

1987

Nebraska Policy Choices: 1987

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NEBRASKA POLICY CHOICES

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NEBRASKA POLICY CHOICES

1987

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Nebraska Policy Choices: 1987

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Foreword

It is with a special sense of excitement that we present to you the second volume of *Nebraska Policy Choices*. Our first *Nebraska Policy Choices* volume received encouragement for a job well-done from many important and diverse sectors in Nebraska. We believed at the time that we were on target and that our Center for Applied Urban Research had initiated a project of value to Nebraskans. While not every article in this volume may be of interest to you, nor will you necessarily agree with all of the policy options, the important task has been accomplished--we have helped to identify and to promote discussion of policy issues confronting Nebraska's citizens.

Future issues will focus on education, health, and urban conditions in Nebraska. Given the special mission of the College of Public Affairs and Community Service, we expect to pay special attention to minority conditions and social service delivery in future research. As in the first 2 years, we look forward to your suggestions on how to keep *Nebraska Policy Choices* focused on topics of interest and concern to you.

I am also pleased that once again this volume contains the good work of faculty and staff from several of the university campuses and departments. On behalf of the College of Public Affairs and Community Service, I extend a special thanks to the faculty and staff of the Center for Applied Urban Research for their continued leadership, hard work, and devotion to this project.

David Hinton, Dean
College of Public Affairs
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Contents

	Page
Foreword	v
Preface	xi
1. Nebraska Settlements: Status, Trends, and Policy Choices	1
Introduction	1
Overview of Nebraska's Settlement System	2
Nebraska's Settlement System in the Future	19
Implications of Changes in the Settlement System	24
Making Policy Choices	29
2. Nebraska's Small Towns and Their Capacity for Economic Development	43
Nebraska's Small Towns and Declining Agriculture	44
Assistance to Small Towns	46
Local Development in Small Towns	49
Community Problems and Economic Development	50
Improving Local Facilities for Economic Development	56
Participation in Economic Development	58
Conclusions and Policy Implications	68
3. Community Banking Issues in Nebraska	79
Community Banks	79
The Banking Industry	83

Deregulation and Community Banks	88
Strategic Responses to Deregulation	97
Policy Recommendations and Conclusions	104
4. Financing Public Elementary and Secondary Schools in Nebraska	109
System for Funding Schools	110
Organization of School Districts	122
Problems in Financing Nebraska's Public Schools	131
Summary and Conclusions	143
Policy Decisions	146
5. The Macroeconomics of Nebraska's Competitiveness in World Agricultural Markets	157
Competitiveness in World Markets	159
Macroeconomic Policy	162
The Link with Interest Rates	164
Cyclical Rise and Decline in Competitiveness	167
Secular Decline in Competitiveness	175
Current Outlook for the Macroeconomic Environment	178
Policy Choices	180
Conclusions	184
6. Groundwater Quality and Policy Options in Nebraska	187
Overview of Groundwater Quality	192
Nebraska's Policy Response to Groundwater Contamination	208
Policy Strategies	223

7. The Confinement of Juveniles in Nebraska Jails and Lockups	235
Problems with Confining Youths in Adult Facilities	237
Juveniles in Nebraska's Jails and Lockups	243
Reducing the Use of Jails and Lockups	252
Conclusions and Policy Choices	265
8. The Nebraska Legislature: Policy Implications of Its Organization and Operation	273
Important Historical Events	274
Institutional Changes Since Adoption	274
Internal Leadership Authority	275
Staff Resources	277
Legislative Process: Early Stages	279
Legislative Process: Final Stages	285
Final Enactment and Gubernatorial Action	287
Citizen Lawmaking	288
Summary	289
Evaluating the Unicameral	291
Contributors	297
Reviewers	301

Preface

Nebraska Policy Choices: 1987 represents the work of 14 faculty from the University of Nebraska's Omaha and Lincoln campuses. As last year, the authors are some of the leading experts in the state in their respective areas of interest. The depth of faculty capacity, coupled with the breadth and timeliness of the topics, combine to make *Nebraska Policy Choices: 1987* an exciting publication.

Planning for the 1987 volume began approximately 15 months ago as the 1986 edition of *Nebraska Policy Choices* was being completed. The process of assembling the annual volume began with informal conversations with key informants from business, community organizations, local government, and state elected and appointed officials about the major issues facing Nebraska. While an effort was made to identify current issues facing Nebraskans, much attention was focused on identifying emerging issues--issues that are not on the public agenda for decision-making. As with the first volume, the goal was to identify policy issues where a need exists to increase our understanding of the dynamics and trend of a particular issue, and to better understand the policy options for dealing with the problem.

Not all of the policy problems and challenges identified by the key informant group are contained in this year's volume. In some instances, faculty experts could not accommodate the tight time limit within which the research and writing for the chapters takes place. For some, data and analysis requirements meant that research would have to take place over a multiyear period.

Research was undertaken during 1987 concerning prison overcrowding and displaced workers; the results are planned for publication in the 1988 edition of *Nebraska Policy Choices*.

A vital part of the process of producing each volume of *Nebraska Policy Choices* is the use of external academic and layperson reviewers. This year, 18 reviewers assisted in the process. (A list of reviewers is included at the end of the volume.) As with any review process, the reviewers did not always like what the authors were saying or how they were approaching the topic. Likewise, the authors did not always agree with the comments of the reviewers. In every instance, however, a good deal of reality therapy and useful exchange of ideas and information took place. The result is, I think, a much stronger set of chapters.

Unlike the topics examined in the first volume, this year's chapters cannot easily be categorized. Topics range from the often highly technical area of groundwater quality to the politically unique Nebraska Unicameral Legislature. This diversity reflects the immense range of policy issues confronting Nebraskans.

While there is considerable diversity in the contents of *Nebraska Policy Choices: 1987*, four chapters focus on some aspect of the agricultural-rural-small town challenge that exists in Nebraska. One chapter deals with the macroeconomics of Nebraska's competitiveness in world agricultural markets. In this chapter, Frank Zahn argues that although Nebraska faces long-term decline in its competitiveness in world markets, actions can be undertaken to support agriculture in the state. These include funding research to determine Nebraska's areas of comparative advantage in farm products, developing a state marketing strategy for each traded product, and expediting

the reallocation of resources to their most productive uses.

Another chapter looks at the health of Nebraska's community banks, a basic institution in many of the state's small cities. Although Hosek and Garza note that a weak agricultural economy has affected these banks, the trend of deregulation will present more far-reaching consequences for community banks. In their chapter, the two researchers describe the recent economic performance of community and large banks in Nebraska, characterize the changes brought about by deregulation, and identify actions that community banks might undertake to enhance their competitive position in the changing financial market. The chapter concludes with a set of questions for state policymakers to consider as they assess how to help the state's community banks in adjusting to the future.

Two chapters directly address aspects of Nebraska's small towns. The chapter by David DiMartino looks at trends in the state's incorporated places. An examination of the historical, contemporary, and projected future distribution of incorporated places by population size category indicates that the proportion of very small places will increase in Nebraska. This trend, and others, suggest three types of incorporated places with their unique needs. The chapter concludes with a discussion of these needs--managing decline in very small rural places, planning strategically for the future of middle-sized places, and enhancing urban growth centers. Policy choices surrounding the allocation of resources and specific strategies for meeting these three types of needs are examined also.

Many small communities lack the basic ingredients to undertake economic development activities. Paulsen and Reed's chapter looks at the potential for Nebraska's small

towns to undertake these activities. Of particular importance are a community's population size, resource base, and administrative and physical infrastructure. Based upon these findings, a three-tiered approach is proposed for community economic development assistance in Nebraska, with the level and type of assistance available to communities dependent upon factors such as size, resource base, and administrative and infrastructure capacity.

The remaining chapters deal with equally important policy issues. In fact, many of the topics have extensive ties to the rural and small town fabric of Nebraska. Financing public elementary and secondary education, the confinement of juveniles in jails and lockups, groundwater quality, and the operation and development of the Nebraska Unicameral all promise to be on the agenda of decision-makers in the coming months and years.

Whether you agree with the analyses of the authors or not, I hope that you are stimulated by *Nebraska Policy Choices: 1987*. If the work contained in this volume adds to public understanding and discussion of policy issues, the volume will have accomplished its basic purpose.

In closing, I want to thank the many individuals who made this year's edition of *Nebraska Policy Choices* possible. Over 30 individuals in business, community organizations, and state and local government provided early guidance on the topics included in this year's volume. To these individuals goes a special "thank you."

As indicated earlier, 18 technical reviewers aided immeasurably the final product of *Nebraska Policy Choices: 1987*. Special thanks must also go to the editorial and office staff of the Center for Applied Urban Research. These individuals worked many long hours to see the 1987 volume translated from rough ideas and copy to polished final product. They are Gloria Ruggiero and

Sharon deLaubenfels who edited the chapters; Joyce Carson who did the bulk of the word processing and layout; and Betty Mayhew and June Turner who helped with the myriad administrative and support tasks that inevitably become a part of a project such as this one.

Finally, Chancellor Del Weber, Vice Chancellor Otto Bauer, Dean David Hinton, President Ronald Roskens, and the University of Nebraska Board of Regents have continued to encourage this project. Their leadership and interest, particularly that of Dean David Hinton, are greatly appreciated.

Russell L. Smith
Omaha, Nebraska
October 1987

Nebraska Settlements: Status, Trends, and Policy Choices

1

David R. DiMartino
with the assistance of
*Russell L. Smith**

This chapter looks at historical and contemporary trends in Nebraska's system of incorporated places. Particular attention is given to changes in the number and proportion of places in different population size categories, the movement of places between different size categories, and what Nebraska's settlement system is likely to look like in the future. A review of past and recent trends, together with forecasts about the future, indicates a likely increase in the number of very small places, major shifts for middle-sized places, and continued growth in the number of places over 5,000 population. Based upon these trends, three separate needs tied to each community type are identified. These include managing decline, strategic economic planning assistance, and growth center promotion. The chapter concludes with a discussion of criteria that might guide choices about which categories of places in Nebraska to assist and how to provide help to those places identified for assistance.

Introduction

More Nebraskans live in urban than rural places. In 1984, nearly three of every five Nebraskans lived in urban places (communities of 2,500 or more residents).¹

Although this statement is technically true, it fails to paint a complete picture of Nebraska's settlements. Such an assertion challenges us to re-examine our perceptions of the state and its communities.

*Following the untimely illness of Dr. DiMartino, Dr. Smith joined in completing this chapter, particularly the "Implications" and "Policy Choices" sections.

While the majority of the state's population lives in urban places, most of Nebraska's settlements have fewer than 2,500 residents. In fact, in 1980, 60 percent of the state's 535 incorporated places had populations of less than 500; over 90 percent of Nebraska settlements had less than 2,500 residents. This variation in the size of settlements is of particular interest because places of differing sizes have experienced different growth trends and may have different economic and community development needs.

The state's settlement system is analyzed to explain the potentially different needs of groups of settlements.² Attention is given to changes in the number and proportion of settlements in different population size categories over time, to movement of places between different population size categories in recent decades, and to projections of the makeup of Nebraska's settlement system in the future. The chapter concludes with a discussion of policy actions that the state might undertake, given recent and likely trends in Nebraska's settlement system.

Overview of Nebraska's Settlement System

Many of the state's settlements were established in the late 1800s in response to the development of transportation, such as overland trail routes, train routes, and water transportation, then agriculture, across the region. Thus, many of the state's settlements served first as transport centers and later as central places from which goods and services were provided to surrounding agricultural areas. Over time, interdependencies developed between places and a system of settlements evolved that encompassed many small villages and towns providing everyday necessities for convenience

and marketing and a few larger places that provided more specialized economic functions to a larger geographic territory, population, and trade area.

During the 1980s enormous economic changes have taken place in Nebraska. While the crisis confronting the state's agricultural sector has received much attention, the transportation and manufacturing sectors have been undergoing major change as well (Bare, Deichert, and Pursell, 1986). These significant economic changes have accelerated the long-term trends of a decrease in the number of farms, the population losses in many rural areas and small towns, and an increase in the number of business failures in many communities.

This collision of trends has raised new concern for the future of small places in Nebraska. Further decline in the population and resource base of these small settlements might translate into reductions in quality of life. Questions, such as: Will the state's small towns survive? and, Can anything be done to save small towns? are being raised, and not always quietly.

Central Place Theory

Central place theory is particularly relevant to, and can assist in an understanding of, the origin and evolution of Nebraska's communities.

Settlements are founded to bring people together to perform specific functions. These functions are most often associated with the production and exchange of goods, and may include manufacturing, marketing, and transportation. As a settlement grows, the functions performed in that place become more varied and complex.

Central place theory deals with one of the most basic functions performed in even the smallest of

settlements--marketing, or the transfer of goods and services from producer to consumer (Berry, 1967). The theory strives to explain the location, size, nature, and spacing of settlements within a proscribed area, using marketing principles.

Central place theory is particularly relevant to understanding the distribution and growth of settlements in areas of relatively less industrialization and more agriculture, such as Nebraska. These areas contain mature settlement systems that best express the principle of centrality.

Centrality is the quality of a settlement that makes it accessible, or central, to a population in an area surrounding the settlement. Access is essential for the distribution of goods and services by producers and for the acquisition of goods and services by consumers.

Using the consumer's perspective, buyers who travel to a settlement to purchase goods and services will select places that minimize their efforts as buying points. In other words, consumers will travel the shortest possible distance to acquire a given good or service. More frequently purchased goods will be acquired at nearby places and less frequently needed items at more distant locations.

Also, as the economic activity of a settlement increases, its ability to provide more services increases. That is why larger places provide greater number and variety of central functions than smaller settlements and why larger places command influence over larger market areas (trade areas or populations) than the smaller places. The more varied services available at larger centers attract greater numbers of consumers.

Consumers can, and do, split their loyalties. A buyer may travel to a nearby, very small place (hamlet) to purchase gasoline or daily foodstuffs. The buyer may

also travel to a slightly farther and larger place (village) to purchase hardware or get a haircut. A less-frequent trip may be made to an even farther and larger place (city) to buy clothing, visit a bank, or see a movie.

Central places come in all sizes and may function in their own capacities, while coexisting with other central places. Such a network of central places of various sizes interacting with one another is a central place hierarchy. The size and distribution of places within a settlement system may portray a central place hierarchy. Nebraska's settlement system is influenced strongly by central place principles and exemplifies central place patterns.

According to this theory, central place patterns are not static, they change. Some places grow with additional functions, and other places decline with the loss or change of functions.

Many of Nebraska's settlements were founded as central places and continue to perform primarily in this capacity. Others have lost part, or all, of this function, frequently as the result of improved transport technology which has caused consumers to bypass smaller market places in favor of larger ones. The following analysis of Nebraska's settlement system should be viewed in light of the dynamic changes that are occurring in the central place patterns.

Nebraska's Settlement System

A settlement system is the collection or set of places that exists in an area. A settlement system includes both incorporated and unincorporated places. However, analyses are usually limited to incorporated places because such places are defined legally and

delineated by the jurisdictions (counties) in which they are located. As such, data are more readily available for incorporated places than for the unincorporated. In this chapter, settlement system refers to all incorporated places in Nebraska.

Nebraska's settlement system included 535 incorporated places in 1980. The populations of incorporated places ranged from 2 in Gross, Nebraska, to 314,255 in the city of Omaha. The size distribution of places between these extremes was very uneven. Smaller places far outnumbered larger places, a condition typical of settlement systems throughout the United States.

In 1980, over half (60 percent) of Nebraska's incorporated places had a population base of less than 500 residents, nearly three-fourths (71.4 percent) had less than 800 residents, and over three-fourths (76.4 percent) had fewer than 1,000 residents (table 1).

Historically, the number of incorporated places in Nebraska's settlement system has grown. The number of incorporated places increased continuously during each decade from 1860 to 1970. Table 2 shows that during the 1970s there was a slight decrease in the number of places. At its maximum in 1970, Nebraska's settlement system included 539 incorporated places. The total population of those places numbered 1,134,307, or 72.3 percent of the state's population. In 1980, incorporated places were located in each of Nebraska's 93 counties, except Banner and McPherson Counties.

A change in the number of places in Nebraska's settlement system results from incorporations, disincorporations, and annexations or mergers. Any settlement with 100 residents may petition its county for incorporation in Nebraska. Likewise, any place may petition for disincorporation. However, places that

Table 1 - Incorporated places in Nebraska, by size category, 1980

Size category	Incorporated places	
	Number	Percent
1-99	70	13.1
100-199	95	17.8
200-299	67	12.5
300-399	53	9.9
400-499	36	6.7
500-599	22	4.1
600-799	39	7.3
800-999	27	5.0
1,000-1,499	50	9.3
1,500-1,999	21	3.9
2,000-2,499	6	1.1
2,500-2,999	5	.9
3,000-3,999	8	1.5
4,000-4,999	5	.9
5,000-9,999	19	3.6
10,000-49,999	10	1.9
50,000 or more	2	.4
Total	535	99.9 ¹

¹Percentage totals to less than 100 percent due to rounding.

decrease in population to fewer than 100 residents are not required to disincorporate.

Two general types of annexations can take place. In one, a municipality annexes adjacent unincorporated land. In the second, another incorporated municipality annexes or merges with an incorporated place. Both types of annexations are governed by state law, and criteria vary somewhat by size of community. Since 1920, the cities of Grand Island, Lincoln, and Omaha have annexed other incorporated places.

A total of 554 settlements have been incorporated in Nebraska. Yet, the number of places in Nebraska's settlement system was fairly well established by 1930, with only 13 incorporations, 3 disincorporations, and 4

Table 2 - Incorporated places in Nebraska: Number, percent, and change by size categories, 1880-1980

Size category	Year										
	1980	1970	1960	1950	1940	1930	1920	1910	1900	1890	1880
	Number										
<2,500	486	491	494	494	495	494	479	427	346	231	62
2,500-49,999	47	46	41	38	34	33	28	26	20	14	7
50,000 or more	2	2	2	2	2	2	2	1	1	2	0
Total	535	539	537	534	531	529	509	454	267	247	69
	Percent										
<2,500	90.8	91.1	92.0	92.5	93.2	93.4	94.1	94.1	94.3	93.5	89.9
2,500-49,999	8.8	8.5	7.6	7.1	6.4	6.2	5.5	5.7	5.4	5.7	10.1
50,000 or more	.4	.4	.4	.4	.4	.4	.4	.2	.3	.8	0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Size category	Year									
	1970-1980	1960-1970	1950-1960	1940-1950	1930-1940	1920-1930	1910-1920	1900-1910	1890-1900	1880-1890
	Number change									
<2,500	-5	-3	0	-1	1	15	52	81	115	169
2,500-49,999	1	5	3	4	1	5	2	6	6	7
50,000 or more	-	-	-	-	-	-	1	-	-1	2
	Percentage change									
<2,500	-1.0	-.6	0	-.2	.2	3.1	12.2	23.4	49.8	272.6
2,500-49,999	2.2	12.2	7.9	11.8	3.0	17.9	7.7	30.0	42.9	100.0
50,000 or more	0	0	0	0	0	0	100.0	0	-50.0	200.0

annexations of other incorporated places occurring since 1930 (table 3).

Of the 554 settlements incorporated in Nebraska, 535 continued to exist as incorporated places in 1980, a survival rate of 96.6 percent. If the ten annexations since 1900 are included as survivors, as part of larger places, the survival rate increases to 98.4 percent. Whichever computation is used, most of Nebraska's settlements, once incorporated, continue to survive as incorporated places.

Metropolitan, Urban, and Rural Places. Frequently, settlements are categorized by size of population. Two of Nebraska's incorporated places have populations that are large enough to be categorized as metropolitan places (Lincoln and Omaha).³ In 1980, Lincoln had 176,932 residents and Omaha had 314,255. They have been the state's only metropolitan cities since 1920. The two

Table 3 - New incorporations, disincorporations, and annexations in Nebraska, by census decade and size category, 1890-1980

Size category in 1980	Year									
	1970- 1980	1960- 1970	1950- 1960	1940- 1950	1930- 1940	1920- 1930	1910- 1920	1900- 1910	1890- 1900	1880- 1890
	Number									
New incorporations:										
<100	0	0	0	1	1	1	4	5	2	14
100-499	1	1	3	2	2	17	58	76	99	259
500-999	0	0	0	0	0	1	1	16	18	26
1,000-2,499	0	1	0	0	0	0	0	1	5	7
2,500-4,999	0	1	0	0	0	0	0	0	0	1
5,000-29,999	0	0	0	0	0	0	0	0	0	0
Total	1	3	3	3	3	19	63	88	124	307
Disincorporations:										
<100	3	0	0	0	0	0	0	0	0	3
100-499	0	0	0	0	0	0	1	0	0	1
500-999	0	0	0	0	0	0	0	0	0	0
1,000-2,499	0	0	0	0	0	0	0	0	0	0
2,500-4,999	0	0	0	0	0	0	0	0	0	0
5,000-29,999	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	0	0	0	1	0	0	4
Annexations:										
<100	0	0	0	0	0	0	0	0	0	0
100-499	0	0	0	0	0	0	1	0	0	1
500-999	0	1	0	0	0	0	0	0	0	1
1,000-2,499	1	0	0	0	0	0	3	0	0	4
2,500-4,999	0	0	0	0	1	0	2	0	0	3
5,000-29,999	1	0	0	0	0	0	1	0	0	2
Total	2	1	0	0	1	0	7	0	0	11

cities constitute only 0.4 percent of the state's incorporated places, but contain 31 percent of Nebraska's population.

In addition to Omaha and Lincoln, 47 incorporated places in Nebraska qualify as urban places--cities with 2,500 or more residents (table 2). While these 49 places constitute only 9.2 percent of the state's settlements, they include the majority (56.2 percent) of Nebraska's population. The number of urban places in Nebraska has increased consistently since statehood, and has increased as a proportion of all places since 1900.

Urban places are located in 42 of the state's 93 counties. However, the relatively larger urban places are located in a few counties throughout the state. For example, there were only 12 places with 10,000 or more

residents in 1980, and all but one were located in the eastern one-third of the state or the Platte Valley.

Most of Nebraska's incorporated places have fewer than 2,500 residents. This is true in most states, with 69.7 percent of all U.S. incorporated places having a population of less than 2,500. Places with a population of less than 2,500 in Nebraska totaled 486 in 1980, or 90.8 percent of all incorporated places in the state (table 2). These places include only 16 percent of the state's population, a decline in absolute numbers since 1940, and a decrease as a proportion of all places since 1900.

Detailed View of Settlement System Trends.

Trends in the number and proportion of three types of incorporated places (metropolitan, urban, and rural) were examined to provide an overview of Nebraska's settlement system. To provide additional detail, particularly for the numerous small places in the state, incorporated settlements were grouped into eight size categories (table 4).

Table 4 shows that at the turn of the century, the number of places was increasing in each of the eight size categories. Settlement was continuing in the state, and numerous places of various sizes were being incorporated. That trend continued into the 1920s. Beginning in 1930, size categories began to differ in the number of places gained or lost.

The number of places in each of the urban size categories has increased or remained essentially unchanged since 1930 (table 4). The number of metropolitan places has remained unchanged since 1920. The number of places just below metropolitan size (10,000 to 49,999 residents) has increased slightly, and consistently, throughout each decade since 1930. The number of places with a population of 5,000 to 9,999 has

Table 4 - Incorporated places in Nebraska, by size category, 1880-1980

Size category	Year										
	1980	1970	1960	1950	1940	1930	1920	1910	1900	1890	1880
	Number										
<100	70	76	67	50	21	16	8	5	3	1	3
100-499	251	262	272	279	304	296	290	260	213	132	27
500-999	88	80	86	91	101	109	105	99	86	59	20
1,000-2,499	77	73	69	74	69	73	76	63	44	39	12
2,500-4,999	18	18	19	21	19	18	16	14	11	6	5
5,000-9,999	19	18	13	9	8	9	9	9	7	5	0
10,000-49,999	10	10	9	8	7	6	3	3	2	3	2
50,000 or more	2	2	2	2	2	2	2	1	1	2	0
Total	535	539	537	534	531	529	509	454	367	247	69
	Percent										
<100	13.1	14.1	12.5	9.4	4.0	3.0	1.6	1.1	0.8	0.4	4.3
100-499	46.9	48.6	50.7	52.2	57.3	56.0	57.0	57.3	58.0	53.4	39.1
500-999	16.4	14.8	16.0	17.0	19.0	20.6	20.6	21.8	23.4	23.9	29.0
1,000-2,499	14.4	13.5	12.9	13.9	13.0	13.8	14.9	13.9	12.0	15.8	17.4
2,500-4,999	3.4	3.3	3.5	3.8	3.6	3.4	3.2	3.0	3.0	2.4	7.2
5,000-9,999	3.6	3.3	2.4	1.7	1.5	1.7	1.8	2.0	1.9	2.0	0
10,000-49,999	1.9	1.9	1.7	1.5	1.3	1.1	.6	.7	.5	1.2	2.9
50,000 or more	.4	.4	.4	.4	.4	.4	.4	.2	.3	.8	0
Total ¹	100.1	99.9	100.1	99.9	100.1	100.0	100.1	100.0	99.9	99.9	99.9

¹Percentages may not total 100 percent due to rounding.

increased markedly since 1950, but remained essentially unchanged from 1910 to 1950. By contrast, the number of places in the smallest urban size category (places of 2,500 to 4,999 residents) has changed minimally since 1930. However, the number of places increased from 1930 to 1950, and then decreased from 1950 to 1970.

These figures demonstrate that, while individual urban places may have decreased or increased in population, the number of urban places has increased in Nebraska throughout this century.

The pattern of change among the rural settlement categories is much more varied than that among the urban size categories. As noted earlier, the number of rural places has decreased since 1940. The number of places with 1,000 to 2,499 residents, which is just under urban size, was nearly unchanged from 1920 to 1980, although the numbers varied irregularly during this period. The number of places decreased from 1920 to

1940, increased, then decreased from 1940 to 1960, and increased from 1960 to 1980 (table 4).

The number of places in the two intermediate rural size categories (places with 100 to 499 and 500 to 999 residents) has declined since about midcentury. The number of places with 500 to 999 residents decreased from 1930 to 1970, but increased after 1970 to the level attained in the 1950s. Places with populations of 100 to 499 have decreased in number since 1940. Significantly, the proportion of all places with populations of 100 to 499 fell to below 50 percent of all settlements in 1970 for the first time since 1890 (table 4).

The smallest category of rural places, population of less than 100 persons, is too small for incorporation. Places that have lost residents since incorporation are not required to disincorporate because of their lesser populations.

The number and proportion of incorporated places with fewer than 100 residents have increased throughout most of this century. The increases were constant from 1890 to 1970 (table 4). The number and proportion of places with less than 100 residents decreased from 1970 to 1980, the first time in this century. While several places disincorporated from 1970 to 1980, most of the decrease in the number of places in this category came from a resurgence in population, thus, shifting these places to the category for 100 to 499 residents.

Among the 70 places with fewer than 100 residents in 1980, most (57.1 percent) fell below 100 between 1940 and 1960, and nearly three-fourths (71.4 percent) fell below that level between 1940 and 1970. Table 5 shows that the proportion of places with a population of less than 100 fell below that level at an increasing rate from 1910 to 1950, then with decreasing frequency through 1980.

