arts & crafts as well as gifts and games. This is easily geared towards all age groups. The CNGLA may hold this event any day in December before the 25th. This event and the regional shuttle service may be financed through the lodging tax, donations, fundraisers, or grants.

Strategy 4: Group Targeting

"Group Targeting" is recommended to promote tourism. Once promotional information is made available, it must be distributed to appropriate markets or networks in order to be most effective. The basic aim is to select the most efficient means for delivering a given message to known target groups during a given time period.

In targeting potential customers the CNGLA may develop, and in certain respects correct, the region's image as a desirable travel destination. Another suggestion is to motivate potential customers to seek further information about travel to the region. The CNGLA may then create awareness of the full range of travel and recreational opportunities within the region.

The CNGLA may utilize newspapers and a newsletter addressed to travel agencies and travel related businesses in the state to reach the travel trade target.

To reach actual visitors, the CNGLA may distribute a message of welcome through signs to arriving visitors or tourists at points of entry from the north and south of the CNGLA region. The main points of entry may be the three corridors that dissect the CNGLA region. The CNGLA may then offer the visitors/tourists any information or assistance they may need.

Finally, the CNGLA may target a general audience by ensuring that the publications within the region regularly carry newsworthy information on the progress of the region's tourism development, activities within the region, and the availability of new or expanded tourist services.

This strategy may assist in increasing publicity networks within the region, and identifying and enhancing the region's attractions and features.

Strategy 5: Increase Private Development Around Recreation Areas

If a greater number of tourists are to be attracted to the region, facilities and amenities must be improved or expanded.

Entrepreneurs are needed to manage, operate, and construct or improve private developments around the recreation areas in the region.

Volunteer staff may help to reduce operating costs incurred by the entrepreneurs and increase community involvement and knowledge about nearby recreation areas to make them more accommodating to visitors. Volunteers may be used to pick up litter, staff information booths, and act as tour guides. School groups, senior citizens, and other community members may be recruited as volunteer staff.

Existing facilities that may be modernized include restrooms, boat ramps, campsites, R.V. hook-ups, and others. Expanding facilities at recreation areas may involve adding cabins, building marinas, constructing or enlarging concession establishments, adding shops for bait and tackle or recreation equipment, among others.

The Game and Parks Commission needs to be consulted before facilities may be improved or expanded, and the Commission may also share in develop-

ment costs. The DED may provide guidance on the feasibility of these projects, and may act as a consultant, along with the Travel and Tourism Division, for other concerns and needs that are present. Promotion for the recreation areas and their associated facilities and amenities may be provided by a regional tourism agency. These private development projects should begin implementation by the year 1993.

Strategy 6: Formation of a Regional Tourism Council

This strategy is recommended to promote activities that are prescribed by the Regional Tourism Council which will result in expanded opportunities for tourism and recreation in the region.

The first step in forming the Regional Tourism Council is the recruitment of members. Each county needs to have several representatives, and members from counties in and neighboring the delineated region. Members need to represent a diversity of interests, ranging from public officials (Chamber of Commerce staff, game wardens, county commissioners) to private individuals (businesses persons from lodging or dining establishments, homemakers, retirees).

The Regional Tourism Council may promote tourism in the region by publishing an annual visitor's guide. The guide may provide a schedule of events, an inventory of lodging and dining facilities, local history, maps, and other information needed by visitors.

The Travel and Tourism Division of the DED may be a source for advice and

guidance in the initial formation of the Council. The Travel and Tourism Division may also aid the Council in developing a visitor's guide for the region. The Regional Tourism Council needs to be formed within the next year.

Strategy 7: Implementation of Lodging Tax

Lodging tax implementation is vital because its revenue is used for tourism promotion. Implementation of the tax may only be feasible for certain counties, as the 2% tax may require a moderate number of rooms in order to generate a significant amount of revenue for tourism promotion. Counties having twelve or more rooms need to be targeted for implementing the tax. The counties include Sherman, Howard, and Valley.

The Travel and Tourism Division of the DED may aid in the formation of Visitor's Committees, which needs to be in place in each of the targeted three counties before a tax may be implemented. The Regional Tourism Council may be involved in the appropriation of the lodging tax revenue for regional tourism promotion. Each of the three targeted counties may introduce the lodging tax by 1992.

Conclusion

In addition to the seven strategies for tourism and recreation that were recommended for implementation in the region, the following other strategies may also be considered:

- 1.) Promotion of sport fishing opportunities in the region.
- 2.) Promotion of hunting contests such as the one-box pheasant hunt.
- 3.) Promotional contests that provides free travel, hotel accommodations, and/or meals to contestant winners. Such contests may be sponsored by the CNGLA or a local radio station.
- 4.) Utilizing the Sandhills area to implement and promote sporting events. Such events may include a 10 kilometer/6.2 mile run held during the summer and tobogganing, sledding, or even cross country ski instruction held during the winter months.
- 5.) Implementation of a dude ranch that may appeal to families and urban tourists.
- 6.) Organization and coordination of craft fairs throughout the CNGLA region.
- 7.) Implementation of a "Wellness Program" with communities, schools, and businesses or any other institution competing for the greatest health improvement. Such health exercise may include miles walked, ran, or biked. Other elements of the program may include improvement in blood pressure, cholesterol level, and weight reduction.

The strategies for tourism and recreation have a bearing on the strategies identified for economic development, housing and human services, and solid waste. As tourism and recreation opportunities increase, the number of visitors to the CNGLA region may also increase. When this occurs, a greater number of employment opportunities may become available which, in turn, may enhance economic development in the region. The role of the Housing and Human Services in the tourism strategies is to provide educational workshops for tourism-related improvement programs, such as hospitality improvement. The relationship between tourism and solid waste is that an increased number of tourists leads to increased generation of solid waste. Development strategies for the CNGLA region must be a cooperative effort between the tourism, economic development, housing and human services, and solid waste sectors.

The Plan for Solid Waste Management and Disposal

The management of solid waste has come forward as one of the major environmental issues of this decade. Forth coming EPA regulations are likely to radically alter the methods of solid waste management in the delineated region. The following strategies may provide the framework for managing solid waste in the delineated region.

Strategy 1: Formation of a Lead Agency to Facilitate Start-up of Solid Waste Programs

The primary focus of the lead agency is to act as a facilitator to initiate the process of communication between the region and the agencies concerned with solid waste management. The lead agency may coordinate loans and financing of start-up businesses, and promote educational programs concerning solid waste.

The CNGLA may seek representation from the following agencies for constituting the lead agency: the Nebraska Department of Environmental Control(NDEC), Natural Resource Districts, local governments, state government, civic associations or groups, or private individuals or groups.

The formation of a lead agency would directly support the three main objectives identified by CNGLA. These

three objectives are:

1. **Identification of the appropriate means for solid waste management.**

The appropriate means may vary according to the physical site location within the region. Whereas a landfill may be appropriate in one area, an incineration facility may be appropriate in another area. A resource recovery facility may be desirable if a high volume of solid waste material is to be sustained. All of these strategies, possibly in combination, may be appropriate means of managing and disposing of solid waste.

2. **Improve awareness of environmental impacts of solid waste through improved education.**

This encompasses air quality, ground water quality, surface water quality, and land issues. Of particular concern is the leaching of undesirable gases and/or chemicals from landfills, causing surface or ground water contamination.

3. **Promote job potentials of solid waste.**

Many primary and secondary employment possibilities may

be created within the context of a solid waste disposal facility. This may include jobs in collection, processing, or regulating of solid waste. The types of jobs are dependent upon the type of system used for collection, and the type of facility used for disposal.