Table 5 - Incorporated places in Nebraska with a population of less than 100 in 1980, by decade of decline

Decade	Incorporated places	
	Number	Percent
1970-80	5	7.1
1960-70	10	14.3
1950-60	16	22.9
1940-50	24	34.3
1930-40	6	8.6
1920-30	3	4.3
1910-20	1	1.4
Prior to 1910	5	7.1
Total	70	100.0

The populations of many of Nebraska's settlements have decreased below the 100 required for incorporation. If the 70 places with populations below 100 in 1980 were required to disincorporate because of their small size, the remaining 465 incorporated places would constitute an 83.9 percent survival rate for all places ever incorporated in Nebraska. This rate is significantly lower than the 96.6 percent survival rate cited earlier.

Table 4 indicates that the number of settlements in the smallest and largest size categories have increased generally, with rural places--communities with a population of 100 to 2,500--decreasing in number, particularly since 1930.

Movement Between Size Categories. The information available on the number of incorporated places in Nebraska by size category and time period indicates the following trends:

- The number of incorporated places in Nebraska's settlement system increased up to the 1930s and has remained fairly constant since then.
- The number and proportion of urban places within the settlement system have increased, while places below urban size have declined as a proportion of all incorporated places.
- The proportion of all places in the smallest size category (population of less than 100) and in the largest categories (populations of 5,000 to 9,999 and 10,000 to 49,999) increased from 1930 to 1980. The proportion of incorporated places in the intermediate rural categories (populations of 100 to 499 and 500 to 999) declined, while the proportion of places in the larger rural category (population of 1,000 to 2,499) and the first urban category (population of 2,500 to 4,999) remained fairly constant.

Displaying Trends. Tables 6, 7, and 8 compare the distribution of places by size category at various times for 10 year periods from 1950 to 1980. This information can be used to portray the movement of places between settlement size categories.

The main diagonal of the matrix contained in each of the three tables extends from upper-left to lower-right (boldface numbers) and identifies the number of places that remained in the same size category during the decade. Figures to the left and right of the data cells along the diagonal identify the number of places shifting to the next larger (right) or smaller (left) size category from beginning to end of the decade. Figures lying outside the three diagonals in the matrix indicate the

number of places that grew, or declined by two or more size categories, during the decade. This is referred to as leapfrogging.

The inner matrix includes all places that were present in both years. The top row and left-hand column enumerate the newly incorporated, disincorporated, and annexed places, respectively. These places were present in only one of the years. The two metropolitan places were not included in the matrix, because of their vastly different sizes and their unchanging size category.

Table 6 shows places by size category for the most recent full decade, 1970 to 1980. The number of places totaled 533 in 1980, and 537 in 1970, not including the two metropolitan places present in each year. A total of 532 places were present in both years, and 538 places were represented in one of the years. Thus, many of the places existed in both years, and 91.6 percent remained in the same size category from 1970 to 1980 (boldface numbers). Among the places that changed size categories during the decade, more (82.2 percent) shifted to larger categories, or grew, than shifted to smaller categories (17.8 percent).

Table 6 - Distribution of incorporated places in Nebraska among size categories in consecutive census years, 1970-80¹

Size category	Annexed and disincorporated 1970-80	1980 Population						Sub-total	Total
		<100	100-499	500-999	1,000-2,499	2,500-4,999	5,000-49,999		
1970: New 70-80		1						1	1
<100	3	65		8				73	76
100-499		5		241		16		262	262
500-999				1		71		80	80
1,000-2,499						1		72	73
2,500-4,999						69		80	80
5,000-49,999	1					0		15	18
						1		3	18
						1		26	27
Subtotal	5	70	250	88	77	18	29	532	537
Total	5	70	251	88	77	18	29	533	538

¹Totals do not include the two metropolitan centers, Lincoln and Omaha.

Table 7 - Distribution of incorporated places in Nebraska among size categories in consecutive census years, 1960-70¹

Size category	Annexed and disincorporated 1960-70	1970- Population						Sub-total	Total
		<100	100-499	500-999	1,000-2,499	2,500-4,999	5,000-49,999		
1960: New 60-70			1		1		1	3	3
<100		64	3					67	67
100-499		12	252	8				272	272
500-999	1		6	70	9			85	86
1,000-2,499				2	63	2	2	69	69
2,500-4,999					0	15	4	19	19
5,000-49,999						0	22	22	22
Subtotal	1	76	261	80	72	17	28	534	535
Total	1	76	262	80	73	18	28	537	538

¹Totals do not include the two metropolitan centers, Lincoln and Omaha.

Table 8 - Distribution of incorporated places in Nebraska among size categories in consecutive census years, 1950-60¹

Size category	Annexed and disincorporated 1950-60	1960- Population						Sub-total	Total
		<100	100-499	500-999	1,000-2,499	2,500-4,999	5,000-49,999		
1950: New 50-60				3				3	3
<100		47	3					50	50
100-499		20	248	10	1			278	279
500-999			18	69	4			91	91
1,000-2,499				7	64	3		74	74
2,500-4,999					0	16	5	21	21
5,000-49,999						0	17	17	17
Subtotal	0	67	269	86	69	19	22	532	532
Total	0	67	272	86	69	19	22	535	535

¹Totals do not include the two metropolitan centers, Lincoln and Omaha.

Table 9 summarizes these trends by decade for the period 1950-80. The net balance of shifts between categories resulted in the smallest two categories--populations of 100 to 499 and less than 100--experiencing a net loss in number of places. The remaining categories experienced a net gain or no net change.

Overall, during the 1970-80 decade more places moved to larger categories than to smaller categories. This must be viewed, however, from the perspective that

Table 9 - Shift of incorporated places in Nebraska to larger or smaller size categories, during consecutive census years, 1950-80

Time period and size category	Shift with larger			Shift with smaller		
	To larger	From larger	Net exchange with larger	To smaller	From smaller	Net exchange with smaller
	Number			Number		
1970-1980:						
<100	8	5	-3	0	0	0
100-499	16	1	-15	5	8	3
500-999	8	1	-7	1	16	15
1,000-2,499	2	0	-2	1	8	7
2,500-4,999	3	1	-2	0	2	2
5,000-49,999	0	0	0	1	3	2
Total	37	8	-29	8	37	29
1960-1970:						
<100	3	12	9	0	0	0
100-499	8	6	-2	12	3	-9
500-999	9	2	-7	6	8	2
1,000-2,499	4	0	-4	2	9	7
2,500-4,999	4	0	-4	0	2	2
5,000-49,999	0	0	0	0	6	6
Total	28	20	-8	20	28	8
1950-1960:						
<100	3	20	17	0	0	0
100-499	11	18	7	20	3	-17
500-999	4	7	3	18	10	-8
1,000-2,499	3	0	-3	7	5	-2
2,500-4,999	5	0	-5	0	3	3
5,000-49,999	0	0	0	0	5	5
Total	26	45	19	45	26	-19

most cities (91.5 percent) remained in the same population category during this period.

The question arises of whether the pattern of change evident for the most recent period (1970-80) is typical of recent decades. A comparison of tables 6, 7, and 8 demonstrates differences over the three most recent decades, and, therefore, the significance of the most recent period. Other places shifted between size categories during the three decades. The questions are, in which direction did they shift, and did they shift to larger categories (growth) or smaller categories (decline)?

Table 9 summarizes these trends by decade from 1950 to 1980. The number of places shifting from smaller to larger categories increased during the three decades by 26 (4.9 percent) in 1950-60, by 28 (5.2 percent) in 1960-70, and by 37 (7.0 percent) in 1970-80. Conversely, and more dramatically, the number of places shifting from larger to smaller categories decreased by 45 (8.5 percent) in 1950-60, by 20 (3.7 percent) in 1960-70, and by 8 (or 1.5 percent) during 1970-80.

While all size categories lost or gained (or lost and gained) places during the three decades, a significant change in the net exchange of places with smaller and larger categories occurred during each decade. During the 1950-60 decade, the smallest and largest size categories (populations of less than 100 and 5,000 to 49,999) experienced a greater gain than loss of places, while the intervening size categories experienced a greater loss than gain (table 9). While the three smallest size categories experienced a net gain from larger categories and a net loss to smaller size categories, the two largest size categories experienced net losses to larger categories and net gains from smaller categories. However, more places went up to the next larger size category, than down to the next smaller category. The split occurred within the size category for a population of 1,000 to 2,499, which lost places to both larger and smaller categories. At that time, there appeared to be a tendency for larger places to grow and smaller places to decline in population.

The pattern had changed by the 1970-80 decade. The two smallest size categories (populations of less than 100 and 100 to 499) were experiencing a greater loss than gain of places, while all other size categories experienced a greater, or equal, gain than loss (table 9). All size categories were experiencing a net loss to

larger categories and a net gain from smaller categories. Thus, by 1970-80, places tended to be moving up the settlement system hierarchy.

Nebraska's Settlement System in the Future

Policy options for addressing the community and economic development needs of Nebraska's communities must be developed. A base of information regarding past trends and an understanding of how the settlement system is likely to evolve should be formulated. For example, will the number of communities with a population of less than 100 increase or decrease in the coming decades?

Three Models of Change

Despite the need to plan for the future, making projections is hazardous. The future distribution of places among the various size categories of Nebraska's settlement system depends on many factors. Still, methods are available for speculating about the future distribution of Nebraska communities among size categories.

One projection tool is Markov analysis, which is based on the concept that populations move through various categories of existence over time (Howard, 1960). In simplest terms, a Markov model estimates the future distribution of a population, that is, settlements, among several various states, or size categories, at a future time. The future distribution is a function of (1) previous movements of the population among various states from which we can estimate probabilities of transition, and (2) the beginning distribution of the population among the categories.

Table 10 reports the results of three Markov models developed to forecast the proportion of Nebraska's settlements in each of six size categories. Model A estimates what Nebraska's settlement system might look like in 1990 and 2000, if the growth pattern of the 1970s had not occurred. The estimates for Model A, then, project future distributions using 1960-70 probabilities of transition and the 1970 distribution of places among the size categories.

Model A forecasts an increase in the proportion of settlements in the smallest size category (population of less than 100) for both 1990 and 2000. Had the growth

Table 10 - Markov projection of the distribution of places in Nebraska among population size categories, 1970-2000¹

Model	Year				Trend summary
	1970	1980	1990	2000	
	Percent				
A. Projection based on initial state in 1970 and probability of change 1960-70:					
<100	14.2	-	16.8	17.8	increase
100-499	48.9	-	45.6	44.1	decrease
500-999	15.0	-	13.4	12.8	decrease
1,000-2,499	13.5	-	14.3	14.5	increase
2,500-4,999	3.2	-	2.7	2.5	decrease
5,000-49,999	5.2	-	7.3	8.3	increase
B. Projection based on initial state in 1980 and probability of change 1970-80:					
<100	-	13.2	12.5	12.0	decrease
100-499	-	47.0	44.8	42.8	decrease
500-999	-	16.5	17.6	18.6	increase
1,000-2,499	-	14.5	15.6	16.8	increase
2,500-4,999	-	3.4	3.1	3.4	no change
5,000-49,999	-	5.4	6.3	6.5	increase
C. Projection based on initial state in 1980 and probability of change 1960-70:					
<100	-	13.2	14.6	15.8	increase
100-499	-	47.0	45.4	43.9	decrease
500-999	-	16.5	15.3	14.4	decrease
1,000-2,499	-	14.5	15.0	15.4	increase
2,500-4,999	-	3.4	3.1	2.9	decrease
5,000-49,999	-	5.4	6.5	7.7	increase

¹ = not applicable.

Initial states are actual proportions in each size category.

of the 1970s not taken place, then 17.8 percent of Nebraska's incorporated places would have a population of less than 100 by 2000.

A look at table 7 indicates that the increase in the number of places in the smallest category (population of less than 100) would be primarily a function of population declines in places in the size category for a population of 100-499. This model indicates that size categories for populations of 1,000 to 2,499 and 5,000 to 49,999 would also increase. The former size category would increase primarily as a result of growth in the number of places in the size category for a population of 500 to 999.

Model B provides a forecast of the distribution of Nebraska's places based on the growth and transition patterns of the 1970-80 decade. Thus, the model projects the proportion of cities in each of the size categories, given the distribution in 1980, and given the movement among categories during the 1970s.

The results of this model indicate that the proportion of Nebraska's places in the two smallest size categories (populations of less than 100 and 100 to 499) will decrease. All other size categories, except for the category for a population of 2,500 to 4,999 will increase. It is interesting that the proportion of places forecast by Model B to be in the smallest size category is about 50 percent less than that forecast by Model A for 2000. Overall, this forecast indicates fairly strong movement up the urban hierarchy.

Model C is based on the distribution of places in 1980, but uses transitional probabilities from the 1960-70 decade. This model estimates what Nebraska's system of settlements might look like in 1990 and 2000 if the pre-1970s pattern of growth continues for the remainder of this decade.

Model C forecasts a trend much like that of Model A. The dynamics of change outlined for Model A apply to Model C. The proportion of places with a population of less than 100 will increase as a result of the downward movement of settlements in the size category for a population of 100 to 499, while growth in the size category for a population of 1,000 to 2,499 will occur as places in the size category for a population of 500 to 999 move up the hierarchy. At the same time, places in the size category for a population for 2,500 to 4,999 will move up, thus, increasing the proportion of settlements in the size category for a population of 5,000 to 49,999.

Alternative Scenarios

If the trend characteristic of the 1970s were to continue in the 1980s, the distribution forecast by Model B would indicate likely declines in the number of places in the smaller size categories and increases in the number of settlements in the larger size categories. Using the 1970s forecast (Model B), then, most places would grow and move up the settlement system hierarchy. As a result, the smallest category would decline and the larger categories would increase in their proportion of all Nebraska incorporated places.

If, on the other hand, the growth and transition pattern of the 1960s (and earlier) were reestablished, the smallest size categories would increase. At the same time, many of the remaining size categories would increase in number as the larger towns became larger and assumed new functions in response to shifts in the settlement system. The smallest places would lose population and move down the settlement system hierarchy in this scenario.

Which alternative scenario is most likely to occur? Recent estimates indicate that the growth pattern of the 1970s may have ended and that the period may have been an aberration. Table 11 provides summary information about changes in population trends during 1980-84. While complete data are not provided, information from this period indicate a reversal of the population turnaround that took place in most size categories during the 1970s in Nebraska.

More than half of the places in four size categories (populations of 100 to 499, 500 to 999, 1,000 to 2,499, and 2,500 to 4,999) lost population between 1980 and 1984. In the other three categories (populations of less than 100, 5,000 to 49,999, and 50,000 and more), the proportions growing and declining in population were fairly similar to the previous decades' trend. Overall, from 1980 to 1984 about 60 percent of Nebraska's incorporated places lost population, while from 1970 to 1980 the proportion losing population was slightly less than 31 percent. Given this information, projections using probabilities of transition drawn from the pre-1970s (table 10 and Model C) may provide the most realistic picture of the future of Nebraska's settlement system.

Table 11 - Population trend for Nebraska's incorporated places, by size category, 1980-84

Size category	Population trend						
	Growth		Decline		Unchanged		Total
	No.	%	No.	%	No.	%	No.
<100	33	47.1	33	47.1	4	5.7	70
100-499	119	47.4	127	50.6	5	2.0	251
500-999	30	34.1	58	65.9	0	0	88
1,000-2,499	20	26.0	57	74.0	0	0	77
2,500-4,999	5	29.4	12	70.6	0	0	17
5,000-49,999	21	72.4	8	27.6	0	0	29
50,000+	2	100.0	0	0	0	0	2

Implications of Changes in the Settlement System

In Nebraska, and in many of the agriculturally dependent states of the West North Central Region, an increasing proportion of states' settlement systems will be comprised of small towns in the future. The empirical information presented in this chapter indicates that the proportion of small places, particularly those with a population of less than 100, has been, and likely will continue, to increase in the future. At the same time, the proportion of places with a population of more than 5,000 has been, and also will continue, to increase. These patterns result from shifts of settlements among size categories and represent an adjustment to changing economies, transportation networks, and technological forces.

The 1970s were a period of fairly strong growth in Nebraska's incorporated places, resulting in a number of places moving up from the smallest size categories. However, in the future, the more general long-term trend will reassert itself. A review of historical data on trends in Nebraska's settlement system, as well as projections of future trends, indicates the following:

- During the rest of this century, the state's smallest towns (less than 100 residents) will increase as a proportion of all incorporated places, unless disincorporations begin. This increase in the number of very small towns will be a result of places in the size category for a population of 100 to 499 losing population and moving down the settlement system hierarchy. At the same time, most of the places with a population of less than 100 will probably continue to lose population or be stagnant. About half of

the smallest communities have been losing population since the 1950s (table 5).

- A few settlements in the size category for a population of 500 to 999 will probably grow in the coming years, and most of these places will move up to the next larger size category. As a result, the proportion of Nebraska's incorporated places in the size category for a population of 1,000 to 2,499 will probably increase by 2000. Most places currently in the 1,000 to 2,499 population range will experience little growth, however. Since 1940, about 90 percent of the places in this category at the beginning of a decade have remained in the category throughout of the decade.
- Settlements in the size category for a population of 2,500 to 4,999 will constitute an increasingly smaller proportion of Nebraska's incorporated places by 2000. Most of the places in this size category will move up the settlement system hierarchy to the size category for a population of 5,000 or more.

Three sets of needs are distinguishable from the broad settlement system trends, and each need corresponds to one or more of the size categories.

Small Rural Settlements

As indicated earlier, an increasing proportion of Nebraska's settlement system will be comprised of very small rural settlements. Generally, these places will have less than 500 residents. The distinguishing features

of these places are stagnation or population decline and movement down the settlement system hierarchy.

For example, over half of the places with fewer than 100 residents in 1980 declined to a population of less than 100 before 1950. Over three-fourths declined to a population of less than 100 before 1960. The record in Nebraska, then, is that the very smallest places tend to stay small once population decline has begun.

Places in the size category for a population of 100 to 499 generally constitute one of the least mobile groups of settlements in Nebraska's settlement system. Since 1940, an average of 90 percent of these places stayed in this size category from the beginning to the end of a decade. One of the factors that underlies this long-term trend has been, and is likely to be, downward movement to the size category for a population of less than 100.

While these characterizations may seem harsh and deterministic, they are supported by recent evidence and projections. The primary exceptions to these patterns are likely to be very small rural settlements that are in metropolitan areas or near growth centers.

Important needs of very small rural settlements are managing decline and maintaining an acceptable quality of life. Population decline or stagnation in these places is an adjustment response to a changing rural and agricultural economy. These communities have already lost, and are at risk of losing, additional retail and service establishments and community services. Maintaining public infrastructure, particularly that related to basic needs, such as, drinking water supply, distribution and treatment systems, and wastewater treatment systems, will be a real challenge as these systems age and as the support base of the settlement declines. At the same time, people want to live in these settlements and will continue to do so. In fact, a large

proportion of the residents of these very small rural settlements are over age 65, a group that is less mobile and in need of more specialized services than the rest of the population.

Middle-Sized Settlements

A second set of settlements can be identified as middle-sized places. These places have between 500 and 5,000 residents. The overriding characteristic of these places is transition. Places in the size category for a population of 500 to 999 have traditionally had one of the highest rates of transition to other size categories since 1940. Furthermore, these places are almost as likely to move down as they are to move up the settlement system hierarchy. Enough of the communities in this size category will move up so that the proportion of all Nebraska settlements in the size category for a population of 1,000 to 2,499 will likely increase. The increase in this size group will only partially be a function of movement into the group, however. Much of the growth will result from the very low transition, either into or out of, this size category.

The only urban category in this group is the size category for a population of 2,500 to 4,999. This category has declined as a proportion of all Nebraska settlements over the past 30 years. This decline is a function of these settlements moving up to the larger size categories, with no replacements coming up from the smaller categories. This category, then, is dominated by upward movement with no replacement from below. While it is not clear at this time, the number of places in this size category could decline more rapidly than in the past. During 1980-84, for example, 70.6 percent of the places in this category lost population. If this

continues, we may see some shifting downward from this category.

These trends indicate a set of places that previously played various roles as central places in Nebraska. Some have served as minor trading centers of various sizes. Some are evolving, often in different directions, in response to changes in traditions and roles, population bases, and other factors, such as, stronger competition from other central places. Others are too close to larger central places to develop much of a base, and they are being buffeted hard by a declining support base and population. The basic theme, however, is transition.

While some of the places in this category need assistance in managing decline and maintaining quality of life, the fundamental issue might be the need for assistance in strategic planning to identify the primary external and internal trends which affect these places, what the settlement wants to be in the future, and appropriate actions for dealing with both negative and positive forces to achieve local goals. Some of the smaller places, for example, were once agricultural service and shopping centers, but now they are becoming convenience and bedroom communities as the job base shifts to regional or area employment centers where shopping also takes place.

Other settlements have served as trading centers for small but rather densely populated areas that have suffered population decline. Still other places have received increased competition from nearby and larger trading centers, and are trying to find a new niche. In each case, the major needs are to define the present reality, what the future holds, and what the community can be realistically.

Larger Settlements

A third set of settlements have between 5,000 and 49,999 residents (this does not include Lincoln and Omaha). This size category has grown steadily over the long-term, and is likely to increase in the future, although slowly. Growth in this category is a function of the upward movement of communities in the size category for a population of 2,500 to 4,999. This pattern may diminish, however. While this would reduce growth in this category, places would continue to grow.

The distinguishing characteristic of this category is growth. At least three-fourths of the places in this category have experienced population growth during each of the last three decades. During 1980-84, for example, 72.4 percent of the places in this category posted population gains, while the average for the other size categories was only 36.8 percent.

While places in this category appear to be doing well, and may not appear to need assistance, these places might also be viewed as growth centers that could be the recipients of additional economic development assistance. If these places received assistance, smaller places in the surrounding region would receive benefits such as new jobs and income opportunities, the so-called ripple effect. This might, in turn, stabilize smaller rural places, thus, enhancing their appeal as places to live and raise families. At the very least, enhancing growth in these centers would provide employment and income opportunities for migrants.

Making Policy Choices

Several broad types of policy choices could be made in response to the types of needs and settlements

identified earlier. One set of policy choices relates to resource allocation, that is, which set of problems and settlement categories are in greatest need of attention? If resources were unlimited, there would be no problem with addressing all options simultaneously. However, resources are generally scarce and choices among alternatives must be made. A second set of policy choices relates to the specific questions, actions, and tasks that need to be addressed to assist settlements with their development needs.

Allocating Scarce Resources

This section highlights some broad approaches to making policy choices in the face of resource scarcity. While a number of different criteria might serve as resource allocation guides, several stand out. One standard to guide decisions is the efficiency concept; the primary concern of this concept is accomplishing the greatest good with a given level of input. A second criterion is redistribution. The emphasis of this plan results in diverting resources from the haves to the have nots, or from those settlements with a given resource, for example, population, to those without it. A third standard for allocating resources is represented by equality, equal shares for all.

Table 12 provides information about the population of Nebraska's incorporated places. The data contained in the table can be used to illustrate the different outcomes that might flow from different distribution rules. The table shows all incorporated places in the state in 1980 divided into quintiles (fifths). The first quintile, containing the smallest settlements of the state, contains just 0.75 percent of the population of incorporated places, if Lincoln and Omaha are included in the base. If

Table 12 - Percentage share of incorporated place population by each fifth and top five percent of Nebraska places, 1980

Population quintiles (fifths)	Percentage share of incorporated place population	Number of places
Lincoln and Omaha included:		
Lowest fifth	0.75	107
Second fifth	1.85	107
Middle fifth	3.47	107
Fourth fifth	7.32	107
Highest fifth	86.61	107
Top 5 percent	71.14	27
Total	100.00	535
Lincoln and Omaha excluded:		
Lowest fifth	1.29	107
Second fifth	3.18	107
Middle fifth	6.00	107
Fourth fifth	12.61	106
Highest fifth	76.91	106
Top 5 percent	51.18	27
Total	100.00	533

Nebraska's two largest cities are excluded, the first quintile contains 1.29 percent of the population of incorporated places. The population share of the largest 5 percent of Nebraska's places is also shown in table 12.

If the efficiency rule were used to make allocations, the population indicator would dictate that resources for developing and assisting the settlement system should go to the fewest places with the largest proportion of population. The top quintile, or the top 5 percent of Nebraska's incorporated places, might satisfy this

requirement. For example, the largest 5 percent of the state's incorporated places (N=27) contains 71.1 percent of the municipal population, if Omaha and Lincoln are included in the base and 51.2 percent if they are excluded. Stressing the efficiency criterion, then, would result in a growth center strategy.

Redistribution, on the other hand, would dictate the allocation of resources to the have nots, those communities with the fewest residents. As table 12 illustrates, the bottom quintile of Nebraska's settlements best meets this standard, and assistance would be provided to 107 places (0.75 to 1.29 percent of the population of incorporated places). Allocating resources according to the redistribution criterion would primarily mean managing decline, because the beneficiaries would be the state's smallest places.

Many other factors could guide resource allocation. The significance of using population as an indicator of need is not to suggest that it is more meaningful than other indicators, it merely provides an illustration of how policy choices might be made. Development potential, condition of infrastructure, employment change, and income change are all potential indicators of need.

Strategies for Assisting Places

A second set of policy choices revolve around issues of task, action, and strategy. What are the options for each of the areas of need?

Small Rural Settlements. Places in this category need assistance in managing decline and maintaining quality of life. Managing decline would require assistance in developing new leadership, local government management, and decisionmaking tools and approaches.

Maintaining quality of life would require assistance in assessing community and resident well-being, identifying action strategies, and implementing assistance.

Assistance in managing decline should emphasize assessing community service needs, alternative service delivery strategies, fiscal and resource base issues, leadership, and related issues. The League of Nebraska Municipalities, Nebraska Department of Economic Development, regional councils of government, and the higher education system all represent potential sources of assistance. At present, none of these organizations has a concerted program of research and outreach to help more than a few small rural settlements each year.

Maintaining quality of life will require developing community needs assessment methodologies and delivering strategic planning assistance for sorting through community well-being issues. This strategy seems particularly important in the more isolated, small rural places with sizable elderly populations. The Nebraska Department of Social Services, community action agencies, area agencies on aging, UNL's Cooperative Extension Service and College of Home Economics, UNO's Gerontology Program and School of Social Work, and UNMC's Gerontological Nursing Program all represent resources for addressing quality of life issues. The primary need is probably not additional resources but identifying existing resources to meet crucial community needs, as determined by the community.

At the same time, there will be significant needs for assistance in the environmental and health areas as new federal and state regulations, as well as aging infrastructure systems, confront small places. State agencies, such as the Department of Environmental Control, Department of Health, and Department of Roads, would be important in providing assistance to deal with

the unique needs that often result from population decline in very small rural settlements.

Particularly problematic questions will include: What are the basic services that very small rural settlements can, and need, to offer? How do we define and measure quality of life? Who should be responsible for this? For example, is a community water system a basic community service? What should be done if the water supply source or distribution system in a settlement with 45 residents becomes obsolete or contaminated?