Strategy 2: Business Entrepreneurship

To encourage growth, financing needs to be available in the form of loans and grants. Two such financing programs that are of particular interest to solid waste management are the Small Business Energy Loan, and the Farmers Home Administration Loan (FmHA).

The Small Business Energy Loan applies towards construction, start-up, conversion, and/or equipment acquisition costs of a business involved with specific energy measures. The limit is \$350,000 on direct loans and \$750,000 under the guarantee program. The repayment of these loans may be up to 25 years. This may apply more towards recycling or resource recovery.

The FmHA loan may provide up to twenty million dollars, with a maximum repayment term of 30 years, for approved projects. Both programs give priority to rural areas with less concentrated population bases.

This strategy and the associated programs work to satisfy the objective of promoting the job potential of solid waste by providing the means to create both primary and secondary jobs. Pri-

mary jobs are directly related to the operation of the facility whereas secondary jobs may be related to the type of facility. If a resource recovery facility were to be selected, many employment possibilities may be created in the areas of recycling metals (both ferrous metals and non-ferrous metals), glass, and paper.

Strategy 3: Promotion of Education on the Impacts of Solid Waste

This strategy may be accomplished through conducting community awareness workshops and classroom seminars. These types of workshops or seminars may be conducted at the various levels within the school system and also at the community level.

Awareness of the issues is often the first step towards increasing the level of participation, or community involvement, in a project. This type of educational awareness satisfies the objective of improving awareness of environmental impacts of solid waste through greater awareness of the issues, their possible impacts on the environment, and the quality of life.

Strategy 4: Form a Regional Solid Waste Compact

A regional compact may provide greater influence than individual local governments or agencies when lobbying for state funds or research grants for solid waste management. The compact may also serve to oversee the start-up

activities towards formation of a solid waste management plan.

Growing concerns about solid waste disposal and management have generated several recent legislative actions dictating how state and local governments need to deal with solid waste issues.

In August 1988 the Environmental Protection Agency (EPA) sponsored a proposed rule to revise the classification and disposal practices of solid waste facilities. The proposed rule defines in more stringent details what can and can not be placed in landfills by establishing a list of targeted elements known to cause adverse environmental effects. It also sets up a better management system for disposal sites. Under the proposed rule, more restrictive guidelines are being imposed on all sites, but extreme importance is placed on record keeping, testing of environmental impacts of elements in the landfill, and monitoring possible adverse effects of the contents for 30 years after the landfill closing. The criteria established by the proposed rule may determine if a site may be expanded, closed, or relocated, and appears to be dependent on the results of engineering studies, testing, and monitoring.

Solid waste disposal is a growing concern in Nebraska. With more stringent rules placed on disposal operations, record keeping, and monitoring, many smaller communities may soon start to feel the financial burdens associated with attempting to maintain federal compliance. The eight counties that make up the Central Nebraska

Great Lakes Association (CNGLA) are no exception.

In response to new EPA guidelines, Legislative Bill 163 was introduced in Nebraska in 1989 as enabling legislation for governmental subdivisions to set up, operate, and manage solid waste disposal sites. A primary goal of this legislation is to reduce the amount of solid waste going into landfills by 25%. Recycling, waste recovery, and encouragement of research for alternate waste management options are identified as the most suitable means to lessen the impacts of solid waste. Because of the great expense of monitoring, testing, and record keeping, the Waste Reduction and Recycling Incentive Fund has been developed as a mechanism to encourage waste reduction and to help municipalities and government subdivisions in obtaining technical assistance and grants for waste facility operation.

Administration of the fund has been charged to the Nebraska Department of Environmental Control (NDEC). The rules and regulations pertaining to solid waste management were developed under NDEC title 132, which also establishes the criteria for administering grants.

The following hierarchy of criteria are developed to give priority to favored programs:

1. volume reduction at the source;
2. recycling, reuse, and vegetative waste composting;
3. incineration with energy resource recovery;

4. incineration for volume reduction; and
5. land disposal.

CNGLA has targeted solid waste as a concern, and Title 132 has many components which may be attractive as a way of deferring some of the costs of monitoring, testing, and record keeping by developing a regional solid waste management plan. The development of a regional management plan may spread the costs among several municipalities instead of just one. Title 132 outlines how governmental subdivisions and municipalities may group together to form a solid waste compact, and how the compact may develop, propose, review, and amend, a regional solid waste management plan.

The regional solid waste compact must maintain a management committee with representation from all governmental subdivisions within its jurisdiction, and may elect a chairman, vice chairman, and secretary from the body of representatives.

The regional solid waste management plan developed by the compact, needs to contain the following requirements:

- 1) Delineate the areas of jurisdiction of existing political subdivisions, locate existing disposal sites, and identify where future sites may be located;
- 2) provide an orderly extension of a solid waste management plan for the whole area that does not contribute to pollution of the air, water, or land, or create a public nuisance;

sance;

- 3) take into consideration all city or village, and county ordinances or resolutions and comprehensive plans affecting the development, use, and protection of the environment;
- 4) define responsibilities of each local governmental subdivision in the region;
- 5) prohibit new open dumps in the region and insure that all waste is disposed in an environmentally sound manner;
- 6) provide for environmentally accepted closing or up grading of all existing open dumps;
- 7) provide local regulatory powers as may be necessary to implement the plan;
- 8) provide for resource recovery, unless substantial reasons are given and approved by the DEC;
- 9) insure that no local government is prohibited from entering into long term contracts for the supply of solid waste to a resource recovery facility.

The NDEC is responsible for administering all licenses, applications, and grant approvals, as well as provide technical assistance, review plans, designs, and relevant data for construction and siting locations based on the jurisdiction and participants in the compact.

Under Title 132 all persons, part-

nerships, industries, governmental subdivisions and agencies, may be allowed to operate a licensed solid waste facility, provided that all EPA guidelines and standards are met and continually complied with. However, the regional management plan needs to provide and/or include all of these situations.

Future funding of the regional solid waste plan may come from user fees and disposal tonnage, as well as revenues generated from the recovery of recyclable wastes. Also, the Department of Environmental Control may be approached for grant support for start-up, operation costs, and up-grade of facilities. This grant support may be funded from the \$1 tax on all new tires sold in the state.

Due to the widely dispersed population centers in the region, the high costs associated with the management of solid waste facilities, the high degree of technical knowledge, and the cost of testing and monitoring, CNGLA may want to consider forming a solid waste compact. Through the compact, this region may lobby for a regional solid waste management program with the assistance of the NDEC. This program would have a great deal of positive impact on cost sharing in the region as well as complying with recent state regulations. A regional solid waste plan may benefit the CNGLA region by, sharing costs, and protecting the environment, as well as the overall purpose of proper management of solid waste.

Conclusions

The four programs outlined above represent a logical and the complex and multi-faceted issue of solid waste management. Other alternatives exist and may need to be explored beyond the scope of this study. The ideas and programs contained herein provide an overview of the initial approaches that may be taken. The programs, as indicated, serve to satisfy the objectives and issues of concern as indicated by the community leaders within the CNGLA region.

It should be noted that proper solid waste management may positively effect other areas of concern such as quality of life and economic diversification. The interrelationship among these areas is an important consideration when developing a regional plan.

Chapter 11

The Implementation Plan

The CNGLA is an organization composed of citizens in the region concerned about the maintenance and enhancement of their quality of life. These individuals have identified many common problems and prospects in their communities that may best be addressed on a regional basis. The CNGLA does not have the formal authority or the financial resources to launch most of the programs and projects proposed in this study. The CNGLA however, does have the leadership initiative and the communication lines to serve as a forum for discussion of regional issues. It may identify and bring together the relevant agencies and individuals who have formal authority to act on a given issue, to discuss and/or take action on a regional basis. The CNGLA has the opportunity to play a key role in setting the agenda of decision-makers in the region.

This study has identified three corridors in the region where growth is most likely to occur: Highway 2, Highway 11, and Highway 281. Several communities and jurisdictions reside along these corridors. While these corridors do have common interests that can be addressed by the CNGLA, they also have their own unique concerns. Booster groups such as the Nestbuilders or the Highway 281 Association may provide the forum within their respective corridors for those with authority and jurisdiction to meet and make decisions for the benefit of the entire corridor.

The CNGLA and its corridor organizations may unite with public agencies to address the critical problems and

promote the prospects of the area. Through this "public/private partnership" the CNGLA and its corridor organizations may provide the opportunities for decision-makers to act in ways that may best enhance the quality of life throughout the region.

Different agencies and organizations need to be involved in decision making for different issues. The following table (Table 11-1) may assist the CNGLA in the identification of the most appropriate agencies whose meaningful participation in forum discussions and decision making may be critical to the implementation efforts. Representation from each of the agencies under the column "Participants" may be solicited to address the issues relating to the "Program" under a given "Subject." It is also recommended that citizen representation must be included, using the proposed development corridors as the geographic means for selection.

Table 11-1
Membership of Forums for Program Development and Coordination

Subject	Program	Participants*
Economic Development	Communication and Transportation Access	Nebraska Dept. of Roads/County Road Depts./Chambers of Commerce Business Leaders/Telephone Companies/University of Nebraska Extension Service.
	Facilities and Utilities Capital Formation	Cooperative Business Association/ Industry and Business Leaders/ Utility Companies/Nebraska Dept. of Economic Development (DED): Community and Rural Development Division/ Economic Development Administration (Fed)/Chambers of Commerce/Nestbuilders/Civic Clubs/Hwy. Booster Assoc.
	Market Research	Nebraska Institute of Agricultural and Natural Resources/ Chambers of Commerce/Civic Clubs
	Cottage Industries	Center for Rural Affairs/DED
	Bed and Breakfasts	DED Travel and Tourism Division, Bed and Breakfast Assoc./Home Based Business Assoc.
Health, Human Services, and Housing	Public School and Career Enhancement	School Districts/PTAs/Chambers of Commerce/Civic Clubs/ Educational Service Units
	College Return Investment	School Districts/PTAs/Financial Institutions/Civic Clubs
	Coordination/Sharing of Educational Resources	School Districts
	Health Care Professional Recruitment Campaign	Hospitals and Clinics
	Financial Incentives to Potential Health Care Professionals	City Councils/County Boards of Supervisors/Nebraska Dept. of Health: Rural Services Division
	Health, Human Services, Public Safety Education	Health Care Providers/Police Depts./Sheriff Depts./Fire Depts./School Districts
	Satellite Health Care Clinics	Health Care Providers/Chambers of Commerce/Nestbuilders/Civic Clubs/Good Samaritan Health System
	Phone Referral Hotlines	Health Care Providers/Lincoln General Hospital's Ask-A-Nurse/ Emergency Service Providers
	Health, Human Services, Public Safety Services Awareness	Nebraska Dept. of Roads/Health Care Providers/City Councils/ County Boards of Supervisors

Subject	Program	Participants*
Health, Human Services, and Housing	Client/Patient Transfer	Health Care Providers/City Councils/County Boards of Supervisors/Civic Clubs
	Post-Secondary Adult Continuing Studies	Kearney State College/Nebraska University/NETV Network
	CNGLA Hospitality Program	DED Travel and Tourism Division/Lodging Providers/Retail Businesses/Chambers of Commerce
	Cooperative Economics Education	Blooming Prairie Warehouse/Dept. of Agriculture
	Centralized Housing Agency	U.S. Housing and Urban Development Dept. Nebraska Office
	Encourage Local Lenders to Support Housing	Local Financial Institutions/HUD/Community Development Block Grant
	Non Traditional Housing Funding Sources	Church and Civic Organizations Habitat for Humanity
Health, Human Services, and Housing	Housing Rehabilitation	Church and Civic organizations/Vocational Education Classes/Construction Industry/Community Development Block Grants
	Downtown Beautification	Chambers of Commerce/Downtown Business Assns./City Councils/Vocational Education Classes/Church and Civic Organizations
Tourism Development	Road Improvement	Nebraska Dept. of Roads
	Increased signage	Nebraska Dept. of Roads/Nebraska Games and Parks Commission
	Increase Accomodations	DED Travel and Tourism Division/Lodging Industry/Bed and Breakfast Assoc.
	Regional Tourism Council	DED Travel and Tourism Division/Chambers of Commerce/Lodging and Dining Establishments/County Supervisors
	Tourism Shuttle Service Regional Fair	Regional Tourism Council/DED Travel and Tourism Division/Municipalities/Tourist and Recreational Attractions
	Tourism Marketing	Regional Media Outlets/Regional Tourism Council/DED Travel and Tourism Division
	Enhance Private Development Around Recreational Areas	Regional Tourism Council/NDED Travel and Tourism Division/Recreational Facility Owners/Games and Parks Commission
	Lodging Tax	DED Travel and Tourism Division/Regional Tourism Council/Lodging Industry/County Boards of Supervisors

Subject	Program	Participants*
Solid Waste Management	Lead Agency for Solid Waste Management	Nebraska Dept. of Environmental Control (DEC)/Natural Resource Districts/Local Governments/Civic Associations
	Business Entrepreneurship	Small Business Energy Loan/Farmers Home Administration Loan
	Education on Impacts of Solid Waste	School Districts/DEC
	Solid Waste Compact	Environmental Protection Agency/NDEC/County Boards of Supervisors/City Councils

*Participation by citizens representing each constituency along a relevant development corridor may also be identified with each forum to serve as convener/secretary of the forum

It is very evident from the above that several forums will need to be created to cover the scope of activities in the plan. It is recommended that key programs be identified by the CNGLA and appropriate forums created on a prioritized basis over a sequence of phases, so that focussed action may be initiated and sustained. New programs may be added as earlier programs are implemented and phased out.

Once these forums are put in place, the responsibility for implementation rests in the hands of the agencies represented in the forum, who have the authority and the resources to make and carry out decisions. Since CNGLA representation is mandatory on each of the forums, there is always a representation of the regional interest, as well as monitoring of progress in a given program area. The CNGLA then assumes the role of a steering group for services and coordination of various programs based on the reports from the different forums. This organization of distributed responsibility and authority may best serve the regional interest in the most effective, functional and targeted manner over the duration of plan implementation.

Chapter 12

Conclusion

This document is the final product of a planning effort launched by the Central Nebraska Great Lakes Association and its constituents. The study was initiated in September 1990 by members of the Regional Planning class in the Graduate Program of Community and Regional Planning at the University of Nebraska. The study commenced with a site visit followed by data collection in the context of analysis and assessment of four functional subsystems: the physical-environmental, social-demographic, economic financial, and political. Several problems and issues were identified. Appropriate goals were formulated to address the problems and issues, and they were placed into five categories: tourism, the disposal of solid waste, economic development, health and human services, and plan implementation. Sectoral plans for each of these areas were formulated and presented. This document capsulates the work undertaken in the preparation of these plans.