Beyond these specific strategies and issues for assisting small rural places in Nebraska, state government might consider developing an advocacy office for small towns. This could take the form of a small town ombudsman, a unit within the governor's office or the Department of Economic Development, or a new stand-alone community affairs agency. Not only could such an entity act as a catalyst for efforts to assist and better understand small places in Nebraska, but it could act to coordinate and assess the impact of state and federal programs and policies upon small settlements in Nebraska.

Middle-Sized Settlements. The primary need for places in this category is for strategic economic and community development planning assistance. As indicated earlier, many of these settlements have played a role as trading centers, and that role is changing in response to the variety of forces that are currently at work in Nebraska. While some middle-sized places will need to do some work on basic community facilities and services, their fundamental need will be to develop a community vision of what the economic future holds and how local residents can shape that economic future.

In simplest terms, expert assistance that is sensitive to local traditions, preferences, and needs is essential (Reed, Reed, and Luke, 1987). Strategic economic development planning should focus on identifying: Major external and internal trends affecting the community, the issues that seem most important to local residents, aspects of these issues that the community can affect, and concrete and achievable action steps.

Currently, UNO's Department of Public Administration and Center for Applied Urban Research provide such services and have worked with the Nebraska Department of Economic Development to develop self-help resource materials for community use. UNO's College of Business has also provided strategic business planning for rural communities through a summer program relying on faculty and students. UNL's Cooperative Extension Service offers a mainstreet business assistance program, and UNL's College of Architecture offers a community design service that encompasses some strategic planning concepts.

Therefore, a base of services that can address the needs of middle-sized places exists in Nebraska. The most glaring missing ingredient is an effort to coordinate and focus such services on selected types of settlements. Because much of the public resource base in Nebraska exists in the higher education system, a partnership among state government, higher education, local and regional government, and community organizations might be a workable first step in addressing the strategic planning needs of middle-sized places in Nebraska.

Large Urban Places. Some places in Nebraska have been able to post regular gains in population and this is, in part, a function of their ability to increase jobs and retail and wholesale trade. These settlements (relative to

most other Nebraska communities) can be labeled growth centers.

One policy option for assisting Nebraska settlements is to provide help to these growth centers to further enhance their growth. Typically, when implementing a growth center strategy, state resources are focused on a growing incorporated place with a regional influence. Some growth center strategies also emphasize area or regional development (Moseley, 1974). Regardless of the particular geographic area of focus, the basic approach is to coordinate and direct development assistance to growth centers whether it is deregulatory, financial, or programmatic. The rationale is that focused assistance will be more likely to stimulate growth and result in greater payoffs for a given monetary expenditure. Growth center strategies also attempt to build on the concept of settlement systems, and assume that growth impulses will spread throughout the adjacent region. As a result, both the growth center (if it is a single community) and surrounding smaller places benefit (Hansen, 1971).

While the particular features of state growth center programs differ, they generally specify goals, processes, and mechanisms to guide the designation of growth centers, subsequent state and local government actions needed to foster the development of growth centers, and tools to achieve growth (Warren, 1980). While the federal government took the lead in exploring the potential of the growth center concept for regional development in the 1960s, states have the most detailed experiences. Among some prominent uses of growth center strategies are those of Massachusetts and North Carolina. Iowa considered a growth center strategy comprised of multicounty regions (Schwartz Associates, 1985).

A Regional Strategy. Emotions bind most of us to our home towns and communities. All communities strive for growth and prosperity, but not all places can expect to grow forever. Some places (usually small ones) can expect little growth or decline in population and economic activity. Much of the reason for decline in these places is the changing function of places in Nebraska and the Great Plains.

Many places that formerly performed primarily central place (marketing) functions have lost some, or all, of that function, often to other nearby markets. Improved transportation has allowed local consumers to bypass smaller centers to patronize larger centers. So, the central place (market) function has become increasingly concentrated in fewer centers.

Other places have maintained their market function in conjunction with other functions, such as industry, transport, recreation, and tourism. Still other places have taken on completely new functions to replace or supplement the declining central place role. For example, some places have become the bedroom communities of nearby larger settlements.

Few communities ever ask whether they should expect to grow. Rather, most places insist on growth, even when expected growth would be almost impossible.

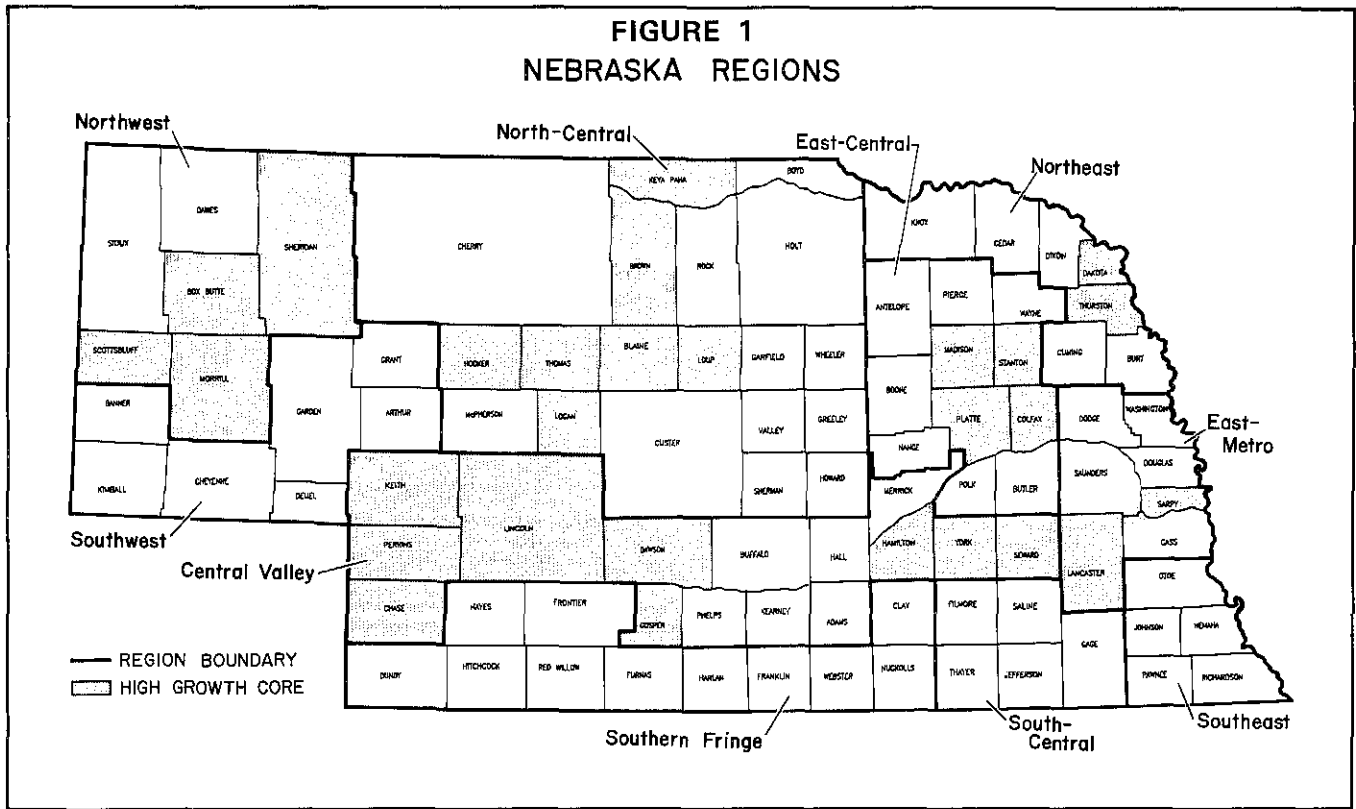
Inevitably, communities will compete among themselves for revenue-generating activity (jobs) and for financial assistance from sources outside the local area, especially state aid. Such competition is understandable and should be expected. However, interests beyond the local level, for example, state government, probably should no longer reward local competition, but should foster cooperation among places. In other words, the state should consider fostering and rewarding regional approaches to economic development.

Each of the three strategies outlined earlier--managing decline in small rural places, strategic planning for middle-sized places, and assisting growth centers--would involve providing assistance and resources to individual places. A fourth alternative would be to focus on regional groupings of places that cut across size categories and that are linked in a functional manner.

A regional approach is advantageous for several reasons. First, there are not enough resources to assist each settlement in the state to attain its desired level of development. In fact, there are not enough resources in all of Nebraska to build and maintain the infrastructure needed in all places in the state. Second, individual places may vary in their growth potential and need for assistance over time, therefore, assistance at one time may be unwarranted at another. Providing assistance programs regionally would tend to smooth out the variations in level of need over time. A regional approach might also return the focus of local development to cooperation and collaboration of earlier years. Fourth, real savings could be realized through economies of scale if communities, and counties, would actively share expenses, services, and facilities.

Figure 1 shows regions of the state based on the change in populations of settlements from 1970 to 1980 and based on the commuting patterns between counties in 1980. The result is a portrayal of a minimum number of regions in Nebraska with what might be termed demographic integrity, that is, where the counties have growth trends and other characteristics in common. Table 13 ranks these regions by population size and the number of settlements. The regions portrayed are but one concept of development areas that transcend the individual settlement scale and divide the Nebraska settlement system into meaningful subareas. These

FIGURE 1
NEBRASKA REGIONS



subareas, or other versions, might function well as development regions for focusing future state actions.

Table 13 - Population and number of settlements in Nebraska's regions, based on incorporated place growth, 1970-80

Region	Incorporated places					
	Population			Settlements		
	No.	%	Rank	No.	%	Rank
Eastern Metro	602,562	53.1	(1)	71	13.3	(3)
Central Valley	186,973	16.5	(2)	91	17.0	(1)
East Central	82,532	7.3	(3)	65	12.1	(4)
Northwest	53,754	4.7	(4)	24	4.5	(9)
South Central	43,711	3.9	(5)	49	9.2	(7)
Northeast	42,789	3.8	(6)	50	9.3	(6)
North Central	39,715	3.5	(7)	73	13.6	(2)
Southern Fringe	38,524	3.4	(8)	60	11.2	(5)
Southeast	29,331	2.6	(9)	38	7.1	(8)
Southwest	14,416	1.3	(10)	14	2.6	(10)
Total ¹	1,134,307	100.1	-	535	99.9	-

¹ = Not applicable.

Percentages may not total 100.0 percent due to rounding.

Endnotes

1. The U.S. Bureau of the Census defines the urban population as consisting of all persons living in urbanized areas and in places of 2,500 inhabitants or more outside urbanized areas. The population not classified as urban constitutes the rural population.

2. Unless otherwise indicated, data presented in this chapter are drawn from various censuses of population conducted by the U.S. Bureau of the Census.

3. Metropolitan places, or Metropolitan Statistical Areas, as the U.S. Bureau of the Census classifies them, are geographic areas consisting of a large population nucleus (at least 50,000 people) and adjacent communities that have a high degree of economic and social intergration with the nucleus. A metropolitan area may contain more than one city with a population of 50,000, more than one county, and may cross state boundaries.

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Nebraska's Small Towns and Their Capacity for Economic Development

2

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Small Nebraska towns have declined in population and wealth, while facing increasing demands, higher costs, and more problems. For them, economic development may be a way out. We found that participation was related to in-place governmental capacities and physical facilities. In turn, these capacities were related to the size and wealth of the communities. However, some smaller and poorer communities did participate, against the odds, suggesting that commitment is required. Federal, state, and other agencies offer help in development, apparently on demand. Rather, help should be directed to those small towns with a demonstrated capacity and commitment, given limited resources. Other small towns need help to build capacities toward a threshold of economic development.

Small towns face hard times. The problem of small towns, those with fewer than 2,500 residents, is especially acute in Nebraska. Ninety percent of Nebraska towns have fewer than 2,500 people, and slightly over 15 percent of the state's population live in these communities. Most of Nebraska's small towns are in rural areas. The decline in agriculture in recent years has added difficulties.

The role of most small communities, especially in rural areas, is changing. Small towns used to be retail centers for nearby areas. However, the coming of the automobile, the improvement of roads, and other changes have altered the role of small towns. For example, farmers in Colfax County may drive 30 miles or more to shop in Columbus or Fremont, or even in Omaha, rather than in nearby villages. Rural small towns now often have only convenience markets, hardware stores, and limited other retail businesses. The bedroom community phenomenon has extended far out from metropolitan

centers. These trends have reduced the tax base and the population, while the cost of government has increased and people demand more public services.

The problems of small towns are serious. Many small towns are poor, in income per capita and in fiscal resources. Most of them have inadequate physical facilities, governmental and commercial. Many have limited capacities for positive, effective government. While these small towns may continue to decline, they are unlikely to disappear. Their citizens deserve the same access to good public facilities and economic opportunity as persons in large cities.

This chapter focuses on the problems of small towns, especially their governments. One of the principal means of helping small towns is economic development, a complex set of efforts aimed at bringing more retail, commercial, and manufacturing establishments and jobs to small towns. Some of these towns have been successful at economic development, but many more have not.

We examine the characteristics of communities that are indicators of success in economic development. Each community, of course, must demonstrate a capacity to start and carry on development. Because of limited funds for local projects and staff assistance by federal, state, and regional agencies, help should go to these towns and villages that are most likely to succeed. For those with less potential, assistance should be directed at getting them ready to participate.

Nebraska's Small Towns and Declining Agriculture

Because most of Nebraska's small towns and villages are located in rural areas, the decline of agriculture, the decrease in farmland value, and the sharp downturn in the number of farm families are

factors that must be considered when determining how to improve small towns. While the farmer may be the one who is affected most directly by these changes, those who are dependent on agriculturally based business investment, such as rural counties, villages, towns, and cities, also face severe economic stress.

The U.S. Senate Committee on Governmental Affairs (1986) reported many changes affecting rural communities and found that:

- States such as Nebraska, where agricultural values make up a sizeable portion of local property tax base, face a substantial risk of rapidly declining tax revenue;
- At the same time, local government revenues are declining rapidly, service demands are rising; and
- As farmland values decline, commercial market values decline, and retail and service businesses confront severe economic dislocation.

According to Buttel (1982), "declines in the size of the family work force and farm population lead to declines in the population of rural communities and trade centers greater than the initial loss of farm personnel and their families." A reduction in agricultural jobs results in the loss of two, three, or four retail and service jobs and corresponding declines in the economic vitality of rural communities.

Bare (1986) says:

Production capacity for grain and livestock is expected to expand much faster than world demand. Technology will reduce the need for labor in agriculture and will put pressure on renewing land for

production. These trends suggest that the economic function of some small communities will disappear and that some small towns will cease to exist.

Income and land values would have to increase in the agricultural sector for the business climate of rural communities to improve, but this is unlikely. Almost 75 percent of the new jobs in rural areas between 1962 and 1978 were in service industries, and 20 percent were in manufacturing; consequently, employment in industries such as farming dropped substantially as a percentage of economic activity (Stanfield, 1983). While this trend continues, overall economic decline has increased in states where agriculture remains a dominant economic force. This rural decline has occurred at the same time that federal resources for rural economic development efforts have declined. General revenue sharing has been eliminated. Most Farmers Home Administration programs have been cut severely, as well as rural programs directed by the Economic Development Administration and the Department of Housing and Urban Development (Rauch, 1985).

Small communities directly affected by these changes face difficult decisions concerning their survival. Small towns must become more aggressive in stimulating business investment to stem the tide of economic disinvestment and reduced population. Many rural areas have great diversity in the capabilities, resources, and commitment within the community, and they can undertake such an effort.

Assistance to Small Towns

Small communities and their governments must be reasonably effective in undertaking positive programs to be successful in economic development. The communities

must also have adequate buildings, streets, and water and sewer systems to increase the number of businesses and jobs. These elements are the governmental and physical infrastructure of a community, or the in-place capacity for effectiveness.

Some early studies described small town governments, especially those in rural areas, as "bad, weak, and incompetent" (Martin, 1957). These studies described small town governments as mostly part-time and volunteer organizations that were run informally by friends and neighbors. Taxes were low, there were few decisions, and government activity was minimal (Howitt, 1978).

These early studies reveal that few small towns have cooperative programs with federal, state, or local governments, and even fewer have adequate records of policies and actions. Few of these communities hire professional managers or technicians. Because they have only limited tax revenues, small town government salaries are low. The jobs are attractive only to people in the local labor market. The studies also show that small towns and villages have few professional public management systems, such as modified accrual accounting, a complete budget system, a purchasing program, or even an organized personnel plan.

Recent studies of small town governments focus on the consequences of being small. Limited population, low tax base, and, usually, a widely scattered population create special governmental problems. Economies of scale are impossible to achieve, especially in social services. A small tax base provides small towns with limited revenues, making it difficult to borrow money and to develop public services, streets, and water and sewer systems (Brown, 1981).

The inherent difficulties for small town governments have been intensified recently with the addition of problems normally associated with larger communities. Federal and state requirements for improved water and sewer systems require sophisticated skills in managing plant construction and operation (Menzel, 1978). Crime in small towns has increased, demanding better trained law enforcement officers (Fetter, 1980). The shift of responsibility for human services to state and local governments has added to the public management burden of small communities. Also, many federal, state, and regional programs have required development of new skills in coordination (Reed, 1978).

During the past 10 to 15 years, federal and state governments have created institutions that help local governments face these new and difficult problems. Councils of government, regional planning councils, economic development districts, and many specialized public and nonprofit organizations have been formed. Some of these organizations help small governments improve their capacity for planning, policymaking, and decisionmaking. In addition to capacity building, some organizations provide technical assistance, which includes loaning experts to local governments to help prepare budgets, developing personnel and accounting systems, and installing computers.

"Technical assistance frequently means that we become staff members of local governments, doing their work, except they don't pay us," said one official of a helping organization recently. There often is not much in the way of a permanent transfer of skills. Many staff members of the outside helping organizations say that their experience shows that local leadership is necessary to develop lasting skills to cope with problems, including economic development. The old adage, "there's no point

in helping those who can't, or won't, help themselves," is clearly true for local governments.

Local Development in Small Towns

This chapter makes several assumptions about the nature of economic development in smaller communities, particularly those located in rural settings. Smaller jurisdictions vary greatly in size, rates of growth, access to financial resources, and the constraints they face in building a strong economic base. Still, certain elements that are controlled locally will be crucial for these communities to excel within the constraints they face from forces beyond their control. Some of the most important elements are leadership, physical infrastructure, fiscal revenue base, and organizational capacity.

Some suspect that communities with appropriate physical and organizational capacities have succeeded in promoting economic development. A minimum level of service and facilities is necessary to spur economic activity, whether in education, basic physical infrastructure (streets, sewers, and water lines), or public facilities (fire stations, swimming pools, and water plants). Further, a community needs a minimum staff to implement economic development strategies. This capacity can be located in both the public and private sector, but a lack of basic organizational capacity within the local government presents serious problems for long-term economic growth.

It takes financial resources to provide facilities, services, and personnel. Small towns vary greatly in tax and revenue bases. However, those that are likely to succeed will be willing to commit the extra effort to

secure the resources necessary to reach a minimum level of capacity.

Perhaps the most important element for successful economic development efforts, and the one that is most amorphous, is leadership. Communities that consistently demonstrate strong, institutional leadership are the ones most likely to succeed economically (Reed, 1977). All of these elements are interrelated to some extent.

It is important to understand that success in economic development means different things in different situations. Many smaller jurisdictions face serious economic decline which is beyond their control, for example, decline in the agricultural economy along with structural changes leading to a decline in family farms. Success may be measured by the ability to maintain or reduce the decline of business activity, rather than expand activity. Some communities might find their economies growing despite any efforts on their part because they are situated in an advantageous location or have other external advantages. However, even these communities might do better if they were stronger in organization, physical infrastructure, or leadership.

Community Problems and Economic Development

Smaller communities in Nebraska face a range of developmental problems. Clearly, some problems are more serious than others. In 1984, a survey was taken of 264 chief executive officers (CEOs) (mayors and city managers) of communities in Nebraska with populations of less than 50,000 who had applied for Community Development Block Grant funds through the state Department of Economic Development. The survey determined the developmental needs of these communities and the availability of state and federal assistance to

meet these needs (Reed, 1986). About 50 percent of the cities responded to the questionnaire. The replies reflected a representative distribution by size of population of municipalities in Nebraska.

Table 1 shows that the most severe problems facing these communities are attracting and supporting commercial facilities, attracting new jobs, and the condition of streets and sidewalks. Other major problems were drainage and flooding problems and the lack of housing construction. When asked to rate their local facilities, the respondents listed resources to attract economic development, industrial and commercial buildings, and central business districts to be the least adequate (table 2). Cultural facilities, streets and roads, and parks and other recreation facilities were also rated less than adequate, or poor, by many respondents.

Table 1 - Problems affecting economic development of communities in Nebraska, 1984

Item	Problem			
	Severe or moderate		Minor or no	
	Number	Percent	Number	Percent
Condition of housing	90	40.2	134	59.8
Lack of medical care	100	44.6	124	55.4
Conditions of streets and sidewalks	126	56.2	98	43.8
Unemployment	109	48.7	115	51.3
Retaining or attracting middle- or upper-income taxpayers	95	43.2	124	56.4
Retaining existing jobs	95	42.2	130	57.8
Attracting new jobs	183	81.7	40	17.9
Drainage/flooding problems	95	42.4	129	57.6
Lack of commercial facilities	89	39.9	134	60.1
Difficulty in attracting or supporting commercial facilities	131	59.0	91	41.0

Table 2 - City officials' ratings of the adequacy of their facilities to stimulate economic development, Nebraska, 1984

Item	Number of Officials Rating:				
	Excellent	Adequate	Less than adequate	Poor	Not available
Water treatment and delivery systems	63	125	21	5	7
Sewer and drainage	49	104	43	14	9
Solid waste disposal	54	123	20	16	8
Streets and roads	18	132	52	22	1
Parks and other recreation facilities	63	113	32	9	8
Cultural facilities	10	94	54	18	33
Hospitals and clinics	50	68	10	10	75
Public transportation	1	59	31	26	94
Public buildings	35	133	39	11	5
Public school buildings	55	135	16	7	6
Industrial and commercial buildings	3	103	74	18	18
Central business district	17	113	55	35	3
Business and industrial sites suitable for development	25	82	69	21	19
Resources to attract economic development	11	45	98	37	22

Table 3 indicates that when these responses are examined by size of population, some trends become apparent. As population size decreases, the severity of perceived problems increases in a variety of areas, such as lack of medical care, condition of streets and sidewalks, and lack of commercial facilities. In other areas, including drainage and flooding, retaining jobs, and preventing unemployment, larger communities also perceive more severe problems.

Many of these responses are not surprising. It should be expected that medical care and public infrastructure, such as streets, would be considered more severe problems in rural areas because of smaller property tax bases. These findings are also consistent with a national study of the developmental needs of small cities (U.S. Department of Housing and Urban Development, 1978).

Table 3 - Developmental needs of cities, by population, Nebraska, 1984

Item	Population					
	Less than 1,000		1,001 to 2,500		Over 2,500	
	Number	Percent	Number	Percent	Number	Percent
Lack of medical care:						
Moderate/severe problem	74	74.0	18	18.1	8	8.0
Not severe problem	38	30.6	38	30.6	48	38.7
Condition of streets:						
Moderate/severe problem	71	56.3	33	26.2	22	17.5
Not severe problem	40	40.8	24	24.5	34	34.7
Retain/attract middle-income taxpayers:						
Moderate/severe problem	59	62.1	14	14.7	22	23.2
Not severe problem	48	38.7	42	33.9	34	27.4
Retaining jobs:						
Moderate/severe problem	42	44.2	20	21.1	33	34.7
Not severe problem	70	53.8	37	28.5	23	17.7
Attracting new jobs:						
Moderate/severe problem	84	45.9	49	26.8	50	27.3
Not severe problem	27	67.5	7	17.5	6	15.0
Drainage/flooding:						
Moderate/severe problem	46	48.4	19	20.0	30	31.6
Not severe problem	65	50.4	38	29.5	26	20.2
Lack of housing construction:						
Moderate/severe problem	54	55.1	22	22.4	22	22.4
Not severe problem	57	45.2	35	27.8	34	27.0
Lack of commercial facilities:						
Moderate/severe problem	52	58.4	24	27.0	13	14.6
Not severe problem	60	44.9	32	23.9	42	31.3
Difficulty attracting/supporting commercial facilities:						
Moderate/severe problem	76	58.0	32	24.4	23	17.6
Not severe problem	36	39.6	25	27.5	30	33.0

The relationship between the perceived quality of local facilities and population was also explored. Respondents from smaller jurisdictions considered the quality of most facilities to be poor and a serious problem.

Table 4 shows the relationship between per capita income and perceived quality of facilities. Chief executives in communities with low per capita incomes ranked water treatment, parks and recreation, hospitals and clinics, public school buildings, and resources to attract economic development, as poor or not available in greater percentages than leaders in communities with higher per capita incomes. The ranking for hospitals and

Table 4 - City officials' perceptions of the condition of their facilities, by per capita income of residents, Nebraska, 1984

Facility and condition	Total respondents	Per capita income						Significance
		High		Medium		Low		
		No.	%	No.	%	No.	%	
Water treatment	221	44	19.9	139	62.9	35	17.2	
Adequate/excellent	188	41	21.8	118	62.8	29	15.4	
Inadequate/not apply	33	3	9.1	21	63.6	9	27.3	.10
Sewer/drainage	219	39	17.8	141	64.4	39	17.8	
Adequate/excellent	153	25	16.3	98	64.1	30	19.6	
Inadequate/not apply	66	14	21.2	43	65.2	9	13.6	.46
Solid waste disposal	221	44	19.9	138	62.4	39	17.6	
Adequate/excellent	177	41	23.2	107	60.5	29	16.4	
Inadequate/not apply	44	3	6.8	31	70.5	10	22.7	.04
Streets and roads	225	44	19.6	141	62.7	40	17.8	
Adequate/excellent	150	37	24.7	89	59.9	24	16.0	
Inadequate/not apply	75	7	9.3	52	69.3	16	21.3	.02
Parks and recreation	225	44	19.6	141	62.7	4	17.8	
Adequate/excellent	176	38	21.6	111	63.1	27	15.3	
Inadequate/not apply	49	6	12.2	30	61.2	13	26.5	.10
Cultural facilities	209	43	20.6	133	63.6	33	15.8	
Adequate/excellent	104	22	21.2	69	66.3	13	12.5	
Inadequate/not apply	105	21	20.0	64	61.0	20	19.0	.42
Hospitals/clinics	213	44	2.7	133	62.4	36	16.9	
Adequate/excellent	118	35	29.7	74	62.7	9	7.6	
Inadequate/not apply	95	9	9.5	59	62.1	27	28.4	.00
Public transportation	211	41	19.4	133	63.0	37	17.5	
Adequate/excellent	60	11	18.3	39	65.0	10	16.7	
Inadequate/not apply	151	30	19.9	94	62.3	27	17.9	.93
Public buildings	223	43	19.3	141	63.2	39	17.5	
Adequate/excellent	168	35	20.8	106	63.1	27	16.1	
Inadequate/not apply	55	8	14.5	35	63.6	12	21.8	.44
Public school buildings	219	43	19.6	140	63.9	36	16.4	
Adequate/excellent	190	40	21.1	122	64.2	28	14.7	
Inadequate/not apply	29	3	10.3	18	62.1	8	27.6	.13
Industrial/commercial buildings	216	43	19.9	138	63.9	35	16.2	
Adequate/excellent	106	26	24.5	71	67.0	9	8.5	
Inadequate/not apply	110	17	15.5	67	60.9	26	23.6	.01
Central business districts	213	43	19.3	140	62.8	40	17.4	
Adequate/excellent	130	24	18.5	89	68.5	17	13.1	
Inadequate/not apply	83	19	20.4	51	54.8	23	24.7	.05
Business/industrial sites	216	44	20.4	137	63.4	35	16.2	
Adequate/excellent	107	21	19.6	79	73.8	7	6.5	
Inadequate/not apply	109	23	21.1	58	53.2	28	23.7	.00
Resources to attract economic development	213	44	20.7	132	62.0	37	17.4	
Adequate/excellent	56	18	32.1	31	55.4	7	12.5	
Inadequate/not apply	157	26	16.6	101	64.3	30	19.1	.04

clinics and resources to attract economic development was significant at the 0.05 or greater level.