The five elements of the proposed plan constitute key ideas that have been logically deduced as likely solutions to some of the problems and issues that the region has to negotiate.

The ideas and recommendations made in this report do not represent the entirety of ideas and recommendations that are possible. Rather, they are several suggestions that are based on detailed research which are intended primarily for initiating action. They also are intended to serve the CNGLA as a model for orienting the lines of thinking,

problem perception and articulation, goals and objectives formulation and creative problem solving - in essence, the planning process.

The scope of the model may be extended, expanded, or modified to cover several areas that have been identified in this report, but not expounded upon. As development action is implemented and the plan unfolds, the CNGLA may continue to play a lead role in monitoring the process of development and coordinating decisions that may influence the short and long term futures of communities in their best interest.

Appendices

Appendix A

The Gravity Model

In physics, Newton's Law of Gravitation States that the attraction between two bodies is a product of their masses divided by the square of the distance between them. In formula form, this may be written as:

$$F = K (M1 \times M2) / D \times D \text{ where:}$$

F = force of attraction between two objects

K = constant

M1 = mass of body 1

M2 = mass of body 2

D = distance between the two objects

For social sciences purposes, mass is replaced by population, reflecting the fact that the more people there are in a community, the greater the level of interaction there will be with another community. Thus the formula may be rewritten as:

$$I = K (P1 \times P2) / D \times D$$

I = level of interaction between two cities

K = constant

P1 = population of city 1

P2 = population of city 2

D = distance between the two cities

Appendix B

TRADE AREA ANALYSIS

PLEASE NOTE: THE DISTANCE OF THE LIMIT OF THE GOOD OR SERVICE IS FROM THE CENTRAL PLACE IF IT (THE DISTANCE) IS TO A LARGER PLACE. IF THE DISTANCE IS TO A SMALLER PLACE THEN THE DISTANCE IS FROM THE SMALLER PLACE TO THE CENTRAL PLACE IN QUESTION.

CENTER OF TRADE AREA	POPULATION	DISTANCE	LIMIT OF GOOD OR SERVICE
BROKEN BOW			
BROKEN BOW	3840	X	
GRAND ISLAND	38900	80	19.12594974
KEARNEY	23000	60	17.40460992
NORTH PLATTE	22670	70	20.40969889
LEXINGTON	6480	46	20.0083678
ORD	2650	50	22.68841706
AINSWORTH	1870	100	41.10159776
BURWELL	1200	50	17.92850868
LOUP CITY	1180	36	12.83902851
ORD			
ORD	2650	X	
GRAND ISLAND	38900	64	13.24681419
KEARNEY	23000	84	21.28707814
BROKEN BOW	3840	57	25.86479545
BURWELL	1200	15	6.033677069
LOUP CITY	1180	14	5.603167123
ST. PAUL	1180	41	16.40927515
GREELEY	580	30	9.561710738
TAYLOR	210	28	6.150696611
ERICSON	120	23	4.035589884
BURWELL			
BURWELL	1200	X	
BROKEN BOW	3840	50	17.92850868
ORD	2650	42	16.89429579
ATKINSON	1340	57	27.71396948
ERICSON	120	23	5.525820687
BREWSTER	30	44	6.007190618
ST. PAUL			
ST. PAUL	1880	X	
CENTRAL CITY	2840	30	13.45846557
LOUP CITY	1180	28	12.37717684
GREELEY	580	24	8.570255974
DANNEBROG	370	12	3.687626849

Class 3 Trade Area Analysis**KEARNEY**

KEARNEY	23000	X	
GRAND ISLAND	38900	43	18.69157598
NORTH PLATTE	22670	95	47.3283862
HOLDREDGE	5570	34	11.21350199
BROKEN BOW	3840	60	17.40460992
MINDEN	2670	21	5.336720062
LOUP CITY	1180	47	8.679720716

GRAND ISLAND

GRAND ISLAND	38900	X	
KEARNEY	23000	43	18.69157598
HASTINGS	22490	26	11.23030357
COLUMBUS	19220	64	26.41735144
YORK	7940	44	13.69256113
BROKEN BOW	3840	80	19.12594974
BURWELL	1200	84	12.54936904
LOUP CITY	1180	43	6.378297016
BARTLETT	150	70	4.092650648

Pages 151–160 do not exist

Appendix C

Sheet C-1

CNGLA VERSUS STATE 1970

SIC	NUMBER EMPLOYED CNGLA	NUMBER EMPLOYED STATE	% EMPLOYED CNGLA	% EMPLOYED STATE	DIFFERENCE
AGR	6300	89891	50.64	15.76	34.88
MAN	610	85000	4.90	14.90	-10.00
CON	320	24600	2.57	4.31	-1.74
TRN	220	37200	1.77	6.52	-4.75
TRD	1790	120800	14.39	21.18	-6.79
FIN	220	29000	1.77	5.08	-3.32
SER	1000	82900	8.04	14.53	-6.50
GOV	1980	101000	15.92	17.71	-1.79
TOTAL	12440	570391			

CNGLA VERSUS STATE 1980

SIC	NUMBER EMPLOYED CNGLA	NUMBER EMPLOYED STATE	% EMPLOYED CNGLA	% EMPLOYED STATE	DIFFERENCE
AGR	4963	83660	39.22	11.76	27.46
MAN	641	96408	5.07	13.55	-8.49
CON	435	30858	3.44	4.34	-0.90
TRN	205	47783	1.62	6.72	-5.10
TRD	2606	163633	20.59	23.01	-2.41
FIN	355	42058	2.81	5.91	-3.11
SER	864	115975	6.83	16.31	-9.48
GOV	2585	130867	20.43	18.40	2.03
TOTAL	12654	711242			

CNGLA VERSUS STATE THROUGH JULY 1990

SIC	NUMBER EMPLOYED CNGLA	NUMBER EMPLOYED STATE	% EMPLOYED CNGLA	% EMPLOYED STATE	DIFFERENCE
AGR	7071	101034	45.92	12.31	33.62
MAN	584	95906	3.79	11.68	-7.89
CON	275	26121	1.79	3.18	-1.40
TRN	232	46602	1.51	5.68	-4.17
TRD	2408	185128	15.64	22.55	-6.91
FIN	359	48446	2.33	5.90	-3.57
SER	1453	172179	9.44	20.97	-11.53
GOV	3015	145634	19.58	17.74	1.84
TOTAL	15397	821050			

Sheet C-2

CUSTER COUNTY 1970

SIC	NUMBER EMPLOYED IN CUSTER COUNTY	NUMBER EMPLOYED IN CUSTER CNGLA	% EMPLOYED IN CUSTER COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	2150	6300	41.67	50.64	-8.98
MAN	480	610	9.30	4.90	4.40
CON	190	320	3.68	2.57	1.11
TRN	100	220	1.94	1.77	0.17
TRD	840	1790	16.28	14.39	1.89
FIN	110	220	2.13	1.77	0.36
SER	470	1000	9.11	8.04	1.07
GOV	820	1980	15.89	15.92	-0.02
TOTAL	5160	12440			

CUSTER COUNTY 1980

SIC	NUMBER EMPLOYED IN CUSTER COUNTY	NUMBER EMPLOYED IN CUSTER CNGLA	% EMPLOYED IN CUSTER COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	1679	4963	32.82	39.22	-6.40
MAN	493	641	9.64	5.07	4.57
CON	185	435	3.62	3.44	0.18
TRN	100	205	1.95	1.62	0.33
TRD	1063	2606	20.78	20.59	0.18
FIN	162	355	3.17	2.81	0.36
SER	536	864	10.48	6.83	3.65
GOV	898	2585	17.55	20.43	-2.88
TOTAL	5116	12654			

CUSTER COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN CUSTER COUNTY	NUMBER EMPLOYED IN CUSTER CNGLA	% EMPLOYED IN CUSTER COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	2314	7071	40.38	45.92	-5.54
MAN	455	584	7.94	3.79	4.15
CON	127	275	2.22	1.79	0.43
TRN	118	232	2.06	1.51	0.55
TRD	927	2408	16.18	15.64	0.54
FIN	127	359	2.22	2.33	-0.12
SER	711	1453	12.41	9.44	2.97
GOV	951	3015	16.60	19.58	-2.98
TOTAL	5730	15397			

Sheet C-3

GARFIELD COUNTY 1970

SIC	NUMBER EMPLOYED IN GARFIEL COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GARFIEL COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	350	6300	43.37	50.64	-7.27
MAN	50	610	6.02	4.90	1.12
CON	20	320	2.41	2.57	-0.16
TRN	20	220	2.41	1.77	0.64
TRD	110	1790	13.25	14.39	-1.14
FIN	10	220	1.20	1.77	-0.56
SER	130	1000	15.66	8.04	7.62
GOV	130	1980	15.66	15.92	-0.25
TOTAL	830	12440			

GARFIELD COUNTY 1980

SIC	NUMBER EMPLOYED IN GARFIEL COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GARFIEL COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	291	4963	27.71	39.22	-11.51
MAN	58	641	5.52	5.07	0.46
CON	47	435	4.48	3.44	1.04
TRN	20	205	1.90	1.62	0.28
TRD	171	2606	16.29	20.59	-4.31
FIN	NA	355	NA	NA	NA
SER	NA	864	NA	NA	NA
GOV	137	2585	13.05	20.43	-7.38
TOTAL	1050	12654			

GARFIELD COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN GARFIEL COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GARFIEL COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	349	7071	34.73	45.92	-11.20
MAN	62	584	6.17	3.79	2.38
CON	27	275	2.69	1.79	0.90
TRN	13	232	1.29	1.51	-0.21
TRD	224	2408	22.29	15.64	6.65
FIN	23	359	2.29	2.33	-0.04
SER	162	1453	16.12	9.44	6.68
GOV	145	3015	14.43	19.58	-5.15
TOTAL	1005	15397			

Sheet C-4

GREELEY COUNTY 1970

SIC	NUMBER EMPLOYED IN GREELEY COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GREELEY COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	670	6300	42.95	50.64	-7.69
MAN	NA	610	NA	NA	NA
CON	NA	320	NA	NA	NA
TRN	NA	220	NA	NA	NA
TRD	NA	1790	NA	NA	NA
FIN	NA	220	NA	NA	NA
SER	NA	1000	NA	NA	NA
GOV	NA	1980	NA	NA	NA
TOTAL	1560	12440			

GREELEY COUNTY 1980

SIC	NUMBER EMPLOYED IN GREELEY COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GREELEY COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	605	4963	46.15	39.22	6.93
MAN	14	641	1.07	5.07	-4.00
CON	25	435	1.91	3.44	-1.53
TRN	NA	205	NA	NA	NA
TRD	200	2606	15.26	20.59	-5.34
FIN	36	355	2.75	2.81	-0.06
SER	NA	864	NA	NA	NA
GOV	274	2585	20.90	20.43	0.47
TOTAL	1311	12654			

GREELEY COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN GREELEY COUNTY	NUMBER EMPLOYED IN CNGLA	% EMPLOYED IN GREELEY COUNTY	% EMPLOYED IN CNGLA	DIFFERENCE
AGR	548	7071	42.48	45.92	-3.44
MAN	14	584	1.09	3.79	-2.71
CON	24	275	1.86	1.79	0.07
TRN	8	232	0.62	1.51	-0.89
TRD	200	2408	15.50	15.64	-0.14
FIN	36	359	2.79	2.33	0.46
SER	165	1453	12.79	9.44	3.35
GOV	295	3015	22.87	19.58	3.29
TOTAL	1290	15397			

Sheet C-5

HOWARD COUNTY 1970

SIC	NUMBER EMPLOYED IN HOWARD COUNTY	NUMBER EMPLOYED IN HOWARD CNGLA	% EMPLOYED IN HOWARD COUNTY	% EMPLOYED IN HOWARD CNGLA	DIFFERENCE
AGR	1000	6300	51.28	50.64	0.64
MAN	0	610	0.00	4.90	-4.90
CON	30	320	1.54	2.57	-1.03
TRN	20	220	1.03	1.77	-0.74
TRD	340	1790	17.44	14.39	3.05
FIN	40	220	2.05	1.77	0.28
SER	140	1000	7.18	8.04	-0.86
GOV	380	1980	19.49	15.92	3.57
TOTAL	1950	12440			

HOWARD COUNTY 1980

SIC	NUMBER EMPLOYED IN HOWARD COUNTY	NUMBER EMPLOYED IN HOWARD CNGLA	% EMPLOYED IN HOWARD COUNTY	% EMPLOYED IN HOWARD CNGLA	DIFFERENCE
AGR	605	4963	35.09	39.22	-4.13
MAN	12	641	0.70	5.07	-4.37
CON	81	435	4.70	3.44	1.26
TRN	20	205	1.16	1.62	-0.46
TRD	441	2606	25.58	20.59	4.99
FIN	60	355	3.48	2.81	0.67
SER	149	864	8.64	6.83	1.81
GOV	356	2585	20.65	20.43	0.22
TOTAL	1724	12654			

HOWARD COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN HOWARD COUNTY	NUMBER EMPLOYED IN HOWARD CNGLA	% EMPLOYED IN HOWARD COUNTY	% EMPLOYED IN HOWARD CNGLA	DIFFERENCE
AGR	1402	7071	57.25	45.92	11.32
MAN	7	584	0.29	3.79	-3.51
CON	44	275	1.80	1.79	0.01
TRN	20	232	0.82	1.51	-0.69
TRD	306	2408	12.49	15.64	-3.14
FIN	44	359	1.80	2.33	-0.53
SER	205	1453	8.37	9.44	-1.07
GOV	421	3015	17.19	19.58	-2.39
TOTAL	2449	15397			

Sheet C-6

LOUP COUNTY 1970

SIC	NUMBER EMPLOYED IN LOUP COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN LOUP COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	210	6300	58.01	50.64	7.37
MAN	NA	610	NA	NA	NA
CON	NA	320	NA	NA	NA
TRN	NA	220	NA	NA	NA
TRD	NA	1790	NA	NA	NA
FIN	NA	220	NA	NA	NA
SER	NA	1000	NA	NA	NA
GOV	NA	1980	NA	NA	NA
TOTAL	362	12440			

LOUP COUNTY 1980

SIC	NUMBER EMPLOYED IN LOUP COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN LOUP COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	178	4963	43.63	39.22	4.41
MAN	0	641	0.00	5.07	-5.07
CON	NA	435	NA	NA	NA
TRN	NA	205	NA	NA	NA
TRD	17	2606	4.17	20.59	-16.43
FIN	NA	355	NA	NA	NA
SER	NA	864	NA	NA	NA
GOV	30	2585	7.35	20.43	-13.08
TOTAL	408	12654			