A look at small community executives who think that the local population has declined, shows that perceptions of the quality of public facilities changes substantially.

Table 5 shows that the number of small community executives who think their local facilities are less than adequate, poor, or not available is consistently higher than the percentage for all respondents. This is particularly pronounced for solid waste disposal, streets and roads, parks and recreation, and resources to attract economic development. Only the ratings of sewer and drainage and public school buildings are lower for small communities than for all communities.

Smaller, poorer communities and those facing loss of population perceive their local facilities to be nonexistent or in poor condition. This is consistent with other studies that show that basic physical infrastructure is a severe problem for rural areas, particularly poorer rural areas (U.S. Department of Housing and Urban Development, 1978). These community executives think that their economic development facilities, industrial and commercial buildings, central business districts, and commercial sites are less than adequate. Their ability to compete for new business investment is likely to be hampered severely unless these facilities are improved.

Table 5 - City officials' perceptions of the condition of local facilities in communities that perceive population decline, Nebraska, 1984

Facility	Condition of facilities			
	Excellent or adequate		Less than adequate, poor, or not available	
	Number	Percent	Number	Percent
Water treatment/delivery	39	81.3	9	18.8
Sewer/drainage	36	72.0	14	28.0
Solid waste disposal	33	70.2	14	29.8
Streets and roads	25	50.0	25	50.0
Parks and recreation	33	66.0	17	34.0
Cultural facilities	19	43.2	25	56.8
Hospitals/clinics	14	31.8	30	68.2
Public transportation	9	20.9	35	79.5
Public buildings	32	64.0	18	36.0
Public school buildings	41	89.1	5	10.9
Industrial/commercial buildings	13	29.5	31	70.5
Central business districts	26	53.1	23	46.9
Business/industrial sites	16	37.2	27	62.8
Resources to attract economic development	9	19.6	37	80.4

Improving Local Facilities for Economic Development

Perhaps the major external resource available to Nebraska's smaller communities to improve public infrastructure and to build economic development facilities is the Community Development Block Grant Program (CDBG). This program, operated by the Nebraska Department of Economic Development since 1982, has provided over \$40 million to improve community and economic conditions in communities with a population of less than 50,000. While the emphasis has been on assisting low- and moderate-income individuals, benefits have spread to others as well. It would seem that communities concerned about their public facilities would actively seek such funds.

We evaluated respondents' applications for CDBG funds in 1982, 1983, or 1984. Table 6 shows that no clear pattern exists for 1982, but in 1983 and 1984, cities with populations of more than 1,500 were more likely to apply for funds than cities with populations of less than 1,500. The number of applications submitted by the smallest communities increased slightly, while those

Table 6 - Applications for Community Development Block Grant funds, by population, Nebraska, 1982-84

Population	Applications					
	1982		1983		1984	
	Number	Percent	Number	Percent	Number	Percent
Less than 300	11	50.0	20	64.5	21	67.7
300-499	10	71.4	9	60.0	7	50.0
500-999	8	44.4	13	65.0	11	52.4
1,000-1,499	8	80.0	4	40.0	5	50.0
1,500-2,499	4	50.0	8	88.9	6	75.0
2,500-4,999	2	28.6	6	75.0	7	100.0
More than 5,000	11	84.6	12	85.7	13	92.9

submitted by communities with populations of more than 2,500 increased dramatically.

Table 7 indicates that when the number of applications is compared with per capita income, the findings are even more pronounced. Most of the communities that were classified as high per capita income applied for CDBG funds in each of the 3 years. However, the percentages are much lower for the low and medium per capita income communities, particularly in 1982 and 1983. Clearly, per capita income affects the number of applications for CDBG funds.

Table 7 - Applications for Community Development Block Grant funds, by per capita income, Nebraska, 1982-84

Per capita income	Applications					
	1982		1983		1984	
	Number	Percent	Number	Percent	Number	Percent
Low	16	43.2	21	46.7	29	63.0
Medium	29	64.4	40	78.4	30	62.5
High	9	90.0	11	100.0	11	100.0

Finally, the relationship between the number of applications for CDBG funds and the perceived condition of facilities was analyzed (table 8). It was assumed that the communities that perceived their town and economic development facilities to be poor would be most likely to apply for CDBG funds to improve them. This appears to be true for most facilities, except hospitals and clinics and public school buildings. This variation may occur because these facilities are ineligible for CDBG funds. However, many communities with excellent public facilities applied for CDBG funds, indicating that there may be less association between need and application for funds than might be expected.

Table 8 - Applications for Community Development Block Grant funds, by respondents' perceptions of the condition of community facilities, Nebraska, 1982-84

Facility	Applications					
	1982		1983		1984	
	No.	%	No.	%	No.	%
Excellent or adequate:						
Water treatment	20	69.0	27	81.8	19	59.4
Sewer/drainage	20	69.0	26	81.3	20	64.5
Solid waste	23	74.2	26	78.8	21	63.6
Streets and roads	19	70.4	23	79.3	17	60.7
Parks/recreation	20	76.9	24	82.8	18	64.3
Cultural	14	77.8	18	85.7	12	60.0
Hospitals/clinics	16	80.0	17	81.0	14	70.0
Public transportation	9	90.0	7	70.0	7	70.0
Public buildings	19	73.1	25	83.3	19	65.5
Public school buildings	25	73.5	31	83.8	23	63.9
Industrial/commercial buildings	14	70.0	16	72.7	11	50.0
Central business district	16	76.2	17	77.3	12	54.5
Business/industrial sites	11	73.3	13	76.5	10	62.5
Adequate, poor, or not available:						
Water treatment	7	100.0	7	100.0	7	100.0
Sewer/drainage	7	100.0	8	100.0	6	75.0
Solid waste	5	83.3	8	100.0	5	71.4
Streets and roads	9	90.0	11	91.7	9	75.0
Parks/recreation	8	72.7	10	83.3	8	66.7
Cultural	11	73.3	12	75.0	10	62.5
Hospitals/clinics	10	66.7	15	83.3	10	55.6
Public transportation	17	68.0	25	86.2	17	60.7
Public buildings	8	80.0	9	90.0	7	70.0
Public school buildings	1	100.0	1	100.0	1	100.0
Industrial/commercial buildings	12	80.0	15	93.8	12	80.0
Central business district	12	75.0	16	88.9	13	76.5
Business/industrial sites	15	75.0	18	85.7	13	61.9

Participation in Economic Development

Economic development is a complex activity, involving governments, quasi-governmental groups and private organizations. A survey of Nebraska municipalities, conducted in 1987 (147 municipalities responded for a response rate of 27 percent), revealed that participation in economic development activities is associated with several key factors, including size of population of the community, per capita income, and the established capacity to undertake a variety of administrative functions, including networking or information-sharing with other communities.

A community's size also directly affects the strength of its administrative infrastructure. Finally, as suggested in the previous section, community size and per capita income affect local chief executives' perceptions of the severity of physical infrastructure problems. Participation in economic development is thus a complex phenomenon, and strategies to increase community participation require a multi-tiered approach, as described in the next section.

Population

Table 9 shows that few small communities participate in economic development. Only 9 percent of the participating communities had 300 or fewer people. Only 40 percent of the participants came from communities with a population of less than 1,000, although this group made up 56 percent of the communities surveyed. The nonparticipants may not realize the potential value of participating. Because they are not active governments, they may hold quarterly meetings only, and the city clerk, the only employee, may work just 3-5 hours a month.

Table 9 - Community participation in economic development, by size of population, Nebraska, 1987

Economic development	Population							Total
	Less than 299	300-499	500-999	1,000-1,499	1,500-2,499	2,500-4,999	More than 5,000	
Yes:								
Cities (No.)	7	8	16	13	10	9	16	79
Percentage	8.9	10.1	20.3	16.5	12.7	11.4	20.3	55.6
No:								
Cities (No.)	17	14	17	10	5	-	-	63
Percentage	27.0	22.2	27.0	15.9	7.9	-	-	44.4
Total:								
Cities (No.)	24	22	33	23	15	9	16	142
Percentage	16.9	15.5	23.2	16.2	10.6	6.3	11.3	100.0

- = no response.

Significance = 0.00001.

Administrative Infrastructure

The measure of administrative activity for the reporting communities is referred to as administrative infrastructure. This measure shows both the level, or intensity, of commitment to government (employees per 100 population) and the type of principal administrative officer in the municipality (city manager or city administrator).

We included two additional measures of administrative activity, the number of hours worked per week by the principal administrative officer (or manager or clerk) and the number of staff activities performed by the clerk, such as working on the budget or city plan, preparing staff studies, and writing federal grant proposals. The categories of hours worked and activities performed indicate the level of skills available and the time and capacity to use them.

Table 10 shows a strong relationship between administrative infrastructure and participation in economic development. It implies that an established capacity to undertake a variety of administrative functions is essential to undertaking economic development. No municipality with a low administrative infrastructure score participated in economic development, while 70 percent of those with a high score did so.

One of the traditional criticisms of the quality of small town government is an isolation from other governments. An isolated municipal government has no regular infusion of new ideas on public management or improvement in operations; no access to cost-saving cooperative activity; and, of course, no access to money. So, a second measure of administrative infrastructure is included, developing external governmental relationships. The score consists of frequency of use of consultants

Table 10 - Community participation in economic development, by quality of administrative infrastructure, Nebraska, 1987

Economic development	Administrative infrastructure			
	Low	Medium	High	Total
Yes:				
Cities (No.)	0	37	42	79
Percentage	0	46.8	53.2	55.6
No:				
Cities (No.)	6	39	18	63
Percentage	9.5	61.9	28.6	44.4
Total:				
Cities (No.)	6	76	60	142
Percentage	4.2	53.5	42.3	100.0

Significance = 0.0009.

from six major nonprofit organizations offering assistance and advice in the state.

Training activities are also measured. They are important in obtaining information about the range of governmental activities, including economic development. Training is both an information builder and a skill builder. Almost as important, participation in training activities represents a commitment, and a cost, to the local government that the end product will be an improvement in the quality of government.

Finally, a measure of the city's interactions with county governments, state agencies, and other cities is included. This is a particularly useful indicator, because cities must devote time to developing personal relationships and performing joint activities with other governments, such as flood control and purchasing agreements.

As shown in table 11, if a community has a high score on external relationships, there is a good chance (70 percent) that it will participate in economic development. However, if a municipality has a low score, then there is only about a 10 percent chance that it will participate in economic development.

The external relationships score, then, reflects the development of skills and knowledge about a range of governmental activities, including economic development. In addition, communities are willing to accept outside information, influence, and intervention in local government affairs.

Table 11 - Participation in economic development, by extent of external relationships, Nebraska, 1987

Economic development	External relationships (score)			
	Low	Medium	High	Total
Yes:				
Cities (No.)	2	27	50	79
Percentage	2.5	34.2	63.3	55.6
No:				
Cities (No.)	15	25	23	63
Percentage	23.8	39.7	36.5	44.4
Total:				
Cities (No.)	17	52	73	142
Percentage	12.0	36.5	51.4	100.0

Significance = 0.0001.

Population and Infrastructure

Size of community is a major factor in determining participation in economic development. Community size

(population) also directly affects the strength of a community's administrative infrastructure. Table 12 shows the strong relationship between size of community and administrative infrastructure, and table 13 shows the equally strong relationship between size of community and extent of external relationships.

All of the low scores and most (75 percent) of the medium scores are found in communities with less than 1,000 residents. By contrast, over 70 percent of all high scores are found in communities with more than 1,000 residents. About 70 percent of larger communities have high scores, but less than 35 percent of the communities with less than 1,000 residents have high scores.

As shown in table 13, the scores for external relationships almost parallel the scores for administrative infrastructure. Virtually all of the low scores and half of the moderate scores belong to communities with less than 1,000 residents. Communities with more than 1,000 residents have over half of all the high scores, no low scores, and just half of the moderate scores, although larger communities constitute somewhat less than half of the total sample.

Per Capita Income

Table 14 shows that over 70 percent of the communities with less than 1,000 residents were in the low per capita income group, while only 33 percent of these small communities were in the high per capita income group. In contrast, more than 60 percent of the towns with more than 1,000 residents were classified in the high per capita income group, and 25 percent were classified in the low per capita income group.

Table 12 - Comparison of the size of community and the adequacy of administrative infrastructure, Nebraska, 1984

Population	Administrative infrastructure (score)			
	Low	Medium	High	Total
Less than 299:				
Cities (No.)	4	17	3	24
Percentage	16.7	70.8	12.5	16.9
300 to 499:				
Cities (No.)	2	18	2	22
Percentage	9.1	81.8	9.1	15.5
500 to 999:				
Cities (No.)	-	21	12	33
Percentage	-	63.6	36.4	23.2
1,000 to 1,499:				
Cities (No.)	-	9	14	23
Percentage	-	11.8	23.3	16.2
1,500 to 2,499:				
Cities (No.)	-	4	11	15
Percentage	-	26.7	73.3	10.6
2,500 to 4,999:				
Cities (No.)	-	4	5	9
Percentage	-	44.4	55.6	6.3
More than 5,000:				
Cities (No.)	-	3	13	16
Percentage	-	18.8	81.3	11.3
Total:				
Cities (No.)	6	76	60	142
Percentage	4.2	53.5	42.3	100.0

- = no response.

Significance = 0.00001.

Table 13 - Comparison of the size of community and the extent of external relationships, Nebraska, 1987

Population	External relationships (score)			
	Low	Medium	High	Total
Less than 299:				
Cities (No.)	11	6	7	24
Percentage	45.3	25.0	29.2	16.9
300 to 499:				
Cities (No.)	8	11	3	22
Percentage	36.4	50.0	12.6	15.5
500 to 999:				
Cities (No.)	5	12	16	33
Percentage	15.2	36.4	48.5	23.2
1,000 to 1,499:				
Cities (No.)	1	10	12	23
Percentage	4.3	43.5	52.2	16.2
1,500 to 2,499:				
Cities (No.)	-	8	7	15
Percentage	-	53.3	46.7	10.6
2,500 to 4,999:				
Cities (No.)	-	4	5	9
Percentage	-	44.4	55.6	6.3
More than 5,000:				
Cities (No.)	-	8	8	16
Percentage	-	50.0	50.0	11.3
Total:				
Cities (No.)	25	59	58	142
Percentage	17.6	41.5	40.8	100.0

- = no response.

Significance = 0.0005.

Table 14 - Comparison of size of community and per capita income, Nebraska, 1987

Population	Per capita income			
	High	Medium	Low	Total
Less than 299:				
Cities (No.)	8	6	10	24
Percentage	33.3	25.0	41.7	16.9
300 to 499:				
Cities (No.)	3	15	4	22
Percentage	13.6	68.2	18.2	15.5
500 to 999:				
Cities (No.)	8	8	17	33
Percentage	24.2	24.2	51.5	23.2
1,000 to 1,499:				
Cities (No.)	8	7	8	23
Percentage	34.8	30.4	34.3	16.2
1,500 to 2,499:				
Cities (No.)	5	8	2	15
Percentage	33.3	53.3	15.3	10.6
2,500 to 4,999:				
Cities (No.)	6	1	2	9
Percentage	66.7	11.1	22.2	6.3
More than 5,000:				
Cities (No.)	15	1	-	16
Percentage	93.8	6.3	-	11.3
Total:				
Cities (No.)	53	46	43	142
Percentage	37.3	32.4	30.3	100.0

- = no response.

Significance = 0.0000.

These relationships were even more pronounced in the general population groups. Forty-two percent of the communities with less than 300 residents were classified as low per capita income, but only 8 percent of all communities with more than 2,500 residents were so classified. Clearly, Nebraska has many small towns and villages with low per capita incomes and populations. The key question is as follows: Does per capita income relate to participation in economic development activities?

Table 15 provides a partial answer. These data show that small communities participate at only half the rate of communities with more than 1,000 residents. For both groups of communities, however, poor communities participate at a lower rate than richer communities, although the differences are not statistically significant. Nevertheless, poor communities participate in economic

Table 15 - Comparison of the size of community, per capita income, and participation in economic development, Nebraska, 1987

Population	Per capita income			
	High	Medium	Low	Total
All towns with less than 1,000 residents:				
Number in group	19	29	31	79
Percent participating in economic development	42	31	45	39
All towns with more than 1,000 residents:				
Number in group	34	17	12	63
Percent participating in economic development	82	70	67	76
Total:				
Number in group	53	46	43	142
Percent participating in economic development	68	46	51	56

Significance = 0.0656.

development, thus, showing more willingness to bear burdens than larger and richer communities.

Conclusions and Policy Implications

Our findings illustrate many of the problems smaller towns in Nebraska encounter in stimulating economic activity. These communities often lack many of the basic ingredients necessary to stimulate economic activity. The communities that succeed, or attempt to stimulate economic development, appear to have certain characteristics that other communities lack.

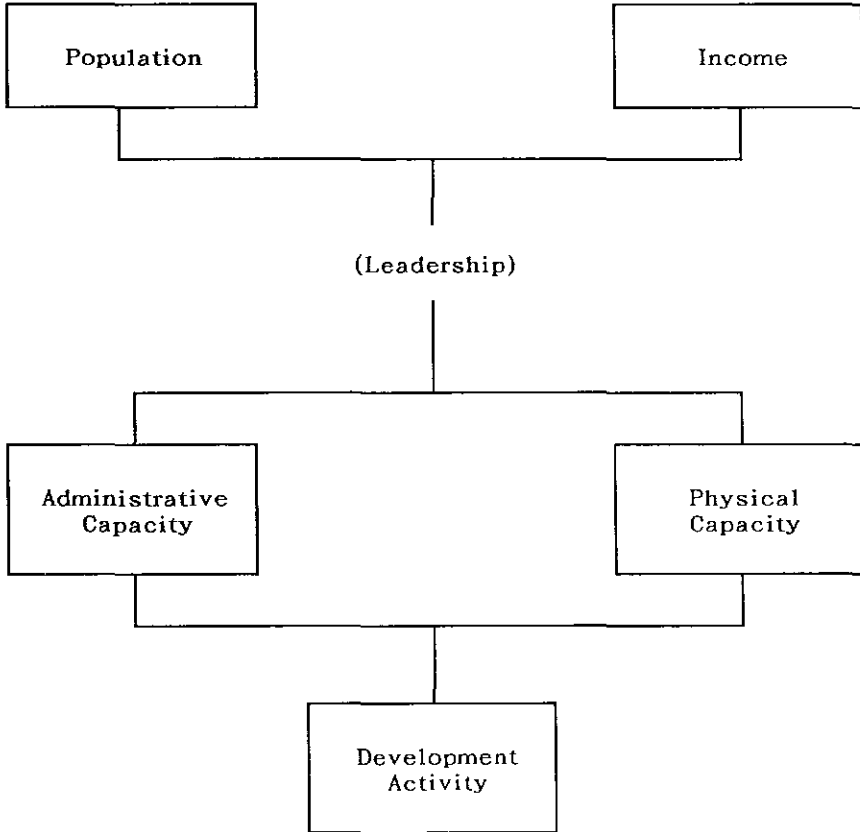
A Model for Small Town Development

While many factors are important in stimulating small town development, there appear to be certain elements that are necessary requisites for such activity. Figure 1 shows one approach to describing these relationships.

Two factors appear to be the most important requisites for development activity: Size and per capita income. Leadership is extremely important also, and is demonstrated through the level of development of the administrative and physical infrastructure. Leadership, however, is diffuse and difficult to measure. Our studies did not focus specifically on the role of leadership. It seems almost certain, however, that leadership, together with per capita income and community size, promote increased administrative and physical capacity. Such capacity, in turn, has much to do with increased economic development activity.

Participation in economic development appears to require an in-place governmental infrastructure. This infrastructure is composed of developed activities and

Figure 1
Model for Small Town Development



skills, as well as a sufficient level of personnel. Similarly, successful participation seems to demand an in-place pattern of external relationships with organizations in training, consulting, and working on joint projects. Also, it appears that communities that lack economic activity also lack adequate public facilities that are often associated with successful economic activity. In short, successful participation in economic development seems to require leadership and capacity.

What is the basis for this capacity? Per capita income is a fairly good predictor of capacity in administrative and physical development, and an established pattern of external relationships is also a good predictor of capacity. These elements, in turn, provide the basis for economic development. The chances are much better for communities with higher per capita incomes to develop the structure for participating in economic development.

Participation in economic development is also strongly related to size of the community. Small communities, particularly those with populations of less than 1,000, attempt economic development, but at about half the rate of larger towns (those with populations of more than 1,000). Per capita income, level of administrative infrastructure, and the level of external relationships are also strongly related to the size of the community.

Implications for Policy

The implications of these findings present important policy choices for Nebraska. Sophisticated economic development tools and techniques may be of little use to small, poorer communities that have few resources to devote to development activities, that have yet to develop adequate public facilities, that have little staffing to utilize the available resources, and that demonstrate little leadership or commitment to improving these conditions. For state government and other helping organizations, such tools and techniques are in short supply, particularly those associated with financing economic development activities. It may be more appropriate to direct resources to communities that manifest the basic capacities to use

them, and to develop other methods for helping the remaining communities to develop such capacities.

A three-tiered approach may hold the most promise. The first tier represents communities that lack all the basic ingredients for carrying out economic development activities in a successful way. They lack commitment and capacity. A second tier represents communities that have a desire to build the basic requisite capacities needed for economic development, but currently lack such capacity. A third tier represents communities that have achieved a threshold level of physical and organizational infrastructure that allows them to use effectively the economic development tools available from federal, state, and private sources.

Any state or federal resources that are provided for economic development to a tier-one community are unlikely to produce the desired results. However, community development assistance directed at building basic capacities may help tier-two communities succeed in economic development. Finally, economic development resources are likely to produce a much higher degree of success for tier-three communities.

Regional, state, or federal assistance cannot substitute for a community's own efforts. While there is no way to determine how many of Nebraska's smaller communities fit within each grouping, it is likely that most fall within the first two tiers.

Before any classification of communities can be undertaken, a process needs to be established to provide sufficient information on the needs, capabilities, and commitment of Nebraska's communities. Such information could then be used to help small towns meet their most immediate needs and to build a threshold level of physical and organizational infrastructure. Once the threshold is reached, small communities can effectively

use economic development tools available from federal, state, regional, and private sources.

State Efforts

Currently, most state efforts directed at community and economic development come from the Nebraska Department of Economic Development (DED). Assistance comes in two forms, technical assistance and financial assistance. Financial assistance within DED derives predominantly from Community Development Block Grant (CDBG) funds. While financial assistance is available from other state agencies, such as, labor, energy, and environmental quality, DED remains the major source of direct funding.

While financial assistance has been substantial in recent years, various forms of technical assistance within the Community Affairs Division of DED have declined substantially. The Kerrey administration eliminated the DED field staff, which served primarily as technical assistance providers to Nebraska's small towns and villages. Other community development assistance providers within the agency have been reassigned to the CDBG program, resulting in a change in focus from assistance provider to grant provider and enforcer. These changes have resulted in only two staff persons within DED being assigned primarily to community development assistance.

While various types of regional organizations exist throughout Nebraska, the most common are community action agencies, councils of government, and economic development districts. These agencies have staff persons assigned to provide various kinds of community and economic development assistance; however, they vary greatly in capacity and expertise.

Other statewide organizations that provide assistance to small communities include the League of Nebraska Municipalities; the Nebraska Association of Counties; and the Department of Public Administration and Center for Applied Urban Research, University of Nebraska at Omaha. None of these organizations have full-time staff persons whose sole responsibility is to provide assistance.

In some cases, larger communities in Nebraska may provide assistance to smaller jurisdictions close to them. These efforts, however, are fragmented and sporadic. Smaller towns frequently do not trust the motives and purposes of their larger neighbors. In addition, such efforts are often of secondary importance to the overall activities of these cities.

Improving Small Town Development

A gap exists in Nebraska between the tools and resources available for development and the basic capability of small communities to use them. To improve this situation, the state should develop a community and economic development assistance program to help small towns achieve economic vitality. Clearly defined policies developed by the state to direct the proper type of resources to small towns at varying stages of development is imperative. These policies must take into account factors such as need, capability, and commitment of the community. Without these, development efforts will fail.

Regional assistance efforts can be of considerable help, but highly fragmented delivery systems do not allow concentrated assistance in solving problems. In many areas of Nebraska, the political, financial, and staffing support is weak or nonexistent.

State efforts should focus on the following areas:

- The development of a series of diagnostic tools that can accurately measure a small town's needs, capacities, and commitment to improving; and
- The creation of a statewide assistance program that would bring together the resources of various state and regional agencies and the higher education system to provide appropriate levels of help to these communities.

Programs operated jointly between DED and the University of Nebraska-Lincoln's College of Architecture offer the opportunity to build strong diagnostic tools. Small town studies by the Department of Public Administration and the Center for Applied Urban Research, University of Nebraska at Omaha, and the Department of Agricultural Economics at the University of Nebraska-Lincoln also provide important information and techniques. The Nebraska Community Improvement Program represents a state effort to improve development efforts through self-evaluation and a structured program of community improvement. These efforts, if unified, could provide an excellent vehicle to determine the types of development assistance that would be most appropriate for Nebraska's smaller towns and villages. The process should allow the state to categorize communities in general terms, based on the three-tiered approach discussed earlier. Other sources, such as CDBG applications and regional planning and development agency assessments, could also be helpful.

Nebraska sorely lacks a coordinated development assistance program for its smaller communities. What does exist is fragmented, duplicative, and highly

inefficient. Assistance should focus on needs, capabilities, and commitment. These elements include readiness, leadership development, community development, and economic development. Communities lacking any measurable commitment to development efforts are in greatest need of leadership development and assistance that can improve their readiness to undertake community and economic development efforts.

Communities demonstrating leadership, but with limited administrative or physical capacity, are in most need of community development assistance, to help them build the staffing and public facilities necessary to stimulate business investment. For the remaining communities, business investment tools and resources provide a strong base for economic development activities.