LOUP COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN LOUP COUNTY	NUMBER EMPLOYED CNGLA	% EMPLOYED IN LOUP COUNTY	% EMPLOYED CNGLA	DIFFERENCE
AGR	342	7071	85.50	45.92	39.58
MAN	NA	584	NA	NA	NA
CON	NA	275	NA	NA	NA
TRN	NA	232	NA	NA	NA
TRD	NA	2408	NA	NA	NA
FIN	NA	359	NA	NA	NA
SER	NA	1453	NA	NA	NA
GOV	28	3015	7.00	19.58	-12.58
TOTAL	400	15397			

Sheet C-7

SHERMAN COUNTY 1970

SIC	NUMBER EMPLOYED IN SHERMAN COUNTY	NUMBER EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	DIFFERENCE
AGR	770	6300	55.80	50.64	5.15
MAN	10	610	0.72	4.90	-4.18
CON	20	320	1.45	2.57	-1.12
TRN	30	220	2.17	1.77	0.41
TRD	170	1790	12.32	14.39	-2.07
FIN	20	220	1.45	1.77	-0.32
SER	120	1000	8.70	8.04	0.66
GOV	240	1980	17.39	15.92	1.47
TOTAL	1380	12440			

SHERMAN COUNTY 1980

SIC	NUMBER EMPLOYED IN SHERMAN COUNTY	NUMBER EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	DIFFERENCE
AGR	660	4963	41.43	39.22	2.21
MAN	30	641	1.88	5.07	-3.18
CON	20	435	1.26	3.44	-2.18
TRN	NA	205	NA	NA	NA
TRD	219	2606	13.75	20.59	-6.85
FIN	29	355	1.82	2.81	-0.98
SER	NA	864	NA	NA	NA
GOV	298	2585	18.71	20.43	-1.72
TOTAL	1593	12654			

SHERMAN COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN SHERMAN COUNTY	NUMBER EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	% EMPLOYED IN SHERMAN COUNTY	DIFFERENCE
AGR	679	7071	44.85	45.92	-1.08
MAN	NA	584	NA	NA	NA
CON	14	275	0.92	1.79	-0.86
TRN	NA	232	NA	NA	NA
TRD	181	2408	11.95	15.64	-3.68
FIN	45	359	2.97	2.33	0.64
SER	NA	1453	NA	NA	NA
GOV	386	3015	25.50	19.58	5.91
TOTAL	1514	15397			

Sheet C-8

WHEELER COUNTY 1970

SIC	NUMBER EMPLOYED IN WHEELER COUNTY	NUMBER EMPLOYED IN WHEELER CNGLA	% EMPLOYED IN WHEELER COUNTY	% EMPLOYED IN WHEELER CNGLA	DIFFERENCE
AGR	260	6300	59.09	50.64	8.45
MAN	NA	610	NA	NA	NA
CON	NA	320	NA	NA	NA
TRN	NA	220	NA	NA	NA
TRD	NA	1790	NA	NA	NA
FIN	NA	220	NA	NA	NA
SER	NA	1000	NA	NA	NA
GOV	NA	1980	NA	NA	NA
TOTAL	440	12440			

WHEELER COUNTY 1980

SIC	NUMBER EMPLOYED IN WHEELER COUNTY	NUMBER EMPLOYED IN WHEELER CNGLA	% EMPLOYED IN WHEELER COUNTY	% EMPLOYED IN WHEELER CNGLA	DIFFERENCE
AGR	248	4963	65.96	39.22	26.74
MAN	0	641	0.00	5.07	-5.07
CON	NA	435	NA	NA	NA
TRN	NA	205	NA	NA	NA
TRD	50	2606	13.30	20.59	-7.30
FIN	NA	355	NA	NA	NA
SER	NA	864	NA	NA	NA
GOV	61	2585	16.22	20.43	-4.20
TOTAL	376	12654			

WHEELER COUNTY THROUGH JULY 1990

SIC	NUMBER EMPLOYED IN WHEELER COUNTY	NUMBER EMPLOYED IN WHEELER CNGLA	% EMPLOYED IN WHEELER COUNTY	% EMPLOYED IN WHEELER CNGLA	DIFFERENCE
AGR	430	7071	70.61	45.92	24.68
MAN	NA	584	NA	NA	NA
CON	NA	275	NA	NA	NA
TRN	NA	232	NA	NA	NA
TRD	NA	2408	NA	NA	NA
FIN	NA	359	NA	NA	NA
SER	NA	1453	NA	NA	NA
GOV	119	3015	19.54	19.58	-0.04
TOTAL	609	15397			

Sheet C-9

VALLEY COUNTY 1970

SIC	NUMBER EMPLOYED IN VALLEY COUNTY	NUMBER EMPLOYED IN VALLEY CNGLA	% EMPLOYED IN VALLEY COUNTY	% EMPLOYED IN VALLEY CNGLA	DIFFERENCE
AGR	880	6300	44.44	50.64	-6.20
MAN	70	610	3.54	4.90	-1.37
CON	60	320	3.03	2.57	0.46
TRN	50	220	2.53	1.77	0.76
TRD	330	1790	16.67	14.39	2.28
FIN	40	220	2.02	1.77	0.25
SER	140	1000	7.07	8.04	-0.97
GOV	410	1980	20.71	15.92	4.79
TOTAL	1980	12440			

VALLEY COUNTY 1980

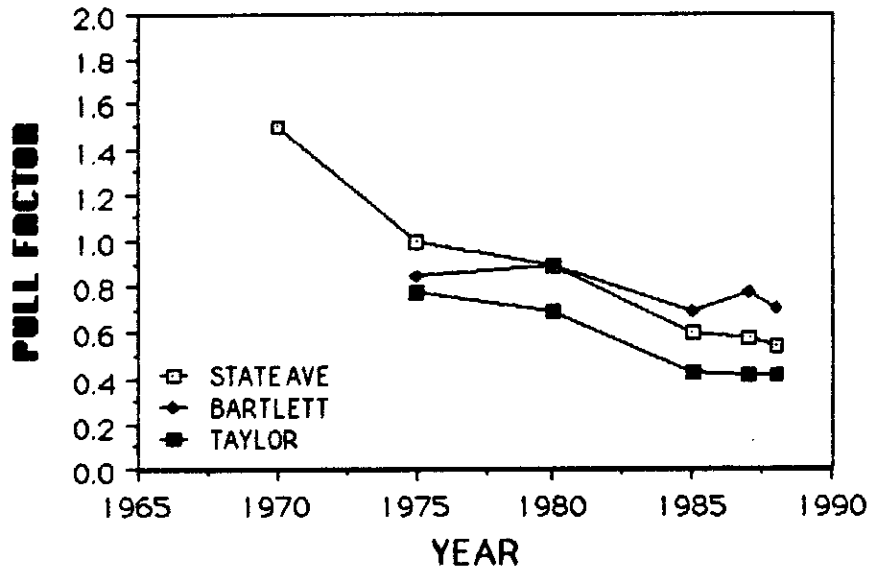
SIC	NUMBER EMPLOYED IN VALLEY COUNTY	NUMBER EMPLOYED IN VALLEY CNGLA	% EMPLOYED IN VALLEY COUNTY	% EMPLOYED IN VALLEY CNGLA	DIFFERENCE
AGR	697	4963	33.25	39.22	-5.97
MAN	34	641	1.62	5.07	-3.44
CON	77	435	3.67	3.44	0.24
TRN	65	205	3.10	1.62	1.48
TRD	445	2606	21.23	20.59	0.64
FIN	68	355	3.24	2.81	0.44
SER	179	864	8.54	6.83	1.71
GOV	531	2585	25.33	20.43	4.91
TOTAL	2096	12654			

VALLEY COUNTY THROUGH JULY 1990

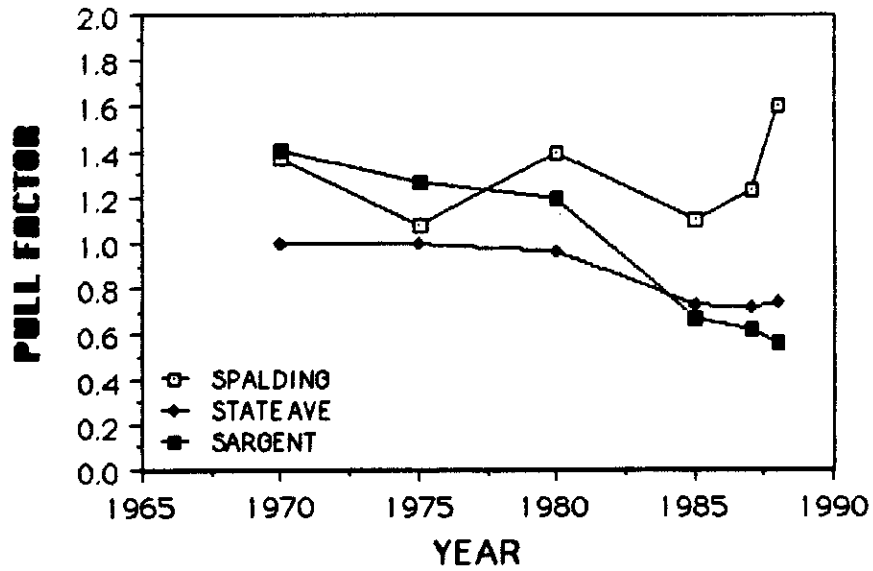
SIC	NUMBER EMPLOYED IN VALLEY COUNTY	NUMBER EMPLOYED IN VALLEY CNGLA	% EMPLOYED IN VALLEY COUNTY	% EMPLOYED IN VALLEY CNGLA	DIFFERENCE
AGR	1007	7071	37.31	45.92	-8.61
MAN	46	584	1.70	3.79	-2.09
CON	39	275	1.44	1.79	-0.34
TRN	73	232	2.70	1.51	1.20
TRD	570	2408	21.12	15.64	5.48
FIN	84	359	3.11	2.33	0.78
SER	210	1453	7.78	9.44	-1.66
GOV	670	3015	24.82	19.58	5.24
TOTAL	2699	15397			