Three major vehicles exist for delivering community and economic development assistance: Documentation, training, and direct assistance. Various types of documentation, including guidebooks and manuals, can assist communities. Gaps exist in this area, however, and newer dissemination vehicles need to be developed, including videotapes, computer software, and other audio-visual materials.

Training programs need to be provided to those who are likely to provide technical assistance to small towns. This group could include state agency staff, regional organizations, technical community colleges, state colleges, universities, and private and nonprofit consultants. Training is also needed for representatives of the community. Training should focus on the myriad of topics discussed previously.

Finally, direct assistance is an important element in any overall assistance effort. This assistance can be provided by any of the groups mentioned previously, as

well as by the community itself. Peer-to-peer assistance, as it is commonly called, is often very effective in helping small towns improve their development efforts.

Conclusions

Any coordinated statewide program to improve local development efforts will have difficulties. Many small towns will find themselves with reduced state resources. Inherent suspicion, sometimes justified, by local government officials concerning the motivation, capabilities, and fairness of state government officials is likely to increase unless city and county representatives are involved in the policy development and implementation process.

Finally, departments and agencies within state government operate under vastly different statutory, regulatory, and procedural systems. This is also true of various institutions of higher education and regional assistance organizations. Territorial concerns of these groups make coordination efforts very difficult. But, doing nothing has little to recommend it. Resources are too scarce to waste. Currently, opportunities are being lost and inefficient activities are being rewarded. Nebraska and its small towns cannot afford to continue such a system into the 1990s.

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Community Banking Issues in Nebraska

3

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During the 1980s, community banks in Nebraska have been challenged by a weak agricultural economy and by deregulation of the financial services industry. Bank profits have fallen and many banks have failed. Of the two problems, deregulation may have more far reaching consequences as it increases the competition faced by community banks. Community banks will have to take advantage of new technology, new marketing strategies, and new sources of income to remain viable. Public policy should aim at removing regulatory and tax barriers that constrain community banks.

A well-developed and healthy financial system is necessary for the development of any economy. This is as true for state and regional economies as it is for national economies. Although the types of institutions that make up the financial system will vary among nations, the dominant institution in the United States is the commercial bank. This is also true for Nebraska. This chapter concentrates on Nebraska's commercial banks.

Community Banks

Community banks are a critical ingredient in the local economy. Yet, commercial banks in general, and community banks in particular, face new challenges in a deregulated financial system. Deregulation, together with a weak agricultural sector, has placed community banking in Nebraska under considerable stress. The stresses of deregulation and agricultural weakness have affected banks simultaneously during the mid-1980s. This makes it difficult to distinguish between the contribution

of each to poor bank performance. Thus, a judgment about the relative importance of deregulation and the agricultural crisis cannot be made with certainty.¹ A detailed, technical model could be constructed to quantify the relative importance of various problems, but is beyond the scope of this study.

The observed effects of the agricultural crisis and deregulation occurred at various times too. The agricultural crisis produced its effects on banks quickly, and the problems may disappear as quickly as the crisis disappears. On the other hand, deregulation of the financial services industry is part of a long run process in the U. S. economy. Its effects will be felt for many years to come. Strategic planning by community banks requires a carefully considered response to long-term trends. Consequently, this chapter focuses on deregulation, while recognizing the impact of the agricultural crisis on recent bank performance.

In this chapter, the extent to which deregulation and the weak agricultural sector have stressed community banks is examined by comparing the performance of community banks with larger commercial banks. Then, recent changes in deregulation and their effects on community banks are reviewed. Next, the ways in which community banks might incorporate responses to deregulation in their long-range planning are discussed. Finally, some overall policies that might ease the transition for community banks from a regulated to a deregulated financial system are presented.

Location of Community Banks

Nationally, the total of all commercial bank assets is over two and one-half times as great as the total assets of the next largest type of depository institution, the

savings and loan association. The comparison is similar for Nebraska, with commercial bank assets about double savings and loan association assets. Although, like the nation, Nebraska has both large and small commercial banks, this discussion focuses on small (community) banks. For our purposes, a community bank is a commercial bank with less than \$100 million in assets, and a large bank is one with \$100 million or more in assets.

At the end of 1986, there were 418 community banks scattered throughout Nebraska.² Some of these community banks exist side by side with large banks. For example, in the Omaha area, in 1986, 17 community banks coexisted with 7 large banks. Omaha and Lincoln were the only cities in Nebraska with more than one large bank (Lincoln has four). In eight other cities, community banks coexisted with one large bank. More commonly, community banks are the major financial institutions in smaller cities and towns in the more rural parts of the state.

Relatively, Nebraska has more community banks than the United States as a whole. In Nebraska, 96 percent of all commercial banks are community banks, compared with 81 percent for the nation. Within their class, community banks in Nebraska vary widely in size, ranging from total assets of less than \$1.5 million to just under \$100 million. Thus, many community banks are as different from each other as they are from large banks. Yet, they all provide important services to their respective communities.

Role of Community Banks

As financial institutions, or intermediaries, community banks perform many functions that assist in economic development and growth. First, they provide a

channel through which the funds of savers can be made available to investors. For example, ordinary savings accounts of banks provide a safe, insured haven for individuals' money. In turn, these funds may be lent by the bank to a farmer who wants to install an irrigation system. The irrigation system improves agricultural productivity and the entire economy of the community benefits.

Second, the loans of community banks may be used to assist in the operations of businesses as well as to provide new investment. A typical example in rural Nebraska would be the financing of seed grain for the farmers. Without short-term loans, only farmers who had sufficient cash to buy seed grain would be able to plant. The result would be a lower level of agricultural output for the community.

Of course, community banks make equipment loans and inventory loans for nonfarm business as well. Agricultural lending, however, has dominated--at least until now.

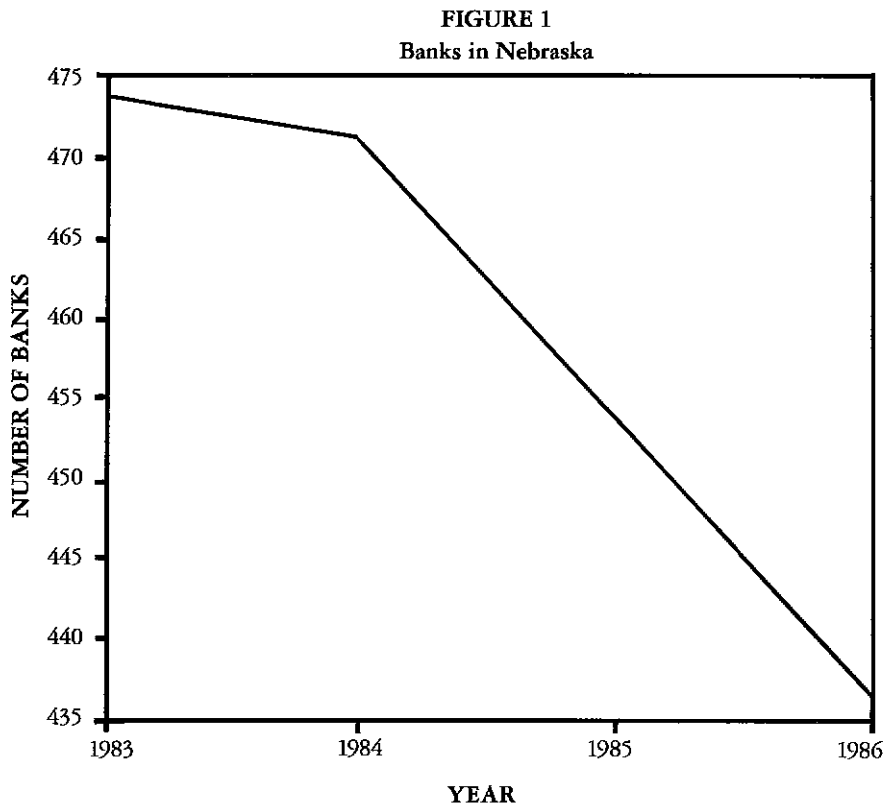
A third function of community banks involves the means by which payment is made when goods are bought and sold. Cash and checks are the two most widely used means of payment. For years, only commercial banks provided checking accounts. As a result of deregulation, other financial institutions now provide checkable deposits. However, commercial banks still provide over 50 percent of checkable deposits nationwide. In many Nebraska communities, the local community bank may be the only nearby provider of checkable accounts. Moreover, the community bank is the primary institution through which coin and currency can be obtained. Without currency, local business would be inhibited, as people and businesses would lack the means to carry out many transactions.

The Banking Industry

This section provides an overview of profitability for the Nebraska banking industry. The data show a clear difference in performance between large banks and community banks.

Number and Size of Banking Institutions

Nebraska's banking industry consists essentially of small institutions. Figure 1 shows the number of banks in Nebraska in 1983, 1984, 1985 (the last year for which



Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards*, 1986. Austin: Sheshunoff & Company, Inc., 1986.

complete data are available), and 1986. Respectively, the numbers are 474, 472, 453, and 437. Table 1 shows that 98 percent of these banks had less than \$100 million in assets in 1985, and 89 percent had less than \$50 million.

Table 1 - Number and size of banks, Nebraska, 1985

Assets	Banks	
	Number	Percentage of total
\$1 billion and over	3	0.7
\$500-\$999 million	1	.2
\$100-\$499 million	14	1.0
\$50-\$99 million	40	9.0
\$25-\$49 million	97	21.0
\$10-\$24 million	167	39.0
\$0-\$9 million	131	29.0
Total	453	100.0

Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards, 1986*. Austin: Sheshunoff & Company, Inc., 1986.

Table 2 illustrates loan portfolio composition. Agricultural production loans, followed by commercial and industrial loans, comprise the major proportions of

Table 2 - Domestic loans as a percentage of total assets, Nebraska banks, 1985

Type of loan	Percentage of total assets	
	Median	Average
	Percent	
Commercial and industrial	7.0	11.9
Real estate	7.1	9.3
Agricultural production	22.8	15.7
Individual	4.7	9.8

Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards, 1986*. Austin: Sheshunoff & Company, Inc., 1986.

the loan portfolios of banks in Nebraska. The performance of banks with less than \$100 million in assets (community banks) is the focus of this study. These banks are the primary lenders to small businesses and consumers.

Profit Performance

The key performance measure for any bank is profitability. Return on asset (ROA) and return on equity (ROE) variables are commonly used measures of profitability. The larger the ROA and ROE, the greater the profitability. These two measures are related as follows:

$$\text{ROE} = \text{ROA} \times \text{EM},$$

where EM is the equity multiplier. The equity multiplier is equal to the ratio of assets to equity and indicates the degree of financial leverage used by the bank.

Tables 3 and 4 indicate the profit performance for the Nebraska banking industry. Performance for 1985 was poor. Table 3 shows an average ROE of 4.91

Table 3 - Return on equity analysis, Nebraska banks, 1981-85

Variable	1981-85		1985	
	Median	Average	Median	Average
	Percent			
Return on equity	11.48	11.27	6.32	4.91
Return on assets	1.07	.91	.62	.41
	Ratio of assets to equity			
Equity multiplier	10.73	12.38	10.19	11.98

Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards, 1986*. Austin: Sheshunoff & Company, Inc., 1986.

percent and an average ROA of 0.41 percent, which are below national averages. The degree of financial leverage is indicated by an average EM of 11.98. By contrast, table 3 shows better performance when the average of several recent years is considered. The average ROE for 1981-85 is 11.27 percent and the ROA is 0.91 percent. Financial leverage was also slightly greater, with an EM of 12.38. The large difference in ROE was accounted for mainly by the large difference in ROA, with little difference in EM.

Return on assets data, broken down by size of bank, for 1985 and 1981-85 are shown in table 4. Considerable variation is shown among the various size classes. In most cases, 1985 was a poor year compared with the 1981-85 average. Generally, banks with less than \$100 million in assets had a lower ROA than those with assets greater than \$100 million. In 1985, banks in the \$10-\$24 million size class had especially poor performances.

Table 4 - Return on asset analysis, Nebraska banks, 1981-85

Assets	Average return on assets	
	1981-85	1985
	Percent	
\$1 billion and over	0.71	0.42
\$500-\$999 million	1.01	1.17
\$100-\$499 million	1.15	.74
\$50-\$99 million	.95	.27
\$25-\$49 million	1.15	.50
\$10-\$24 million	.94	.17
\$0-\$9 million	.88	.44

Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards, 1986*. Austin: Sheshunoff & Company, Inc., 1986.

Table 5 provides more information about smaller banks for 1985. The contrast between the \$10-\$24 million and \$100-\$499 million classes is striking. A lower ROA for the smaller size class, coupled with a lower degree of financial leverage, led to a substantially lower ROE for the smaller size class banks.

Table 5 - Performance of Nebraska banks, selected asset sizes, 1985

Assets	Average		
	ROA	EM	ROE
	Percent		Percent
\$100-\$499 million	0.75	12.60	9.45
\$50-\$99 million	.21	12.24	2.57
\$25-\$49 million	.48	10.79	5.18
\$10-\$24 million	.17	9.94	1.69

Source: Sheshunoff & Company, Inc. *Banks of Nebraska: National and Statewide Bank Performance Standards, 1986*. Austin: Sheshunoff & Company, Inc., 1986.

The difference in performance between large and small banks can be traced to many causes, including:

- The difference between interest income and interest expense (net interest margin) has fallen for all banks but more so for small banks.
- The quality of loan portfolios for small banks has deteriorated because of the poor agricultural economy.
- Small banks have not been able to generate noninterest (fee) income to the same extent as large banks.

According to Keeton and Hecht (1986), the net interest margin fell substantially for both small agricultural and nonagricultural banks from 1981 through 1985 in the Federal Reserve Tenth District, which includes Nebraska. The reduction was slightly greater for the small agricultural banks because of substantial increases in problem agricultural loans. On the other hand, net interest margin for large banks declined, and then increased, over the same period. For these banks, net interest margin was actually slightly higher in 1985 than in 1981.

Apart from the problems associated with the agricultural sector, some of the continuing, longer term difficulties faced by community banks are due to deregulation in the financial services industry.

Deregulation and Community Banks

Over the past two decades considerable progress has been made in eliminating restrictions on the types of services provided by depository institutions, in increasing the interest rates paid on deposits, and in locating depository institutions in various geographical areas. All commercial banks have been affected by deregulation. However, the impact on small community banks has been, and will continue to be, different from the impact on larger urban banks.

Community banks face different competition now. They must be concerned about competition from other commercial banks; depository institutions, such as savings and loan associations; and the nonfinancial corporations that are moving into the financial services industry.

Deposit Rate Deregulation

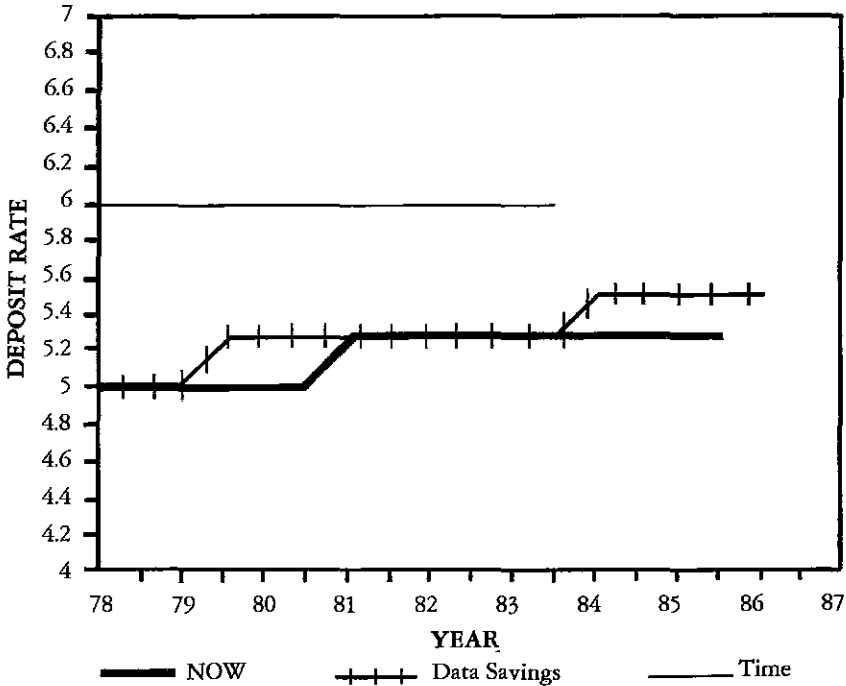
For over 50 years, commercial banks were restricted in the amount of interest they could pay on their customers' deposits. The Banking Act (Glass-Steagall Act) of 1933 forbade the payment of interest on demand deposits (checking accounts) and enabled the Federal Reserve System to impose ceilings on the rates payable on savings and time deposits at commercial banks, because price competition for deposits was considered an unsound banking practice. Savings and loan associations (governed by the Federal Home Loan Bank Board) were placed under similar restriction in 1966 when the Interest Rate Control Act was passed.

The Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA) provided for the gradual removal of restrictions. All savings and time deposit rate ceilings were removed by March 31, 1986. As figure 2 indicates, ceilings were eliminated first on time deposits, then on Negotiable Order of Withdrawal (NOW) accounts, and, finally, on savings accounts.

The removal of ceilings affected large and small commercial banks differently. Two characteristics of bank operations and financial structure contribute to this result. First, large banks produce deposits at lower average operating costs than small banks. In other words, there may be economies of scale in the production of deposits. Second, small banks hold a larger proportion of their liabilities in the form of deposits subject to ceilings than large banks. Consider the effect of each characteristic.

The costs to the bank of supplying deposits consist of operating costs and interest costs. Operating costs exhibit economies of scale. That is, average operating costs (operating costs per dollar of deposits) tend to

FIGURE 2
Maximum Deposit Rates¹



¹Rates are reported for January 1 and July 1 of each year.

Source: Board of Governors of the Federal Reserve System. *Federal Reserve Bulletin*. Washington, DC, various issues.

decrease as total deposits increase. Thus, larger banks can supply deposits at a lower average operating cost than small banks. Large and small banks supply deposits at the same interest rate when interest rates are controlled. Therefore, the average total costs (operating plus interest) will be lower for large banks than for small banks.

Large and small banks use most of their deposit funds to make loans and buy securities in competitive markets. There is little difference between the interest rates received by each on loans and securities of comparable risk. But, because smaller banks have higher

average costs of maintaining deposits, their profit margins are smaller than those of larger banks, unless they accept more risky loans with correspondingly higher interest rates. If small banks are to maintain a satisfactory profit margin without undue risk, it is to their benefit to keep interest costs down through government-imposed deposit rate ceilings.

When deposit rate ceilings are removed, small banks are placed at a disadvantage. If they fail to increase their rates to new, market-determined levels, they lose customers. If they increase their rates, and, thus, their costs, they may convert a small profit margin into a loss.

The issue is complicated because more small bank liabilities are deposits that are subject to deposit rate ceilings. An increase in deposit rates, due to the removal of ceilings, will affect a larger proportion of small bank liabilities than large bank liabilities. This means that total interest costs for small banks will rise relatively more than those for large banks. Even in the absence of differences in operating costs, the removal of deposit rate ceilings will reduce the profits of small banks more than the profits of large banks.

It is too early to assess the full impact of the removal of deposit rate ceilings. At this point, the projected effects contain an element of conjecture. However, some research has addressed this subject. Benston and others (1982 and 1983) indicate that there are significant economies of scale for small banks up to about \$100 million in deposits. Community banks, as defined in this chapter, fall into this category. Beyond \$100 million in deposits, economies appear to be insignificant.

Approaching the problem from another perspective, James (1983) analyzes the effect of adjustments in

deposit rate ceilings prior to 1980. A change in bank profitability due to changes in deposit rate ceilings should have an effect on the market value of the bank's stock. James concludes that certain deposit rate increases or removals affected smaller banks adversely, while benefitting larger banks. Should his conclusions hold for the changes embodied in the DIDMCA, Nebraska's community banks would be placed at a disadvantage.

Since the removal of deposit rate ceilings, small banks have not been tested because interest rates have been low or below the old ceiling rates. For example, rates on NOW accounts are significantly lower now than they were 2 years ago. The test for Nebraska's community banks will come when, and if, market interest rates begin to climb rapidly beyond the old ceiling levels.

Product Deregulation

Twenty years ago commercial banks occupied a unique niche in the financial services industry. Banks were, as they are now, the dominant financial intermediary. Banks were the only institutions that could offer checking accounts to their customers. Banks were more diverse than other institutions in their lending activities. They lent to consumers and businesses; bought corporate and government bonds; made mortgage loans; bought money market securities, such as commercial paper and U.S. Treasury bills; and dealt in a full range of financial assets, except corporate stock.

Deregulation changed all that, not so much by limiting the powers of banks, but by expanding the powers of competing financial institutions. Banks no longer have a monopoly over checkable deposits. Other depository institutions, such as savings and loan associations, are

now able to compete with commercial banks in the market for consumer loans. Competition for interest bearing deposits has intensified, and banks and other depository institutions offer a range of deposits with varying maturities and yields.

The changes are not all negative for commercial banks. A small interest advantage that savings and loan associations had over commercial banks on savings accounts is gone. Further, many banks now compete in new areas, such as discount brokerage and credit cards.

While large banks face a range of new possibilities, the same cannot be said of community banks. For example, credit card debt at commercial banks has grown about 20 percent per year over the last 5 years. It is a lucrative business for commercial banks. However, it is unlikely that community banks will share in this market. The start-up costs are simply too great for community banks.

On the other hand, community banks are unable to avoid the competition they face from other institutions. For example, savings and loan associations offer NOW accounts, which compete with the checking accounts of community banks. Savings and loan associations are also supplying consumer credit, a market that is also important to community banks. This competition is almost unavoidable because federally chartered savings and loan associations can establish branches throughout Nebraska. Thus, in any town, a community bank may be forced to compete with a branch of a large and powerful savings and loan association.

Geographical Deregulation

Despite deposit rate and product deregulation, a well managed community bank can survive if competing

institutions are unable to enter its primary market. However, deregulation has begun to break down geographical barriers.

Large banks present a competitive threat to community banks because they can locate branches in the same market areas. For years, community banks were shielded by restrictive branching laws in Nebraska and by federal laws that restricted interstate branching. For example, the Douglas Amendment to the Bank Holding Act of 1956 prevents a bank holding company located in one state from owning a bank in another state without that state's permission. For this purpose, a bank is a facility that makes commercial loans and accepts demand deposits.

Nebraska law (1983) permits an out-of-state bank holding company to establish a new bank in the state, but the conditions are restrictive (King, 1984). The bank is limited to one office with minimum capital of \$2.5 million. The new bank must employ at least 50 residents of Nebraska within 1 year of its establishment. Further, the bank must not operate in a way that is likely to attract customers from the general public. An outside bank holding company can also acquire a Nebraska bank, but only if the holding company owned at least two in-state banks prior to 1963.

While this may sound like significant protection for community banks in Nebraska, it really is not. An office could be established to grant loans but not receive demand deposits. This office would not be a bank, but it could be a finance company subsidiary of a bank holding company. Deposits could be received through the mail and the main office could be contacted by telephone. Insured certificates of deposit could be sold through a broker, avoiding the establishment of a deposit-taking office.

These are a few of the many ways out-of-state banks, or bank holding companies, can avoid geographical restrictions. Competition faced by Nebraska's community banks, therefore, extends beyond the local community and state boundaries.

New Competition

Competition for financial services is no longer confined to a few industries or geographical areas. Community banks compete in the same market as other banks, savings and loan associations, insurance companies, retailers, security dealers, and others. Regulations that delineated the markets for various institutions have been breached or eliminated. Community banks must now compete with savings and loan associations for checkable, savings, and time deposits. These two institutions now also compete for consumer and business loans.

But, in a broader sense, the competition faced by community banks comes not only from depository institutions, such as savings and loan associations and mutual savings banks, but also from nondepository financial and nonfinancial organizations. Table 6 shows the ways in which several types of organizations have expanded into the financial services industry through subsidiaries and financial institutions other than banks. While commercial banks have expanded their services, the services offered by insurance companies, retailers, and security dealers have expanded dramatically.

The expansion of services has been enhanced by deregulation, but it occurred in the absence of deregulation too. For example, savings and loan associations were able to expand into consumer loans as a result of congressional action in 1980 and 1982. On the

Table 6 - Financial services offered by various institutions in the United States, 1960 and 1984

Service	Banks		Savings and loans		Insurance companies		Retailers		Security dealers	
	1960	1984	1960	1984	1960	1984	1960	1984	1960	1984
Checking	x	x		x		x		x		x
Saving	x	x	x	x		x		x		x
Time deposits	x	x	x	x		x		x		x
Installment loans	x	x		x		x		x		x
Business loans	x	x	x	x		x		x		x
Mortgage loans	x	x	x	x		x		x		x
Credit cards		x		x			x	x		x
Insurance					x	x		x		x
Stocks, bonds, brokerage underwriting		x		x		x		x	x	x
Mutual funds						x		x	x	x
Real estate				x		x		x		x
Interstate facilities		x		x		x		x		x

Source: Koch, D. L. "The Emerging Financial Services Industry: Challenge and Innovation." Federal Reserve Bank of Atlanta, *Economic Review* (1984):25-30.

other hand, insurance companies expanded by circumventing the restrictions of the Bank Holding Act. A company could obtain a bank charter and offer all banking services except demand deposits or commercial loans. Thus, the institution does not complete the act's definition of a bank. This type of financial institution could offer federally insured deposits and other services without being constrained by the Bank Holding Act.³

Community banks must now consider all corporations and mutual associations to be potential competitors. However, by virtue of its size and market, the typical community bank may be unable to fight back in kind. As mentioned earlier, costs prevent community banks from entering the credit card business and obtaining the associated consumer credit business. In addition, they have lost many automobile loans (the largest element of banks' consumer loans) as a result of cut-rate lending by automobile manufacturers.

Actions can be taken to promote the survival of community banking without attempting to make community

banks all things to all people. The experience of food retailers may provide a model (Kaufman and others, 1984). Large supermarkets and small retail stores coexist by appealing to particular segments of the market and by making use of various technologies. This suggests strategies for commercial banks, because it is not clear that all consumers want to bank at a financial supermarket (Bennett, 1984).

Strategic Responses to Deregulation

In this section, we consider various financial, technological, and market strategies that small community banks might adopt, given the current environment of deregulation.⁴

Financial Strategies

Financial strategies can be delineated into lending, fee income, expense control, capitalization, interest rate risk, and operating risk.

Lending. Small banks in Nebraska supply loans to farmers, small businesses, and individuals. Academics, regulators, and industry practitioners are concerned that the retail loan market will be affected by offices of institutions other than banks and financial services companies. Yet, the demand for such loans offers small community banks new opportunities to pursue profitable outlets for funds. First, because of volatile interest rates, firms have tried to reduce long-term, fixed-interest charges by using additional short-term assets. Banks have responded to this trend by using asset-based lending to finance working capital needs. Second, the demand for housing and consumer durable goods has

increased. These favorable patterns in retail loan markets have implications for small banks.

Traditionally, small banks have been deposit-oriented. Prior to deposit rate deregulation, the major problem was obtaining an adequate share of the deposit base to maintain a reasonable level of loan service. This led banks to seek borrowers who could leave large balances on deposit. As agricultural loans produced lower deposit balances, many small banks shied away from farm credit.

Today, the interest rate environment has changed small banks by making them more loan-oriented. The emphasis is on high-quality credits with good earnings potential to maintain competitive deposit rates and services.

The increased demand for consumer credit presents new opportunities for growth to small banks. This growth could be managed profitably by using technology to reduce production costs. If cost efficiencies are assumed, small banks could obtain an adequate share of the consumer market.

Small banks should be able to excel in personalized services. Typically, this approach works if the bank focuses on a select market segment, establishing a total funds relationship with each customer.

All community banks must develop marketing strategies. There is no reason to suspect that they will not be faced by the marketing principles common to other service industries.

Fee Income. Small banks are in the process of refining their noninterest charges for services. Value-adding strategies state that service-fee income should be geared to the prices of alternative resource inputs. This should be an effective way to boost noninterest revenues.

Also, new services, such as data processing for small businesses, can supplement fee income. Cooperative relationships with other banks may be the best approach for small banks with very little data processing capabilities.

Expense Control. Previous research indicates that expense control is the most critical performance determinant for banks. The shared-cost nature of producing salaries, benefits, and other expenses makes cost budgeting more difficult. Microcomputers offer an inexpensive method of recordkeeping that could detail the daily cost-revenue cycles of banks. Educational institutions could provide support for critical microcomputer technology and develop educational programs for bank personnel.

Capitalization. Small banks have had much higher capitalization than large banks. New regulatory guidelines regarding primary and secondary capital have made standards for small and large banks more uniform. Thus, deregulation should allow small banks two major benefits. First, added leverage can magnify smaller asset earnings to support earnings on equity. Second, small banks will be able to expand their asset bases more quickly; therefore, growth will be enhanced. Such growth may be the most effective way to reach economies of scale.

Interest Rate Risk. Interest rate risk relates to the potential effects of interest rate changes on the liquidity and profitability of a bank. Experts state that analysis of interest rate gap is the best strategy for overcoming interest rate risk. Duration matching, as opposed to maturity matching, is the procedure to use in

implementing this approach. Duration indicates when half of the investment's cash flow in present value will be received. Because the timing of cash flows is considered, it is a better measure of changes in interest rates than the maturity of a financial claim.

Operating Risk. Operating risk relates to the potential inability of a bank to produce financial services at a competitive price. A possible cost inefficiency to which small banks may be susceptible is higher consumer costs. If customer costs are not competitive, small banks could face decreasing demand and, thus, higher operating risk than large competitors.

Technological Strategies

Technological strategies can be classified as payments services, service portfolios, and production and delivery of services.

Payments Services. In today's payments system, checking accounts, credit cards, automated teller machines, and debit cards are the main forms of funds transfer. As electronic technology has become more important, two views of its effect on small and large banks have arisen. First, the shakeout theory states that only larger institutions will be able to accumulate sufficient capital and management expertise to deliver costly technological services. Second, the divisibility theory argues that third-party delivery systems should allow small institutions to reach cost-per-unit output parity. From this perspective, start-up costs could be handled by pooling resources, and technological barriers would not be formidable because most equipment is oriented toward the end user.

An alternative to correspondent banking for automating payments services is the bankers' bank. By definition, these banks are owned by a group of independent community banks in a particular state. Services are provided for a variety of activities. Out-of-state banks may subscribe to certain services. This creates an interstate network of many small banks. The approach overcomes capital and risk barriers that large banks and holding companies can circumvent because of their size. Thus, small banks can cooperatively produce services and deliver them to geographically dispersed regions.

Another method of delivering automated payments services is to utilize a joint venture to share the high fixed costs of production. For instance, a network may be shared by many banks to expand available ATM (automated teller machines) outlets for consumers.

Will the new technology increase unit costs of output for small banks? First, small banks must employ third-party sources to produce technological services in which economies of scale allow them to lower costs. Second, small banks must introduce microcomputers into everyday operations. They can help managers identify cost-control problems, and information systems can be important tools for profit analysis.

Service Portfolios. Portfolio services allow individuals to diversify their financial assets and to lower their transactions costs. Diversification is achieved by purchasing numerous assets with returns over time that are less than perfectly correlated. Also, it seems reasonable that customers using many services from the same institution should bear lower transactions costs. Therefore, the multiple-service functions of financial institutions may be demanded.

Given the legal and regulatory barriers to entry into portfolio services, banks must attempt to change state laws or to use symbiotic banking relationships. For example, many banks have leased space on their premises to financial companies that sell services that are not offered by the bank. Both lessor and lessee benefit from this relationship, and it creates one-stop shopping.

Production and Delivery of Services. Small banks tend to separate the production and delivery of automated, capital-intensive services that can be purchased from low-cost producers. This allows the small community bank to compete technologically with larger competitors. Low-cost producers enable small banks to reprice packages of services and products in unique ways for the needs of their clientele. The personal nature of delivery in many financial services enables small banks to develop strong relationships with customers, and they may have an advantage over larger institutions if they can deliver an assortment of services to satisfy their customers.

Market Strategies

Market strategies can be subdivided into regulatory issues, survey data on bank services and prices, and bank performance goals.

Regulatory Issues. New services are made available to the public upon the approval of a bank holding company's application. Horvitz and Shull (1964) reported that when unit banks merged into national banks, generally, five new services were offered. Kolari, Rose, and Riener (1983) showed that independent banks

acquired by bank holding companies increased their service offerings. Unfortunately, it was also found that many planned changes or additions to services were not implemented; when they were, the public did not use them. Therefore, the basic products most demanded by the public were being served by banks before they were acquired by bank holding companies. Thus, the most important variable may not be changes in products but in prices.

Survey Data on Bank Services and Prices. Since the early 1960s, the structure of banking in the United States has been changed by the growth of branch banks and bank holding companies. Their benefit is that they provide a multi-office marketing network for selling bank services throughout a geographic area. A survey study by Rose, Kolari, and Riener (1985) determined that smaller institutions emphasized transaction services, including automatic loan repayment, deposit by mail, self-service envelopes, automatic deposit transfers, and depository and payroll services for businesses. Branch banks supplied a variety of services to the public, and independent unit banks offered the fewest services.

The evidence suggests that banks with deposits in the range of \$25-\$100 million emphasize consumer business more than the very small and very large banks. Also, banks with deposits in excess of \$100 million recorded more competitive deposit rates. Finally, loans associated with small and large banks seem to be priced uncompetitively. For example, small banks averaged the highest rates on farm loans. One explanation is that banks concentrating in individual lending acquire riskier loans with higher average returns than other banks.

Bank Performance Goals. Rose, Kolari, and Riener (1985) state that the goals of profitability, growth, and market share were more important as bank size increased. Banks in the \$10-\$25 million deposit range view profitability and growth to be important; however, larger banks emphasize competitive performance goals.

Banks should rank their goals. For some, profitability will be of utmost importance, followed by growth. For others, profitability or growth alone will be important. Without question, banks will need to plan more than they have in the past to meet a given level of performance.

Policy Recommendations and Conclusions

Nebraska's community banks are facing difficult times. The agricultural crisis and deregulation of the financial services industry have combined to lower the performance levels of community banks. Deregulation may have more long-term consequences than a weak agricultural economy. In 2000, the financial services industry may bear little resemblance to the current one.

Throughout U. S. history, resistance to change was usually the hidden motivation for supporting the regulation of industry. Yet, a dynamic economy coupled with technological advances will produce innovators who are able to breach the regulatory barriers. Nowhere has this been more evident than in the financial services industry in recent years.

In the face of change, some institutions attempt to survive by demanding new regulations. However, other institutions view change and deregulation as a process that creates opportunities. Institutions led by innovators will seek new markets and new technologies to enhance their dual function of serving the customer and earning a

profit. These are the institutions that will define the nature of the financial services industry in the future.

Nebraska has always had its share of innovators. The state capitol building, the Unicameral Legislature, Arbor Day, the planted national forests, and the Interstate 80 sculptures are a few examples of the state's innovative spirit. We expect that this spirit will be drawn upon by Nebraska's community banks.

We argue in this chapter that deregulation and the avoidance of regulation have stressed Nebraska's community banks; but, we also argue that ample opportunities are provided by this new environment. The relatively small size of community banks need not be a barrier that retards the development of viable organizations. On the contrary, smallness can promote the flexibility that is necessary to adapt to change.

The suggestions presented previously are designed to be implemented by individual banks or groups of banks. But, action can be taken at the state level through changes in public policy. Current state laws and regulations should be reviewed to determine the extent to which they encourage or discourage the development of banks and other financial corporations. Also, a strong business climate will help community banks. Thus, policies that improve Nebraska's business climate are as important as those that affect the financial sector.

For example, does Initiative 300 interfere with the ability of Nebraska's community banks to supply financial services? Will it inhibit the growth and development of community banks in the future? Does it discourage nonfinancial corporations that might otherwise provide increased business for community banks in Nebraska?

Nebraska is one of a handful of states that severely restrict the establishment of new banks by out-of-state

bank holding companies. Is the protection afforded by this, to in-state banks, worth the negative effects of its antibusiness message? Is the protection significant at all?

Are community banks really helped by Nebraska's antibranching law? Would the law's elimination encourage economic development and growth in markets for all financial institutions, including community banks?

Nebraska's tax system has been changed recently. Have all the appropriate changes been made? As business expands, in what ways can the tax burden for firms be further reduced? Innovation is going to be one of the keys to success for community banks. Does the tax system encourage innovation?

Resource constraints prevent community banks from having access to information that many large banks acquire. State government, and its agencies, have public information that could be useful to community banks. Could this information be made available to community banks for modest fees? The low cost of microcomputers now makes it feasible to disseminate timely information to remote locations throughout the state.

Change in the financial services industry is inevitable. State banking policy should assist Nebraska's banks by removing barriers to change, by improving the availability of useful information and expertise, and by encouraging innovation. It is time for Nebraska to become a leader in enlightened public policy toward the financial services industry.

Endnotes

1. According to Hagerman and Gajewski, "Patterns of Financial Institution Failures," about 55 percent of the FDIC-insured banks in the United States that failed from 1983 through 1986 had below-average concentrations of farm loans. This group included banks in states with faltering energy industries.

2. The data in this section are from Lyons, Zomback and Ostrowski, Inc., *Depository Institutions Performance Directory*.
3. On August 10, 1987, President Reagan signed the Competitive Equality in Banking Act. This legislation stops the further creation of this type of financial institution and restricts the growth of the more than 165 existing institutions. Whether this represents a delay in ongoing deregulation, or a reversal of the deregulation movement, remains to be seen.
4. This section draws heavily on Fraser and Kolari, *The Future of Small Banks*.

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Financing Public Elementary and Secondary Schools in Nebraska

4

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Nebraska's system for funding public schools is deteriorating. Shifts in population, variations in tax capacity, and changes in the mission defined for public schools make the current system inadequate and inequitable. Funding problems are compounded by the large number of school districts which divide human and financial resources in the state unequally. Problems in the finance system are described, and suggestions for determining the minimum education program to be funded, the most cost-effective organization of school districts, measures for fair acquisition of funds, and procedures for equitable allocation of state aid to public schools are discussed.

Theoretically all the children of the state are equally important and are entitled to have the same advantages; practically this can never be quite true. The duty of the state is to secure for all as high a minimum of good instruction as is possible, but not to reduce all to the minimum; to equalize the advantages to all as nearly as can be done with the resources at hand; to place a premium on those local efforts that will enable communities to rise above the legal minimum as far as possible; and to encourage communities to extend their educational energies to new and desirable undertakings (Cubberley 1906, cited in Johns, Morphet, and Alexander, 1983).

Nebraskans traditionally have held high expectations for their public schools and have given them strong local support. Graduates of the system have ranked well in national comparisons and have supplied an excellent pool of employees for the state's needs (Hughes, 1987). These results are evidence of the esteem with which education has been regarded by the public. Although

Nebraska teachers have been paid poorly, compared with teachers in other states and with other professionals, the educational system has provided a quality product for a bargain price. Education and the system for delivering it have been valued highly and given high priority, particularly at the local level.

In the mid-1980s, however, the values and priorities of previous eras are changing. Depopulation in rural communities, an aging population, a decline in the proportion of households with school-aged children, and a stressed economy have caused concern about the future of public support for education. Increasing life spans and the movement of young people out of the state have contributed to a higher median age among Nebraskans.

As people live longer, their needs for services change, and their spending priorities change. State general aid to education has been reduced at a time when the pattern nationally has been to increase state support. Local taxpayers in Nebraska have been asked to assume a greater share of the cost of schooling at a time when fewer of them are directly involved with the public schools.

Advocates of the public schools must pay attention to these shifts. As support for the public schools is threatened, the equity and efficiency of the state's system for providing financial support to the schools become crucial issues for policy decisions.

System for Funding Schools

The legal responsibility for the provision of educational services is vested in states under Amendment 10 of the Constitution of the United States, which provides that "the powers not delegated to the United States by the Constitution, nor prohibited by it to the

States, are reserved to the States respectively, or to the people." The Constitution of the State of Nebraska establishes the state's interest in education: "The Legislature shall provide for the free instruction in the common schools of this state of all persons between the ages of five and twenty-one years" (Article VII, Sect. 1).

The state's mission for the public school system was defined in LB 994, an omnibus educational reform bill passed by the Unicameral in 1984:

The Legislature hereby finds and declares that the mission of the State of Nebraska, through its public school system, is to:

- (1) Offer each individual the opportunity to develop competence in the basic skills of communications, computations, and knowledge of basic facts concerning the environment, history, and society;
- (2) Offer each individual the opportunity [to] develop higher order thinking and problem-solving skills by means of adequate preparation in mathematics, science, the social sciences, and foreign languages and through appropriate and progressive use of technology;
- (3) Instill in each individual the ability and desire to continue learning through his or her life;
- (4) Encourage knowledge and understanding of political society and democracy in order to foster active participation therein;
- (5) Encourage the creative potential of each individual through exposure to the fine arts and humanities;
- (6) Encourage a basic understanding of and aid the development of good health habits; and
- (7) Offer each individual the opportunity for career exploration and awareness. (Statutes of Nebraska, Sect. 79-4140.1)

This mission statement provides a basis for evaluating the adequacy of the system of funding public elementary and secondary education in Nebraska.

Constitutional Authority for Revenues

Public school districts in Nebraska rely on several sources of revenue. The authority for several of these is provided in the state constitution.

Fines, Fees, and Licenses. The state constitution provides that all fines, penalties, and license money accrued under the general laws of the state, cities, villages, precincts, or other municipal subdivisions shall be used to support the common schools in the respective subdivisions where the moneys were accrued (Article VII, Sect. 5; Statutes of Nebraska, Sect. 79-1301). Exceptions are fines and penalties for overloading of vehicles and 50 percent of the money seized or forfeited in drug law enforcement. In the 1985-86 school year, approximately \$13.3 million in revenue was generated by local and county fees and licenses and fees assessed on trucking fleets. These revenues are distributed to local school districts on the basis of school-aged census.¹

School Lands. The constitution also designates "perpetual funds for common school purposes" generated by the lands originally set aside by the federal government in each territory for the maintenance of public schools under the Ordinance of 1785 (Article VII, Sects. 6-9; Statutes of Nebraska, Sects. 79-1302-08). When Nebraska attained statehood on March 1, 1867, 2.8 million acres of land were received from the federal government for support of schools. Some of the land was sold and the receipts became part of a trust fund established to support schools. Approximately 1.5 million acres of public school lands remain, and revenue generated by use of these lands supports schools. School districts containing school endowment lands receive

revenue from lease fees in place of property tax revenue. In 1985-86, approximately \$4.4 million was distributed to school districts as in-lieu-of school land tax. The remaining revenue generated by lease fees and the interest earned on the land grant trust accounted for \$13.6 million, which was distributed to schools on the basis of school-aged census.

Property Tax. The Constitution of Nebraska provides for the use of property taxes to support services provided for units of government below the state level. Such units include school districts, municipalities, counties, public authorities, and a host of other agencies. State statutes define parameters for the use of property taxes by school districts (Article VIII, Sect. 1; Statutes of Nebraska, Sects. 79-432-34). Historically, property taxes have provided the largest revenue source for supporting public schools. In 1985-86, local property taxes provided \$516.2 million in revenue for the support of schools, or 58.4 percent of the total revenue available to school districts statewide.

Public Power Tax. The Constitution of Nebraska (Article VIII, Sect. 11) establishes taxes on public corporations and on political subdivisions organized primarily to provide electricity. The tax is 5 percent of the retail sales in incorporated cities and villages. School districts within such tax units receive a portion of the revenue generated. In 1985-86, school districts received \$9.2 million from public power district sales.

Statutory Authority for Revenues

Statutes of the State of Nebraska provide additional revenue sources for the support of public elementary and secondary schools.

School Foundation and Equalization Fund. The state's general aid to education formula, described in Sections 79-1330-44 in state statutes, is summarized here. The amount of money to be distributed is determined by the Unicameral, but no state agency or official has discretionary power over the funds distributed.

The formula has three parts. The first, and the one given priority in the statutes, is called Foundation Aid. It is a grant distributed to school districts on the basis of resident enrollment, with the monetary amount weighted by grade level. Districts receive the basic grant for students in grades one through six, half the basic grant for kindergarten students, 1.2 times the basic grant for students in grades seven and eight, and 1.4 times the basic grant for students in grades nine through twelve. In 1985-86, \$90.6 million of state support was distributed as Foundation Aid.² The fundamental purpose of state Foundation Aid is property tax relief.

The second section of the general aid formula, Incentive Aid, provides aid to school districts based on the educational degree status of teachers and aid for summer school programs. State statutes provide \$350 for each certified teacher holding a doctorate degree, \$250 for each teacher holding a 6-year or a master's degree, and \$150 for each teacher holding a bachelor's degree. The formula also provides compensation of \$.20 per student hour for each student participating in a summer school program, with maximum compensation of \$18 per student. In 1985-86, this part of the state aid formula provided \$3.6 million in revenue for school districts statewide.

The third section of the general aid formula is Equalization Aid, the residual of the total appropriation after Foundation Aid and Incentive Aid have been

provided. Districts qualify for this aid if the minimum qualifying tax levies and the accountable receipts defined in the formula do not equal guaranteed amounts. The guaranteed amounts are set on the basis of the funds to be distributed and bear no relationship to the actual costs of education. Weighting factors are built into the distribution formula; students are weighted by grade level, as in Foundation Aid. Additional weights are provided for sparsity of student population, enrollment increases or decreases within certain minimum and maximum parameters, students transported over 4 miles, and local programs for gifted and culturally deprived students.

In 1985-86, 19 percent of all school districts in Nebraska qualified for Equalization Aid, and \$32.9 million was distributed. Because the revenues from a minimum qualifying levy are factored into the formula, and because of the need factors noted earlier, Equalization Aid provides funds to the districts that have the lowest assessed property tax values per pupil and those with greater need, as defined by the formula. Equalization Aid in Nebraska might be more appropriately described as a foundation plan, such as that suggested in the early 1920s by George D. Strayer and Robert M. Haig, in which the state requires each district to tax at or above a minimum level and counts the tax revenue toward a state-guaranteed level of support (Garms, Guthrie, and Pierce, 1978).

Foundation plans have been the most prevalent systems for providing state aid for operating revenues of school districts. Augenblick (1984) noted that 22 states use this system, 10 states use a guaranteed tax base approach, and 14 states combine the two methods into a multiple-tier system.

While Nebraska's system may seem to be well within the mainstream of what other states are doing, about 70 percent of the funds have recently been distributed as flat grant money (Foundation Aid) rather than as Equalization Aid. Thus, the Nebraska system is quite atypical.

The Unicameral establishes the appropriation for state general aid each year and the monetary amount for each part of the formula. Over the 20-year history of state general aid in Nebraska, the proportion of the total appropriation designated for Foundation Aid and Equalization Aid has shifted markedly, but the amount designated for Incentive Aid has remained relatively stable (table 1). As the revenue priority has shifted to Foundation Aid, the capacity to equalize resources available to school districts throughout the state has diminished.

Table 1 - State general aid appropriations to public schools, Nebraska, 1972-73 to 1986-87

Year	Type of aid						
	Foundation		Incentive		Equalization		Total
	Million dollars	Percent	Million dollars	Percent	Million dollars	Percent	Million dollars
1972-73, ¹	12.9	36.8	2.9	8.4	19.2	54.8	35.0
1973-74	22.8	41.4	3.1	5.6	29.1	53.0	55.0
1974-75	22.6	41.1	3.2	5.8	29.2	53.1	55.0
1975-76	20.0	38.0	3.3	6.3	29.2	55.7	52.5
1976-77	22.3	40.6	3.4	6.1	29.3	53.3	55.0
1977-78	19.6	35.7	3.5	6.4	31.9	57.9	55.0
1978-79	21.5	39.1	3.5	6.4	30.0	54.5	55.0
1979-80, ²	24.4	44.4	3.6	6.6	27.0	49.0	55.0
1980-81 ²	57.0	60.0	3.6	3.8	34.4	36.2	95.0
1981-82	57.0	60.0	3.5	3.6	34.5	36.4	95.0
1982-83 ³	96.5	72.2	3.5	2.6	33.7	25.2	133.7
1983-84	96.5	72.1	3.4	2.6	33.8	25.3	133.7
1984-85	96.5	72.2	3.5	2.6	33.7	25.2	133.7
1985-86	90.6	71.3	3.6	2.8	32.9	25.9	127.1
1986-87	89.2	71.3	3.6	2.8	32.3	25.9	125.1
1987-88	87.4	71.6	3.6	2.9	31.6	25.5	122.6

¹Personal property tax exemption began.

²State aid increased by \$40 million.

³State aid increased by \$40 million transferred from personal property tax exemption rebates.

Source: Nebraska State Department of Education.

Tax on Insurance Premiums. State statutes also establish a tax on insurance premiums for support of state and county government (Sects. 77-907-14). The statutes allocate 50 percent of the revenues to the counties; 60 percent of the revenues allocated to counties are distributed to public schools and apportioned according to per-pupil average daily attendance. In 1985-86, this tax provided \$8.4 million in revenue to schools.

Special Education Funding. State statutes also define a number of categorical programs that provide revenue to public elementary and secondary schools. The largest is aid for handicapped children (Statutes of Nebraska, Chap. 43, Article 6). Nebraska is one of 27 states that supports programs for special education through categorical funding. Other states, including Iowa, distribute special education funds through the general aid formula.

Using guidelines for identification developed in state statutes (Sect. 43-604) and Nebraska Department of Education Rule 51, 11.4 percent of Nebraska's children have been identified as handicapped, which is slightly more than the national average of 10.8 percent (Nebraska Department of Education, undated). School districts have been reimbursed for services to handicapped children on the basis of 90 percent of allowable costs in excess of the average cost of education, 1 year in arrears. Transportation costs currently are reimbursed at 90 percent of costs, although the reimbursement was 100 percent until the law was changed in 1986. In 1985-86, school districts in Nebraska received state revenues of \$51.1 million to support special education programs and transportation.

Costs for educating handicapped children have been examined closely in Nebraska during the past few years.

Critics suggest that either costs have risen exorbitantly, or that too many children are being identified as needing special services. It is true that costs have risen. In 1974-75, the budget for special education was approximately \$16 million in Nebraska. By 1984-85, costs were approximately \$74 million. When this comparison is made based on deflated 1972 dollars, the increase is from approximately \$14.5 million to approximately \$29.5 million. At the same time, the number of children served increased from 23,288 (ages 5 through 18) to 30,734 (ages 0 to 21) (Nebraska Department of Education, undated). The proportion of total instructional costs devoted to special education increased from less than 10 percent in 1977-78, to more than 12 percent in 1982-83 (Nebraska Department of Education, undated). As indicated in a Nebraska Council of School Administrators position paper (1986), the increases in both money and numbers can be tied to specific policy changes, such as inclusion of learning disabled children, expanding the age range of students, adjusting the cost formula, and otherwise adjusting the categories of students served.

Nebraska is 1 of 12 states that uses an excess cost formula, which determines state aid as a percentage of the costs in excess of the costs of educating a nonhandicapped student (Crowner, 1985). This type of funding has advantages and disadvantages. While the formula includes no incentives for identification, particular types of placements, or maximum class sizes, it provides for local control and adequate funding. The formula also may discourage cooperative programs and may be more fitted to the needs of local educational agencies rather than state government (Special Education Task Force, 1985). Other formulas permit more state control over the cost of the program, although they may not serve students as well. In the 1987 legislative

session, the Unicameral stipulated in LB 413 that growth in the costs of Level I services, those provided to students for less than 3 hours a week, will be shared between the state and local districts. The state will pay half of cost increases until the state's share drops to 80 percent of the total excess cost. This provision is a move toward greater state control over program costs.

Nonresident Tuition. Because of the large number of Class I school districts, none of which serve students above grade eight, the issue of tuition payments to districts that provide education for these students has been a major concern. In 1985-86, these tuition payments totaled \$29.5 million (about 3.3 percent of school districts' general fund revenue).

The constitutionality of the statute governing determination of the tuition to be paid was successfully challenged in the courts (*Ewing v. Scotts Bluff County Board of Equalization*). In 1987, the Unicameral answered the objections of the court by revising the controlling statute (Statutes of Nebraska, Sect. 79-4102) to remove the discretionary right of school boards to accept less than the amount calculated through the formula.

Because the method for determining tuition amounts involves the use of a 5-year average of students served, school districts may pay tuition in years when no students are enrolled or may pay no tuition when students are enrolled. Nonresident tuition is, however, a kind of user fee and, as such, violates the principle of public education being supported as a public responsibility.

Other State Revenue Sources. State statutes authorize several other categories of programs for students, including vocational education (Statutes of

Nebraska, Sects. 79-1419-35) and support for wards of the court (Statutes of Nebraska, Sect. 79-445).

Distribution of Revenue Sources

In addition to the revenue authorization discussed above, Nebraska school districts derive revenue from federal categorical programs, that is, money allocated for specific categories of programs or students, and federal noncategorical programs such as aid to districts that are impacted by federal installations and their employees. Each of these revenue services is summarized in table 2.

The distribution of revenue sources for the support of Nebraska schools is not typical of the distribution in most states. In 1984-85, the national average for state support of public education was 46.3 percent. Nebraska's level of state support in 1984-85 was 22.7 percent. Nebraska ranked 49 among the 50 states in level of state support in comparison with other states (U.S. Department of Commerce, 1986). Nebraska's level of local support, however, is correspondingly high in comparison with other states.

Moreover, local support for public schools has increased recently and state support has decreased (table 3). Local district taxes have increased as a source of revenue, while state aid has decreased. The decrease in state support means that sales and income taxes provide less support to schools, and property taxes provide more support. Because property taxes account for most of the local revenue to support schools (93.6 percent in 1985-86), Nebraska's school districts are more dependent on local property taxes than school districts in most other states.