PULL FACTORS BY SIZE OF COMMUNITY 1970 - 1988

PULL FACTOR: POP < 500

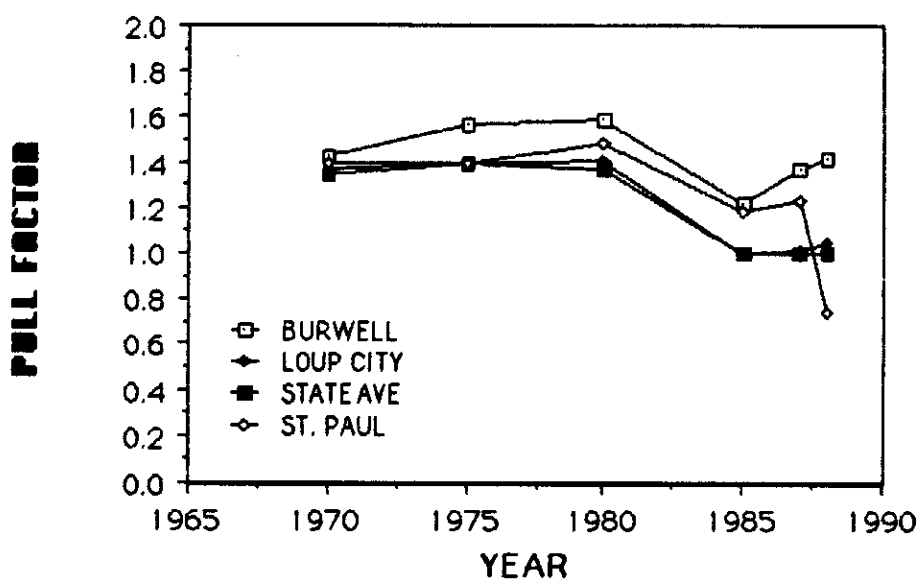


PULL FACTOR: POP 500-999

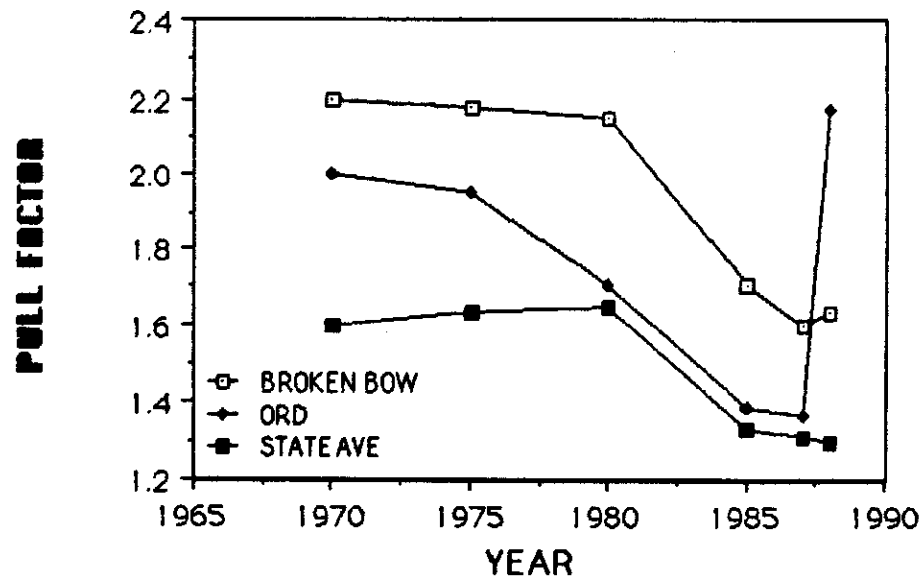


Source: Department of Agricultural Economics, Un-L

PULL FACTOR: POP 1000 TO 2499



PULL FACTOR: POP 2500 TO 4999



Page 176

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Pages 177–178

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Appendix D
Appendix E

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Appendix F

Gravel Pits

Sand

Gravel

Lakes

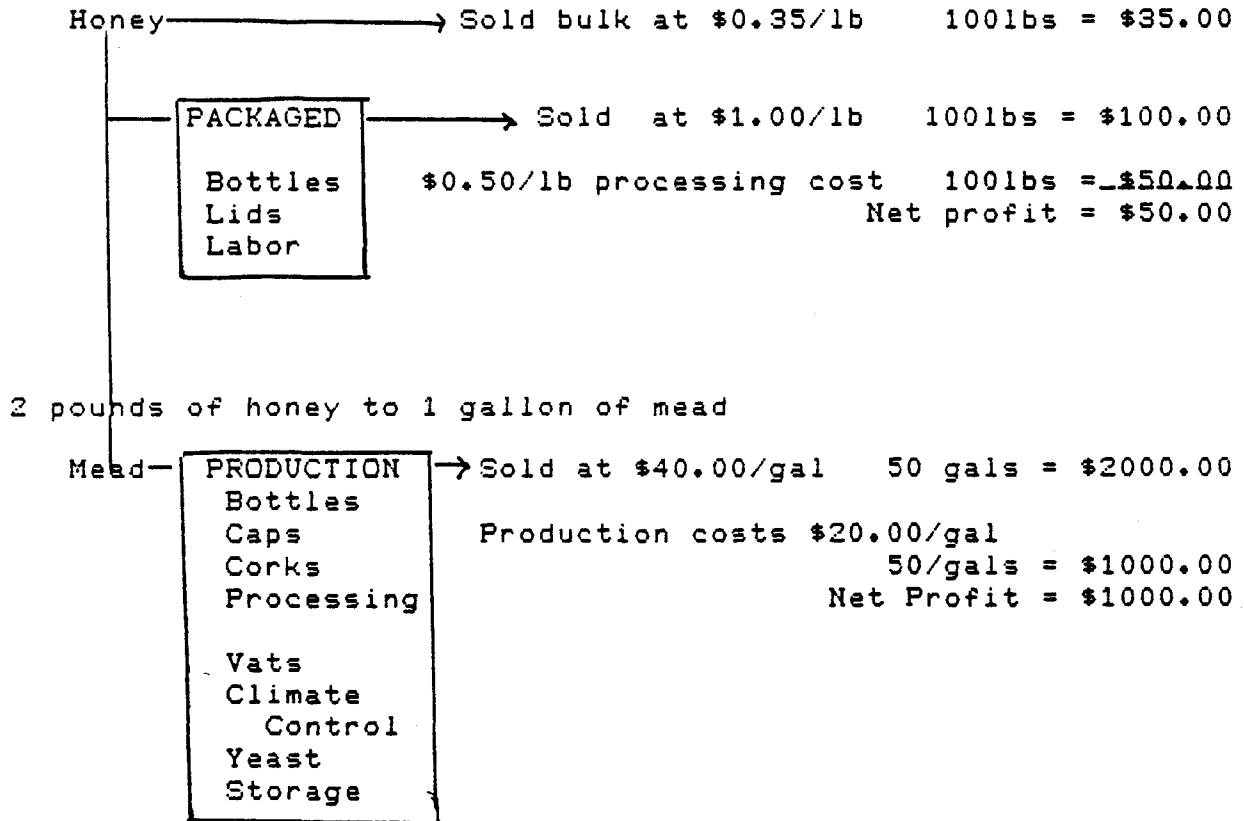
Sand

Gravel

Lakes

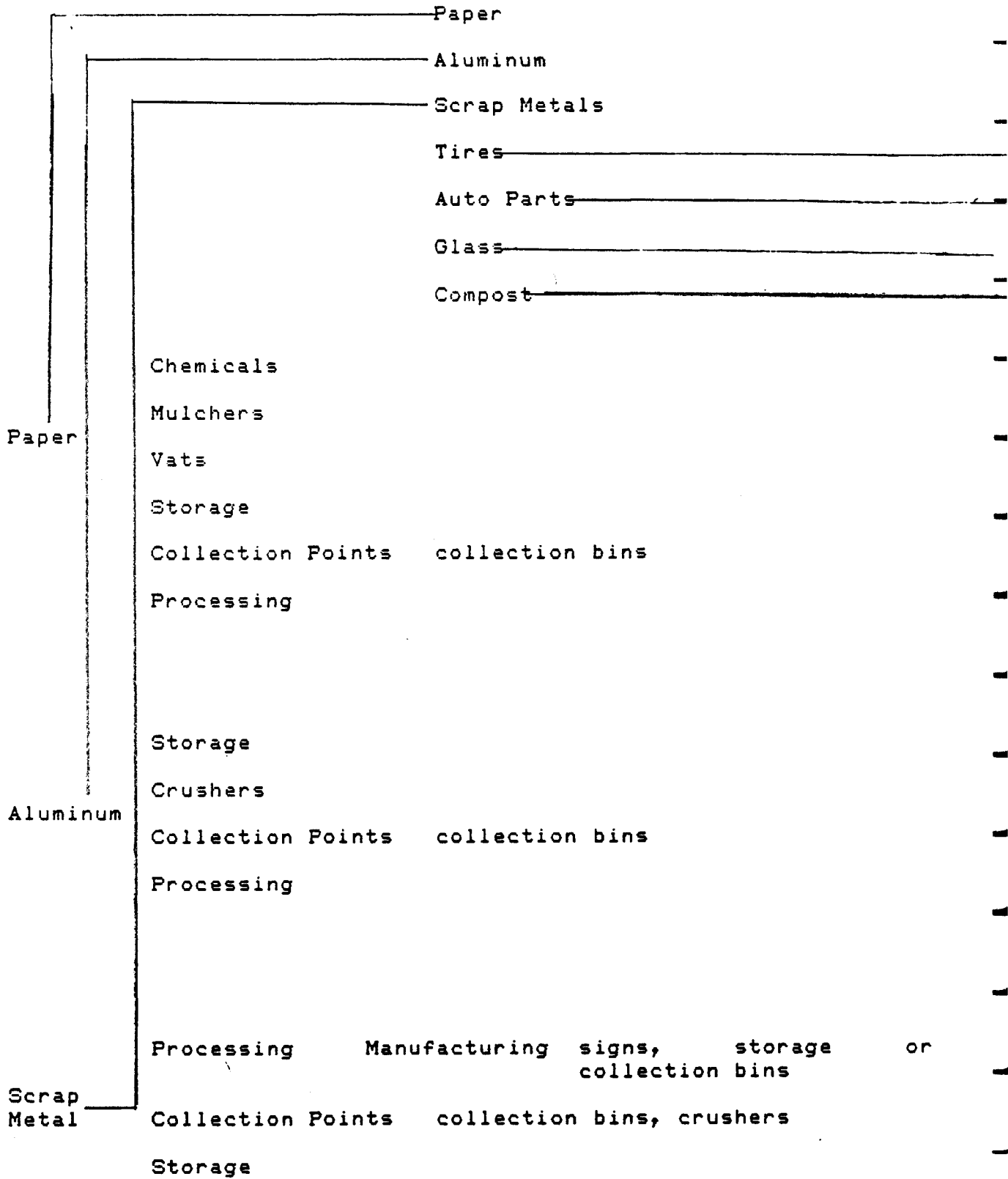
Sand Boxes	board, paint, old tractor tires, screws, plastic liners
Sand Paper	glue, sorters, crushers, ink, paper, packaging
Instant Beach	marketing, plastic liners, vacuums, fake or potted palms, sun lamps, suntan oil
Cement Mixer	mixers, cement, water, cement tools
Chicken Feed	sacks, sorters, chicken feed
Glass	kilns, processing
Floor Tiles	glue, dye, sorting, crushers, forms/molds
Roofing/Siding Material	glue, sacks, pallets, dye/paint, cement
Cement Mixer	mixers, cement, water, cement tools
Aquarium Bottoms	washing bins, packaging, storage, dye
Roads	
Vacation Housing/Cabins	contractors, lumber, bricks, windows, wire, electricians, nails, cement, architects, pipes, plumbers
Fishing	bait and tackle shops, licenses, fishing guides, boat rental
Beaches/Swimming	

Net Profits from Value Added Processing of Honey



All of these figures for value added processing are done using 50% as a constant for production costs.

Solid Waste



Tires

Storage

Sorting

Marketing sand boxes, used tires

Retreading processing, sales

Collection Points

Storage

Collection Points

Auto Parts

Sorting cataloging

Distribution

Storage

Collection Points

Glass

Sorting

Crushers

Processing

Composting Bins wire, ashes, lime

Collection Points

Storage

Chemicals

Compost

Packaging

Monitoring

Marketing

Soy Beans