Table 2 - Sources of revenue for Nebraska schools, 1985-86

Source of revenue	Amount (millions)	Percentage of total receipts
Local:		
District taxes	\$516.2	58.4
Public power taxes	\$9.2	1.1
Other	\$26.2	2.9
Total	\$551.6	62.4
County:		
Fines and fees	\$7.6	.8
Nonresident tuition	\$29.5	3.3
Other	\$.3	.1
Total	\$37.4	4.2
State:		
General aid	\$127.1	14.4
Special education	\$51.1	5.8
Wards of the court	\$1.1	.1
Apportionment	\$13.6	1.5
In-lieu-of school land tax	\$4.4	.5
Insurance premium tax	\$8.4	.9
Pro-rata motor vehicle	\$2.2	.3
Other	\$20.2	2.3
Total	\$228.1	25.9
Federal:		
Categorical programs	\$42.7	4.8
Noncategorical aid	\$9.8	1.1
Total	\$52.5	5.9
Nonrevenue sources	\$14.1	1.6
Total, all sources	\$883.7	100.0

Source: Nebraska Department of Education, Finance Section, "Financing Education in Nebraska," March 1987.

Table 3 - Sources of revenue for Nebraska school districts' general funds, 1982-86

Source of revenue	Year			
	1982-83	1983-84	1984-85	1985-86
	Percent			
Local district taxes	53.68	54.89	55.22	58.41
All local sources	57.96	59.22	59.70	62.41
All county sources	4.31	4.05	4.26	4.24
State (formula)	18.02	17.01	15.53	14.38
Special education	5.36	5.48	5.55	5.78
All state sources	30.06	28.75	26.72	25.82
Federal aid	5.86	6.04	6.35	5.93
Nonrevenue sources	1.81	1.94	2.97	1.60

Sources: Nebraska Department of Education, Finance Section, "Financing Education in Nebraska: Comparison of Revenues and Expenditures for School Years 1982-83 and 1983-84," "Financing Education in Nebraska: Comparison of Revenues and Expenditures for School Years 1983-84 and 1984-85," and "Financing Education in Nebraska: Comparison of Revenues and Expenditures for School Years 1984-85 and 1985-86."

Organization of School Districts

The revenues described earlier are available in varying amounts and proportions to all school districts in Nebraska. The organization of school districts is an important element of the school finance system in the state.

In 1986-87, there were 302,836 children enrolled in public and private schools throughout Nebraska.³ During that period 35,697 students (11.8 percent) were enrolled in private schools. The remaining 267,139 students were the responsibility of the 927 fiscally independent school districts in the state, or they were enrolled in state-operated schools.

Classification of School Districts

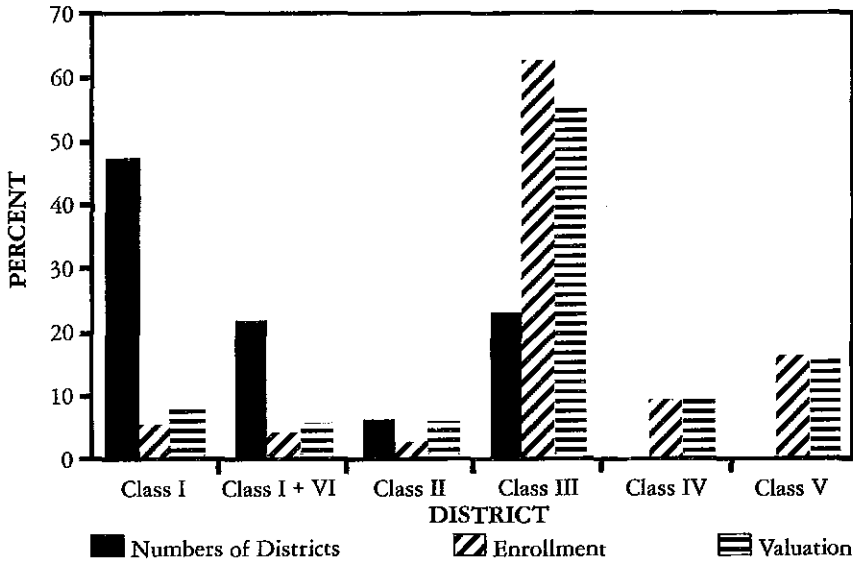
The Statutes of Nebraska (Sects. 79-102-106) establish a classification system for school districts. The six classes of school districts are defined as follows:

- Class I: Elementary grades only;
- Class II: 1,000 or less resident population and elementary and high school grades;
- Class III: More than 1,000 and less than 100,000 resident population and elementary and high school grades;
- Class IV: 100,000 or more and less than 200,000 resident population and elementary and high school grades;
- Class V: More than 200,000 resident population and elementary and high school grades; and
- Class VI: Only secondary grades.

The city of Lincoln is the only Class IV school district in the state, and the city of Omaha contains the only Class V school district in Nebraska.

Most of the independent school districts provide educational services for a few students and are Class I districts, while most students are enrolled in Class III districts (figure 1). Moreover, property valuation in Nebraska is not distributed proportionate to student enrollment. The Class III districts, for example, enroll 64 percent of the state's students but include only 55.1 percent of the total valuation of property in the state. The Class I and Class VI school districts enroll 7.8 percent of the students and include 15.4 percent of the property valuation. The percentages of students enrolled and property valuation are comparable only in Lincoln and

FIGURE 1
Nebraska Public School Districts, by Class of District,
Student Enrollment, and Property Valuation, 1986-87



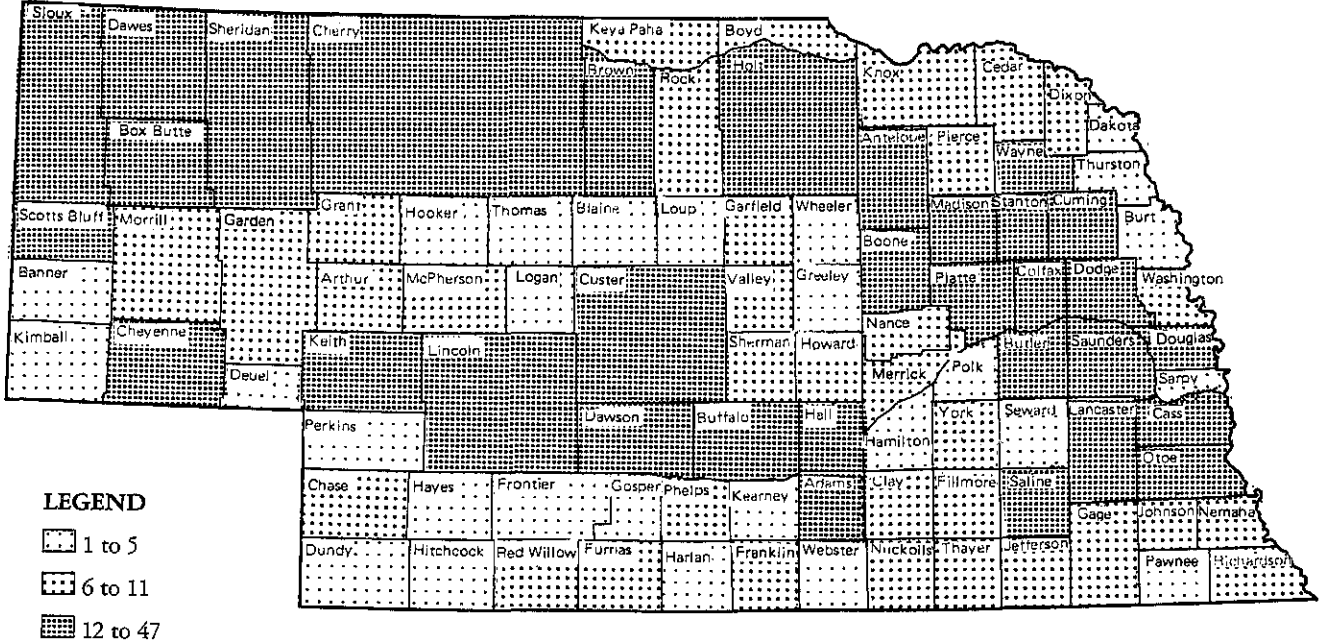
Note: Class I refers to those districts not attached to a Class VI district. Class I + VI includes those Class I districts that are attached to a Class VI district and the Class VI districts to which they are attached.

Source: Nebraska Department of Education, Management Information Services, "Nebraska Public School Districts — 1986-87."

Omaha (the Class IV and Class V districts). These disparities increase the pressure on the property tax in the Class III districts.

Figure 2 shows the county distribution of public school districts during the 1986-87 school year. Eight counties (Banner, Blaine, Dundy, Hayes, Hooker, Logan, Loup, and Wheeler) in the state had only one district, with student enrollments in these areas ranging from 135 in Loup County to 427 in Dundy County. Holt County, the county with the largest number of school districts, had 47 independent school districts, with the smallest enrolling one student and the largest enrolling 813. By contrast, Douglas County has the largest student

FIGURE 2
Distribution of Public School Districts in Nebraska,
by County, 1986-87 School Year



Source: Nebraska Department of Education, "Fact Sheet 1: Statistics and Facts about Nebraska Schools, 1986-87 School Year."

population among the counties. Douglas County had 14 fiscally independent school districts in 1986-87. The smallest, a Class I district, enrolled 14 pupils, and the largest, Omaha Public Schools, enrolled 41,638.

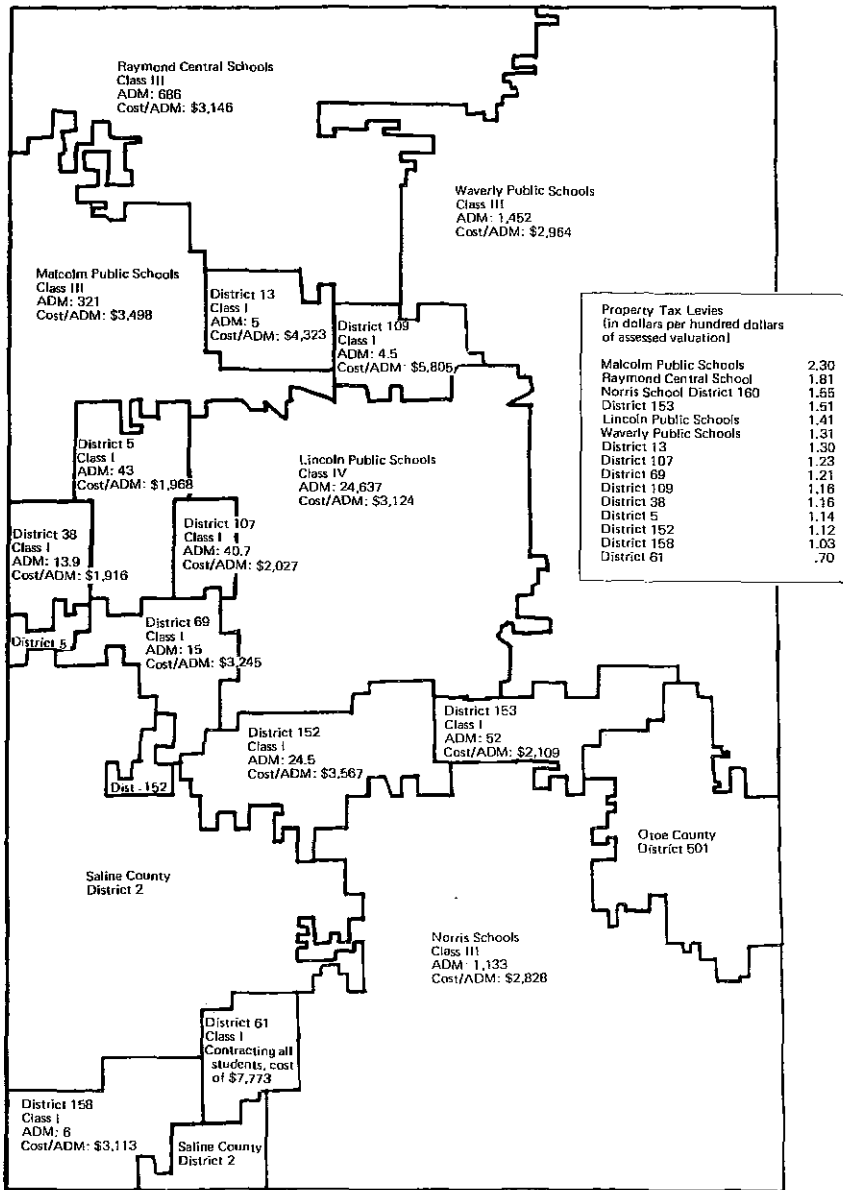
The current organization of school districts in Nebraska is easier to understand if the distribution of districts within a single county is examined. Figure 3 shows school districts headquartered in Lancaster County in 1985-86. Lancaster County is the state's second most populous county and includes the city of Lincoln.

Figure 3 illustrates that school districts that are headquartered in one county frequently contain property located in other counties. Norris Schools in Lancaster County, for example, includes property in Otoe and Gage counties, while some property in Lancaster County is part of the tax base of school districts headquartered in neighboring counties. Consequently, it is difficult to discuss student enrollments and property valuations by county. In addition, inequities in property assessment procedures among counties are reflected in inequities within a school district.

Figure 3 includes the property tax levies for the General Fund of the districts headquartered in Lancaster County. The districts differ in tax levies, student enrollments, and expenditures per student. Whether this represents a system of common schools, will be addressed later.

Although the number of public school districts in Nebraska has declined dramatically since 1949 when Nebraska had 6,734 fiscally independent school districts, the state still has an extraordinary number of districts in comparison with other states. Only Illinois, California, and Texas have more school districts than Nebraska and the public school enrollments in those states are 6.9 to 16 times larger than those in Nebraska.

Figure 3
School Districts in Lancaster County, Nebraska, 1985-86



ADM = average daily student membership.
Source: C. C. Hudson, H. Smal, and M. Smal. *Rankings of Nebraska's Class II, III, IV, and V School Districts by Selected Financial Data from 1985-86 and 1986-87*. Lincoln, NE: Bureau of Educational Research and Field Services, University of Nebraska-Lincoln, 1987; Lancaster County Superintendent's office.

Because the Class I districts typically operate without a superintendent or principal, Nebraska maintains the office of the county superintendent of schools. The 93 county superintendents assist the school boards in Class I districts. This assistance includes programming for special education students and evaluating teachers. The cost of maintaining the office of the county superintendent in 1985-86 was about \$2 million.⁴

A comparison with Iowa is helpful in understanding the district organization facing Nebraskans. Iowa, with 481,198 students and 436 school districts, is also considering school reorganization. Iowa has 23 school districts (5 percent) with fewer than 200 students and 140 school districts (32 percent) with fewer than 400 pupils (Roos, 1987). In comparison, Nebraska had 743 school districts (78 percent) with fewer than 200 students and 754 school districts (79 percent) with fewer than 400 pupils.

Reorganization of school districts has been a controversial issue in Nebraska for several years. In 1985, the Unicameral passed LB 662, which would have required the merger or affiliation of all Class I school districts in the state with Class II, III, IV, V, or VI districts by 1990. A petition drive resulted in a referendum on the ballot question in the November 1986 election. The reorganization was defeated by a substantial margin. The 1987 Legislature was again presented with bills concerning the reorganization of school districts. An agreement was made between the chair of the Education Committee and the governor to postpone any reorganization proposals until the 1988 session.

Educational Service Units

Educational Service Units are intermediate education agencies created by the Nebraska Legislature in 1965. Because the service units are financed largely by property tax revenues and by contract fees charged to local school districts, service units are a significant part of the total school finance system in Nebraska.

In LB 688, the 1987 Unicameral clarified the mission of the service units to be that of providing service to schools "as identified and requested by member school districts," providing "for economy, efficiency, and cost-effectiveness" in the delivery of educational services, providing "leadership, research, and development in elementary and secondary education," and assisting in the "enhancement of educational opportunities" in local schools.

Nebraska has 17 service units that include several counties each and 2 service units operated by school districts, which are the school districts of Lincoln and Omaha. Eight counties that currently are not part of any service unit will be placed in units by January 1988. Individual school districts will be able to withdraw from service unit membership between January 1 and December 31, 1988.

Service units are permitted by statute to levy taxes up to 3.5 cents per hundred dollars of valuation (Statutes of Nebraska, Sect. 79-2210). Approximately one-third of the service units are at, or near, this limit (Educational Service Unit Planning Committee, 1986). In 1984-85, local district taxes accounted for \$9.3 million of the \$25 million revenue for the general funds of all service units. Contracted services accounted for an additional \$12.7 million (Bowmaster, 1986). Approximately \$17.3 million of the \$25 million budget in 1984-85 was spent on

instruction, support services for pupils, support services for staff, business support services, and repair and maintenance. These were services that school districts would provide in the absence of the service units. Approximately \$2.5 million was spent on costs of administration and the operation and maintenance of service unit facilities.

Historically, the service units in Nebraska have operated with a great deal of discretion. As stated in the statutory revisions passed in the 1987 legislative session, the State Board of Education is required to develop rules and regulations for the accreditation of service units to ensure that service unit programs are evaluated at least every 7 years for responsiveness to school district needs. They are also required to ensure that public revenues are being used in ways consistent with the goals and mission assigned to the service units.

Enrollment Trends

Nebraska's problems with reorganization of school districts are very difficult to solve because of the uneven distribution of the population, including the school-aged population, within the state. The state's 16 counties that show consistent growth are also the counties with the largest population and the most economic diversity. In general, these counties are located along Interstate 80 and the Platte River, and they include the state's metropolitan counties.⁵ In 1980, these counties accounted for 66 percent of the state's population and only 16 percent of the land area (Deichert, 1986). According to the 1985-86 census of school-aged children, these counties contain 69 percent of the school-aged population. In addition, they contain the headquarters of 25 percent of the fiscally

independent school districts, and 56⁶ percent of the assessed property valuation in the state.

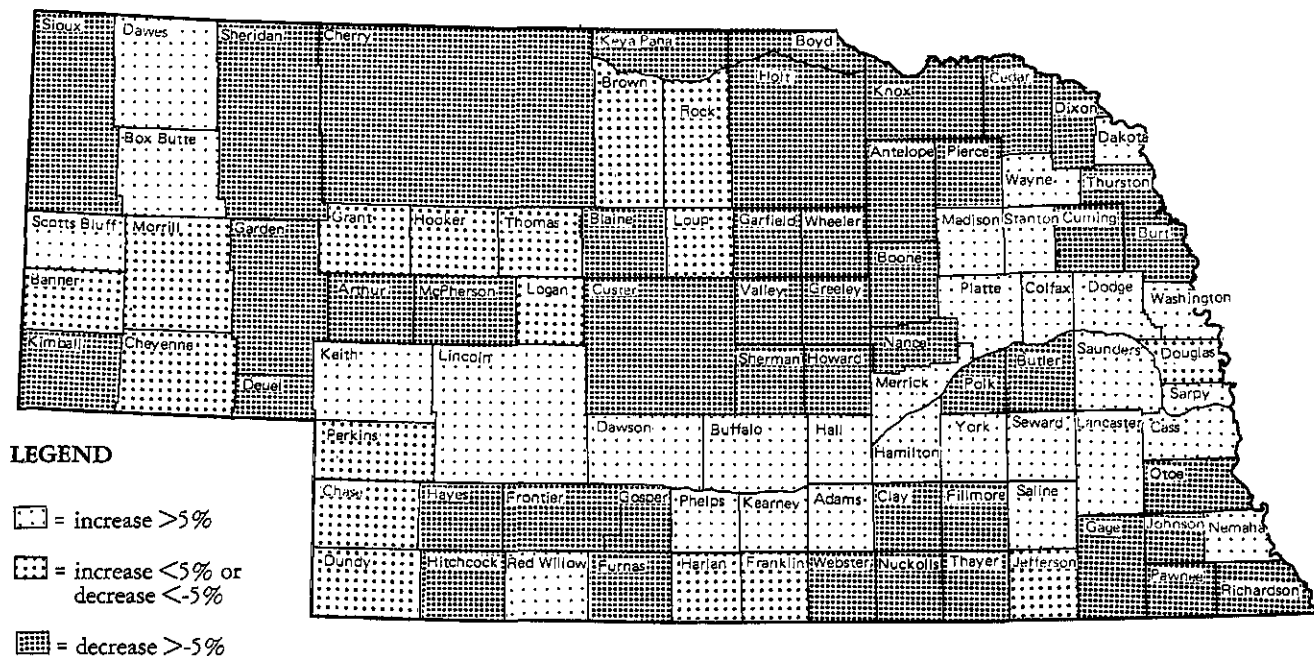
Thus, most of the state's school-aged children are enrolled in a few of the state's independent school districts. Local tax revenues are raised by taxing a disproportionately small share of the state's property tax base. These problems are likely to get worse in the next decade.

Figure 4 shows the projected percentage of losses and gains in numbers of children, ages 4-17, in the 93 counties of Nebraska by the year 2000. If these projections are accurate, the number of children in this age group will decrease in 62 counties. In 48 of these counties, the decrease will be 5 percent or greater (Deichert, 1982).

Problems in Financing Nebraska's Public Schools

The current system of financing and organizing school districts in Nebraska poses several important problems for public education. Each year several proposals are introduced in the Unicameral to modify the organization of school districts, the formula for state support, the funding for special education, or other educational programs. Historically, only incremental changes have been possible. The reorganization bill, which was passed by the Unicameral in 1985 (LB 662), was defeated by referendum. Major sections of the Omnibus Educational Reform Bill passed in 1984 (LB 994) have remained unfunded. Because the current system of financing schools relies so heavily on local support, problems with financing schools have become more serious in many parts of the state as population has decreased and the general economic condition has deteriorated.

FIGURE 4
 Projected Percentage Losses and Gains of Children
 Aged 4-17 in Nebraska by 2000



Source: J. A. Deichert. *Nebraska Population Projections 1985-2020*. Lincoln NE: Bureau of Business Research, University of Nebraska-Lincoln, 1982.

Imbalances in the Taxes Supporting Schools

Nebraskans appear capable of supporting public education. The state ranked 23rd in the nation in per capita income in 1985, and 12th in the percentage of personal income left after state and local taxes (Nebraska Tax Research Council, 1986).

Because the overall capacity of the state to support education appears underutilized, the extent to which the major tax sources are used deserves attention. The state's sales tax and income tax collections per \$1,000 of personal income in fiscal year 1984-85 ranked 39th and 36th respectively among the states (Nebraska Tax Research Council, 1986). Nebraska ranked 13th in the nation in the amount of local property tax collected per \$1,000 of personal income. The imbalance in the use of the three major tax bases to finance government, particularly the heavy burden on local property tax to support education, has had a negative impact on public relations for educators.

Local Tax Inequities

One of the problems facing Nebraskans is inequity in property tax bases, tax rates, and assessment practices among counties and school districts.

Tax Rates. Nebraska's constitution prohibits the levying of a property tax for state purposes (Article VIII, Sect. 1A). At the same time, school districts and other government units below the state level have become heavily dependent on property taxes as a source of revenue. In 1985-86, property taxes represented 93.6 percent of the revenues for the general fund received from local sources by school districts. This amount

represents 58.4 percent of all general school district fund receipts (table 2). School districts collected approximately 60 percent of all property taxes levied by local governments in Nebraska in 1985.⁷

Taxpayers are very aware of the property tax. They know how much they pay. Equity of the tax and accountability for its use are strong concerns. As the major users of the property tax, public elementary and secondary schools are subjected to close scrutiny by a tax-conscious public.

The property tax base per student is not uniform among school districts. Variation in the distribution of population and property wealth caused tax base per pupil ratios as high as 65:1 among the state's 281 Class II, III, IV, and V school districts during the 1986 tax year, with accompanying general fund tax rates ranging from \$2.82 to \$.76 per \$100 of valuation (Hudson, Smail, and Smail, 1987). Comparable tax rates for the 904 Class I, II, III, IV, and V school districts, when the Class I rates included levies for Class VI or secondary school tuition purposes, ranged from \$2.82 to \$.43 per \$100 of property valuation.⁸ The median tax rate for public schools was \$1.26 for all 904 districts and \$1.50 for the general fund of those organized as kindergarten through twelfth grade districts.

Nebraskans are most aware of inequities in tax rates when they compare their taxes with those of others in the general area. In 1986, property tax rate ratios between school districts were over two-to-one in 47 of the state's counties.⁹ For example, the range in tax rates for Adams County was \$0.48 in District 29 and \$1.55 in the Hastings district; in Butler County, it was \$0.54 in District 24 and \$1.76 in Rising City; and in Dawson County, it was \$0.53 in District 12 and \$2.23 in Cozad. These rates include levies for county high school tuition

or Class VI membership. Typically, the lower tax rates were levied on property in Class I school districts, even when the levies for secondary school costs were included in the totals. The perceived inequities in school tax rates, particularly among people in a common governmental unit, such as a county, are a source of discontent.

The range in tax rates illustrates the inequity in the current system for local support of schools. The issue is arguable because the lower rates usually occur in the more sparsely populated rural areas where a few individuals are major property holders and pay most of the property taxes. Farmers, ranchers, and other property intensive business owners are particularly burdened by the property tax and often view it as an unfair business tax. Action by the Legislature in 1985 to declare agricultural and horticultural land as a separate class for tax assessment purposes may shift property tax burdens in some areas rather dramatically to residence owners. Inequities in tax rates probably will not be alleviated because this statutory change merely legalizes a common practice, that is, underassessment of such property by county assessors. The net effect of the 1985 law cannot be determined at this time.

Assessment Practices. People frequently compare their tax rates to determine if they are being treated fairly. Such comparisons may lead to erroneous conclusions, because taxes paid are determined by multiplying a tax rate by the assessed value of the property--the tax base. Any tax system's equity is no greater than the accuracy by which the base for the tax is determined. The property tax base is arrived at by elected county assessors in Nebraska. Although elected, they must complete a modest training program provided

by the state that includes instruction in the use of uniform assessment practices.

Assessment-to-sales ratios for 1986 on single-family residential improved property typify the assessment problem.¹⁰ This class of property should be assessed at 100 percent of its market value. Among counties reporting over 100 sales in this classification, Adams County reported an assessment/sales ratio of 94.4 percent; Cass County, 75.6 percent; Douglas County, 85.9 percent; Hall County, 85.7 percent; and Saunders County, 70.1 percent. The variations are much greater when counties with fewer sales are included and when the other 17 classes of property are reported.

Because school districts often include property in two or more counties, yet levy a uniform property tax rate, the various practices of assessors result in taxpayers within the same school district paying an unequal amount of tax on what is actually comparable property. More inequity is introduced when the state distributes funds to school districts based on a formula that uses local property valuations as a measure of financial ability. This is what occurs in the Equalization Aid portion of the state general aid formula. Such misinformation provides a false impression of local fiscal capacity and gives an advantage to underassessed units in the form of a greater share of state aid appropriation.

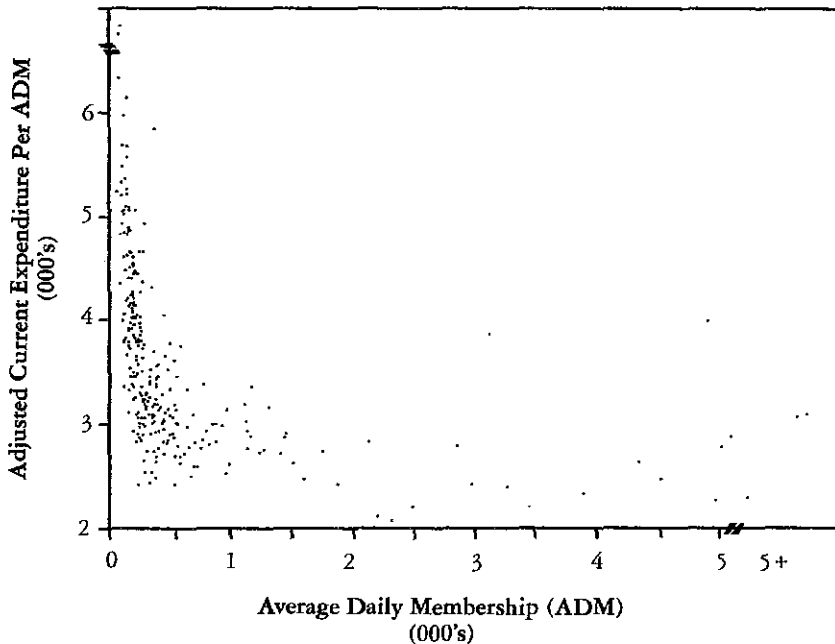
Local Spending Differences

Differences in spending per student among school districts occur for a variety of reasons and may indicate inequities in educational opportunities. When such differences are substantial, the causes should be

examined to determine whether the system is as efficient and effective as it might be.

Expenditures per Student. School districts' general fund expenditures per student vary greatly. In the 1985-86 school year, expenditures per student ranged from \$2,139 to \$8,085 in the 281 districts that provide education from kindergarten through twelfth grade. The range was much greater when the Class I districts, some with enrollments as low as one student, were considered. Figure 5 illustrates the relationship between the average

FIGURE 5
Adjusted Expenditures Per Average Daily Membership,
Nebraska, 1985-86¹



¹Data include Nebraska's Class II, III, IV, and V districts and are for the 1985-86 school year. Data were obtained from Nebraska Department of Education records.

daily membership of Class II, III, IV, and V school districts and expenditures per student. Figure 5 indicates that higher expenditures per student are related to lower enrollments. This relationship could be considered an efficiency, or cost-effectiveness, measure.

Education is a labor intensive industry, with salaries, benefits, and contracted human services accounting for 80-85 percent of the budget. Low student-employee ratios greatly increase expenditures per student. School districts with low enrollments are subject to wide variations in expenditures per student because the experience and formal education of faculty have a major impact on the school budget. Figure 5 suggests greater cost-effectiveness as a school district's enrollment reaches 250 to 1,000 students. The most cost-efficient school districts appear to have enrollments ranging from 1,000 to 5,000 students. Larger districts appear to have somewhat higher costs per student.

The Nebraska Department of Education reported similar relationships for the 1985-86 school year. The average cost per student was \$2,786 (for elementary programs) in Class I districts. The average cost per student was \$4,682 in Class II districts, \$3,197 in Class III districts, \$3,416 in Lincoln Public Schools (Class IV district), \$3,233 in Omaha Public Schools (Class V district), and \$4,785 in Class VI districts (secondary programs only).¹¹

Teachers' Salaries. Nebraska does not pay teachers well in comparison with other states. Nebraska ranked 42nd among the states in average salary paid to teachers in 1985-86 (Nebraska State Education Association, 1986). South Dakota was the only adjacent state with a lower average salary (National Education Association, 1986).

Table 4 shows information about experience, degrees, and average salaries of teachers in the various classes of school districts. The percentage of teachers with master's degrees, their experience, and their average salaries are related to the class of a school district. Teachers in school districts with larger enrollments appear to have more experience and education.

Table 4 - Tenure, degree, and salary statistics for public school teachers, Nebraska, 1985-86¹

Class of district	Teachers				
	Number	Full-time equivalent	Percent with masters degree	Average years in district	Average salary
I	1,492	1,400.9	7.0	6.1	\$15,308
II	971	922.1	11.0	7.5	\$17,697
III	11,118	10,839.8	24.0	9.6	\$20,576
IV	1,466	1,402.2	32.0	10.7	\$22,564
V	2,202	2,188.3	32.0	11.8	\$24,504
VI	414	385.7	25.0	8.8	\$21,194
Total	17,663	17,139.0	24.4	9.5	\$20,669

¹Data include school district personnel who are employed only as full- or part-time teachers. Personnel with assignments other than classroom teaching were excluded.

Source: Nebraska State Education Association, *Salary Schedules and Salaries, 1986-87*.

Program Inequities. Teachers and administrators in Nebraska are well-trained, and the material that is taught in Nebraska's schools is generally taught well (Hughes, 1987; *Education Week*, 1987). But inequities in educational opportunities are inherent in the system because of the range of resources. The program

provided is apt to be minimal in resource scarce districts, while a much broader program is more likely in wealthier districts. The opportunities for an education are limited by local resources instead of by state resources and are, therefore, inherently inequitable.

Resources that are needed to provide a good education system include adequate funds, good staff, a critical mass of students, and a community with high expectations for schools. These resources are not totally independent of each other. Citizens who have high expectations for schools will provide the funds to hire good staff and will demand good teaching. While the number of students is an important determinant of the program provided, to some extent, additional money and good teaching can overcome the effect that a shortage of students has on the quality and scope of an educational program. For example, a child can be taught to read and write with only one teacher present, if the community is willing to support such a system. Many of the goals of public education in Nebraska, however, can be better accomplished when a child has the opportunity to interact with other children of the same age. Moreover, economic and population changes in Nebraska have created new demands on scarce resources in many communities. Communities that could at one time support high-quality educational programs for small numbers of students may no longer be able to do so.

Table 5 shows the distribution of school districts by size of enrollment and classification. As table 5 shows, in 1986-87 operating school districts in Nebraska ranged from four Class I districts enrolling one student each, to the Omaha Public School District, with an enrollment of over 30,000 students (41,638 students in 1986-87). The 40 Class I school districts in table 5 that show no enrollment exist as legal entities, but did not operate a

Table 5 - Number of school districts by enrollment and classification, Nebraska, 1986-87

Number of students	Class						Total number of districts
	I	II	III	IV	V	VI	
0	40	-	-	-	-	-	40
1	4	-	-	-	-	-	4
2-3	21	-	-	-	-	-	21
4-5	50	-	-	-	-	-	50
6-7	66	-	-	-	-	-	66
8-9	55	-	-	-	-	-	55
10-19	174	-	-	-	-	-	174
20-29	85	-	-	-	-	-	85
30-39	39	1	-	-	-	2	42
40-49	20	-	-	-	-	-	20
50-59	20	1	-	-	-	3	24
60-69	11	1	1	-	-	-	13
70-79	6	-	-	-	-	-	6
80-89	4	2	-	-	-	2	8
90-99	1	6	1	-	-	1	9
100-149	12	22	4	-	-	2	40
150-199	6	19	31	-	-	1	57
200-249	2	6	27	-	-	4	39
250-299	-	-	26	-	-	4	30
300-349	1	-	21	-	-	3	25
350-399	-	-	18	-	-	-	18
400-449	3	-	9	-	-	-	12
450-499	-	-	11	-	-	-	11
500-599	1	-	17	-	-	-	18
600-699	1	-	8	-	-	1	10
700-799	-	-	4	-	-	-	4
800-899	-	-	6	-	-	-	6
900-999	-	-	4	-	-	-	5
1,000-1,249	-	-	7	-	-	-	7
1,250-1,499	-	-	6	-	-	-	6
1,500-1,749	-	-	2	-	-	-	2
1,750-1,999	-	-	2	-	-	-	2
2,000-3,999	-	-	10	-	-	-	10
4,000-5,999	-	-	3	-	-	-	3
6,000-7,999	-	-	2	-	-	-	2
8,000-9,999	-	-	1	-	-	-	1
10,000-29,999	-	-	1	1	-	-	2
30,000 and more	-	-	-	-	1	-	1

- = not applicable.

Source: Nebraska Department of Education, "Fact Sheet 1: Statistics and Facts about Nebraska Schools, 1986-87 School Year."

school during 1986-87. Either no elementary school-aged children lived in the district, or they attended school elsewhere. The median enrollment for schools serving students in kindergarten through grade twelve is in the 250-299 group, which suggests enrollments of fewer than 25 students per grade in half of the districts. High schools enrolling fewer than 25 students are not permitted to continue for more than 3 years, except under certain conditions related to isolation or federal funding (Statutes of Nebraska, Sect. 79-701). Some districts were close to this number in 1986-87.

Low enrollment may influence the learning environment in an elementary school, but it need not change the program of study. Lack of a critical mass of students in the seventh grade and beyond, however, can restrict the scope and quality of programs. The choices available to students in secondary schools with low enrollments are not as extensive as those in larger schools. In many instances, courses are not taught as well, if for no other reason than that teachers must prepare for more courses each day. As enrollments in secondary schools become smaller, school districts have difficulty obtaining, and retaining, faculty for courses in specialty areas and providing equipment and facilities for courses that are taught infrequently or to small groups.

State Funds for Equalization

As noted earlier, funds appropriated for education through the state's School Foundation and Equalization Fund (general aid to school districts) are subdivided into three categories: Foundation Aid, based on number of students; Incentive Aid, based on teachers' levels of education and summer school programs; and Equalization Aid, based on property valuation relative to need as

defined by the legislature. The state's appropriations decreased from \$133.7 million in 1984-85 to \$122.6 million in 1987-88, with reductions generally confined to Foundation Aid.

In 1986-87, \$32.3 million was budgeted for Equalization Aid. This represents about 26 percent of the \$125.1 million budgeted for all general aid and 15 percent of all state support. Moreover, the state's equalization aid of \$32.3 million accounts for less than 4 percent of school districts' general fund expenditures. Variations in tax bases, expenditures, and tax rates, coupled with minimal equalization aid, explain the ineffectiveness of the current method to achieve fiscal equity for school districts in the state.

Summary and Conclusions

The evidence presented in this chapter leads the authors to the following conclusions about financing public elementary and secondary schools in Nebraska.

- Although financial reform of some states' school finance systems has been achieved through legal challenges, apparently Nebraska's problems must be solved by the state legislature. The sparse language in Nebraska's constitution that outlines the state's commitment to public schools is not comparable to the language used as the basis for legal cases in other states.
- The appropriate missions and goals of the public school system must be included in any discussions concerning public school finance. The Unicameral defined the mission of the schools in LB 994, now incorporated in state statutes as Section 79-4139.

Policy decisions about financing public schools must refer to the mission for the schools established in state statutes.

- Nebraska's 20-year-old design for funding public elementary and secondary education does not serve school districts equitably. This is because of variations in needs, as indicated by total enrollment and tax bases.
- The design of an equitable and effective financing system for Nebraska's public schools is hampered, perhaps made impossible, by the organization of districts into more than 900 units subdivided into six classes that are based on population or grade levels served. Variations in needs, special interests, and local resources defy construction of an equitable financing program.
- Depopulation in many rural areas has increased stress on schools with low enrollments. Restricted curricula in secondary schools, less specialized teaching assignments, and high costs per student will continue if enrollment projections are correct. Low enrollment is a major cause of variations in expenditures per student among school districts. Both cost-effectiveness and program-comprehensiveness would be improved if enrollment centers were larger.
- Nebraskans are not overtaxed in comparison with residents of other states. Tax bases are not distributed equitably, however, and some residents have more of a tax burden than others. Laws that restrict access to various tax bases prevent some

governmental units from using their true tax capacity.

- Although the current funding system recognizes only the state and local school districts as tax units to support schools, other alternatives exist. These alternatives should be considered, particularly in a state with many small districts and sparsely populated areas.
- Assessment of property for tax purposes is not standardized. This adds to the resentment local taxpayers feel toward paying property tax, and to inequities in any formula for distributing aid to school districts based on property valuations.
- Although Nebraska has had a good supply of high-quality educators in the past who have provided excellent schooling for students, discrepancies in salaries, both within the state and between states, will lure talented staff away from many of our school districts.
- State government controls the tax rates and which units of government will have access to the income and sales tax bases. These taxes are broad and generally progressive; but, they are subject to instabilities, such as fluctuations in the economy, competing demands for funds, and political shifts. Many believe that local governments retain control of programs if they are supported with locally collected taxes. While this may be partly correct, local property taxes are inequitable because of uneven assessment practices, uneven distribution of the tax base, and the regressive nature of property

taxes. Many citizens resent the system. The dilemma appears to be that state government has access to the tax bases needed to best finance schools, but lacks the will to tax; while local governments want local control, but lack access to equitable tax bases.

We cannot contend that the system for financing public schools in Nebraska has failed to provide most of the state's youth with an adequate or superior education, despite inequities in access to programs and tax efforts. But, changes in technology, variations in tax capacity, and shifts in population are creating new problems that call for policy decisions to maintain or improve the system.

Policy Decisions

Nebraskans face several policy decisions if elementary and secondary education in the state is to be maintained and improved through an equitable system of financial support. In a broad sense, financial planning for education requires policy decisions about the program to be financed, the methods for delivering the program, the means for funding the program, and the methods for allocating funds to school districts.

What Is to Be Taught and to Whom?

The types of educational programs required by students are changing. As implied by Cubberley at the beginning of this chapter, equal educational opportunity is a goal to which we should strive, although it may never be fully realized. Policy is needed to establish clearly the minimum program that should be available to all

youth, the role of the state in providing this program, and the means by which exemplary and innovative programs will be encouraged in districts with varying financial and human resources. Such policy is inexorably tied to the availability of funds.

Agreement about what is to be taught, and to whom, will not be easy. Although the mission of the public schools has been defined in state statutes, some citizens may view the mission as exceeding basic program requirements, and others will see it as far short of the program to which the state should aspire. Recent legislation has expanded the school-aged population to include preschool handicapped children and profoundly handicapped children. Pressures exist for strengthening programs for gifted children, for developing preschool and extended care programs, and for expanding adult education programs. How much are Nebraskans willing to support, given that the state probably does not have the resources to provide everything that is desirable?

How Shall the Program Be Delivered?

Although the quality of education appears to be generally good in Nebraska, evidence suggests that the system is inefficient because of the large number of school districts. Low enrollments are related to high costs per student and constrain program offerings and social experiences, resulting in a lower gain for the money invested.

Because any funding system is likely to involve statewide taxes, and because graduates of most school districts migrate from the area, Nebraskans should be concerned about organizing school districts to maximize financial resources. Policy is needed to define the best

methods for organizing administrative and local tax bases to gain maximum benefits from education funds. Such policies should encompass the role of educational service units and consider the possibility of developing cooperative agreements among school districts for specific needs. These policies should define and provide for the needs of isolated school districts.

How Shall State and Local School Funds Be Acquired?

Although all of the sources for funding public schools should be reviewed, the critical areas appear to be the methods used to obtain state aid and local tax revenues.

State Revenue Policy. Policy is needed regarding the adequacy and stability of sources of revenue for state aid to schools. The state should determine if school districts should continue to receive funding from the state's general revenue fund, where they compete with other governmental units for income and sales tax revenues, or whether other sources should be used, such as a state lottery or other forms of gambling, or a designated income or sales tax levy.

Local Revenue Policy. Current policy permits an unlimited districtwide property tax as the prime source from which school districts obtain the balance of their budget needs. The inequities in this system are caused by uneven assessment practices and property resources. Assuming that the property tax will continue to have an important role in financing public schools, policy is needed to ensure that property is equitably valued for tax purposes. Greater equity might be achieved through

stricter supervision of county assessors by state officials, through assignment of adjustment indexes to counties where assessment-to-sales or other approved measures indicate deviations from the state standard, or assessment of property at the state level.

An additional concern is the capability of local school districts to levy taxes beyond those required for participation in the state's equalization formula. School districts in Nebraska currently operate with immense fiscal independence, unlike several other states, including Iowa and Kansas, where property tax levies are limited. Reliance on local revenues and the lack of limitations on the local tax levies severely restrict state efforts at equalization. Policy is needed to determine the degree to which Nebraska's school districts will be fiscally independent. If the state limits fiscal independence, policy will be needed to ensure continued local control and the continued capacity of local districts to be innovative and responsive in educational programs.

Policy is needed to define an adequate local tax base for financing schools. The property tax does not fairly represent local tax capacity, especially in a state with many small school districts and extreme variations in local economies. Alternatives include local or regional income or sales taxes, and a uniform tax, probably on income, to be collected locally for schools. The ability to move to avoid a local income tax and absentee ownership of property create difficulties for using an income tax in small governmental units. This system could operate equitably in regions as large as most counties; funds would be redistributed to schools districts. Hudson (1986) presents a thorough discussion of broadening the tax base for local school districts in Nebraska to include optional county sales, income, or property taxes to supplement a district property tax.

How Shall State Aid Be Allocated?

The state needs to clarify its policy about the purpose of state aid to school districts. Sound policy about allocating state funds to school districts must stem from a philosophy about its intended purposes. Will the purpose be to provide property tax relief, to guarantee funding for a state-determined program in each district, to guarantee equal access to funds, to guarantee taxpayer equity, to provide incentives for broader and better educational programs, or to encourage equal opportunity? Allocation must be based on the fundamental purposes of the program and must be tailored to circumstances involving organization of school districts, variations in local tax capacities, and the role of the state in supporting public schools.

Policy is needed to determine the degree to which the state will be involved in supporting public schools and the mechanisms by which state aid will be allocated. The amount of money allocated to general aid must be adequate to the purposes defined by the state. Given adequate funding, the following alternatives for distributing funds are possible.

If the purpose of state aid is to guarantee a basic program, the present system could continue with modifications and adjustments to bring the system in line with defined purposes. Changes could be made in the balance between the money allocated through Foundation Aid, the flat grant, and that allocated through Equalization Aid. Allocations should be based on the purposes for general state aid. Incentive Aid could be redefined to fit current state objectives. Student weightings in the formula could be reconstructed to be more consistent with current state policies and goals.

A percentage-equalizing or guaranteed yield type of allocation system could be adopted. These power equalizing mechanisms require the state to guarantee support for locally determined budgets. Limits can be installed to control the state's obligations (Johns, Morphet, and Alexander, 1983; Jones, 1985).

Additional measures of local tax capacity could be used to qualify for state funds. The measure of ability to pay local taxes for schools might be more accurate if other economic measures, such as per capita income or per capita retail sales, were included in the allocation equation.

The need factor in any allocation system might be expanded to include weighting of handicapped students, vocational education students, and other students who require special resources. The state should decide if it wants to pursue a policy of funding selected programs categorically, or if it wants to include all programs in a general aid formula and use a weighted student or classroom unit approach.

A nontraditional allocation method could be developed based on the policies and circumstances unique to Nebraska, such as the system developed by Hudson (1986). Full state funding, such as that used in Hawaii and California, state vouchers, and other radical changes in the allocation of state funds are also alternatives, but we see little evidence that they would be considered seriously in Nebraska at this time.

Nebraskans face many important policy decisions concerning financing public education, none of which will be easy. But the evidence suggests substantial returns on investments in education to individuals and to society. Indeed, failure to invest in education has been identified as the major cause, after land, capital, and labor have been equated, of differences among economic levels in

the United States and in nonindustrialized nations. Nebraskans should consider seriously the risks of underinvestment in this vital area.

Endnotes

1. All revenue estimates, unless otherwise noted, were obtained from the annual report of the Nebraska Department of Education, "1985-86 Statewide Totals." Unless otherwise noted, references to the school year and the fiscal year mean the budget period from September 1 to August 31. Tax years coincide with the calendar year and run from January 1 through December 31.
2. Distribution of money in the state general aid formula was obtained from Nebraska Department of Education data.
3. Enrollment and school district data were obtained from "Fact Sheet 1: Statistics and Facts about Nebraska Schools, 1986-87 School Year," Nebraska Department of Education.
4. Nebraska Department of Education data.
5. The 16 counties are Adams, Box Butte, Buffalo, Dakota, Dawson, Dodge, Douglas, Hall, Keith, Lancaster, Lincoln, Madison, Platte, Sarpy, Scotts Bluff, and Washington.
6. Nebraska Department of Revenue, Research Division, "1986 Average Property Tax Rate"; Nebraska Department of Education, Management Information Services, *Statistics and Facts about Nebraska Schools 1985-86*.
7. Calculated from data compiled for the *Annual Report* of the Nebraska Department of Revenue, 1985.
8. Nebraska Department of Education, Management Information Services, "Ranking of Class I-V Districts by Total Levy as Reported on 1985-86 State Aid Supplements."
9. Ibid.
10. Nebraska Department of Revenue, Property Tax Division, "Assessment/Sales Ratios for Assessment Year of 1986."
11. Nebraska Department of Education, Finance Section, "Financial Report of Public Schools Districts: Class II-V and Class I Districts Combined Totals by County, School Year 1985-86."

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The Macroeconomics of Nebraska's Competitiveness in World Agricultural Markets

5

Frank Zahn

Nebraska faces a cyclical and a secular decline in its competitiveness in world agricultural markets. Economic instability and technological advances account for much of the decline, along with unfair trade practices and counterproductive government intervention. The short-term forecasts for the U.S. economy are fairly bright, but the farm economy, particularly in Nebraska, is gloomy. Because it is unlikely that government price and income supports will continue at current levels, Nebraska must take some bold steps to provide a healthier farm sector. Policy choices for state action include supporting federal policies that promote domestic and international economic stability, fair international trade, and the elimination of farm income supplements based on production; funding for research to determine Nebraska's areas of comparative advantage in farm products; implementing programs that expedite reallocation of resources to their most productive uses; and developing a state marketing strategy for each traded product that improves Nebraska's share in world markets.

Until a little over a decade ago, Nebraska's farmers thought they were insulated from the forces that shape the overall or macroeconomy. In the 1970s, it became clear that they were not insulated, and the connections, at first, seemed to be all for the good. Large quantities of Nebraska's farm products were being sold abroad, and farm incomes soared.

Now, the euphoria has passed and the boom of the 1970s is viewed as a short-lived cyclical upturn, rather than a sustainable acceleration in the growth of the farm economy. The upturn was followed by a cyclical downturn in the 1980s. The cyclical downturn, along with an underlying long-term or secular decline in the demand for Nebraska's farm exports, has created serious problems for farmers. Nebraskans recognized more clearly than ever before that the state's farm sector, which is a significant component of the country's farm sector, is quite sensitive to changes in the overall or

macroeconomic environment. As a result, the influence of U.S. macroeconomic policy must be carefully considered when analyzing the problems facing Nebraska's farmers.

Farming in Nebraska is linked to the U.S. farm sector, the U.S. macroeconomy, and the world economy. Growth in international trade since World War II and the emergence of well-developed international credit markets means that farming in Nebraska, along with the whole U.S. economy, is an integral part of the world economy. Moreover, now that the value of the U.S. dollar is allowed to fluctuate in international currency markets, Nebraska's farmers are exposed more than ever to the uncertainties of changes in international economic conditions.

The current worldwide glut of farm products has a negative effect on all U.S. farm exports. Nebraska's economy is influenced more than other states because it is more dependent on export markets. Part of the glut is due to the expansion of farm production during the 1970s. Much of the glut, however, is due to long-term or secular forces, particularly technological advances in agriculture. Both cyclical and secular factors have increased dramatically the quantity and quality of competitors that Nebraska's farmers must face in world markets.

In this chapter, the macroeconomic forces that allow Nebraska's farmers to compete in world markets are discussed, and an assessment of their future prospects is presented. First, the scope and meaning of competitiveness in world markets is discussed. Then, the principal way by which U.S. macroeconomic policy influences the competitiveness of farmers on the supply and demand sides of world agricultural markets is explained. Next, the role of U.S. macroeconomic policy in the cyclical instability of the 1970s and 1980s is

assessed. The factors that influenced the secular decline in competitiveness and the outlook for the U.S. economy into the 1990s are discussed also. Finally, several important guidelines for economic policy and policy initiatives that can help improve the competitiveness of Nebraska's farmers in world markets are discussed.

Competitiveness in World Markets

Conventional wisdom tells us that a country can benefit from making the products that it can produce more cheaply than other countries and trading them for products that other countries can produce more cheaply. Stated differently, if each country does what it does better than other countries and trades for what others do better, each country gets what it wants at the lowest unit cost possible. This is the principle of comparative advantage.

Trade based on the principle of comparative advantage provides the most output of goods and services possible for each country, given its scarce supplies of labor, capital, and other resources. Natural resources, large domestic markets (which make it possible to realize economies of scale), human capital resources, and technological advances (the most important factor) have aided comparative advantage in the United States.

Although technological advances may provide a country with comparative advantage for awhile, other countries soon learn to use the technology and the country loses its comparative advantage. Classic examples include Britain's loss of comparative advantage in textile production to Japan, the United States, and Western Europe during the 19th century. And, these countries are now losing comparative advantage to countries in Asia and Africa where labor is cheaper and more abundant.

The United States has gained and lost comparative advantage in one product after another, including automobiles, textiles, steel, heavy electrical generating equipment, and transistors. Despite losses, the United States remains in the forefront of world trade. One reason for this is that the United States continues to adapt to changes in world trade conditions. Today, the United States is gaining in international trade of jet aircraft, computers, and other recently developed products. Although comparative advantage, once lost, can be reclaimed by reducing unit costs, in a dynamic world, countries (as well as states or regions within countries) may lose comparative advantage permanently.

U.S. farmers probably still have a comparative advantage in some agricultural products (corn, wheat, and soybeans). U.S. exports of agricultural products jumped sixfold from 1970 (\$7.3 billion) to 1981 (\$43.3 billion). Nebraska shared in this growth. By 1981, 30 percent of Nebraska's farm output was exported to other states and countries. Moreover, Nebraska's significance in total U.S. farm output expanded relative to other states. In 1981, it ranked fifth among the states in cash sales (U.S. Department of Agriculture, 1985).

However, since 1981, U.S. farm exports have fallen sharply, down 25 percent in 1985 from the peak of 1981, and down another 12 percent in 1986. (These estimates by the U.S. Department of Agriculture (1985) are preliminary.) Nebraska has been one of the hardest hit states. These sharp declines suggest a loss of comparative advantage or that comparative advantage alone does not explain how much farmers are able to sell in world markets.

A country has a competitive advantage, or is competitive, if it can sell its products in world markets. Comparative advantage, or comparatively lower costs of

production, is an important factor influencing a country's competitive advantage. However, other factors influence it as well (Hushak, 1987).

Factors such as market imperfections and macroeconomic policy can override cost considerations in markets, making it possible for a country to enjoy competitive advantage in product markets, that is, making it possible to sell the products it produces, regardless of comparative advantage. Guided by desires, such as self-sufficiency, preservation of the family (small scale) farm, and nationalism, countries formulate and implement policies in an attempt to improve their competitive advantage, even though they do not have a comparative advantage.

Some countries provide government subsidies and price support to keep high-cost producers in business, others restrict imports with tariffs and quotas, while others attempt to lower the value of their currency to make their exports more attractive in world markets. In these cases, gains in competitive advantage are generally short lived. Countries respond by formulating policies that minimize the effects of another country's efforts to manipulate competitive advantage, or they retaliate against these unfair trade practices.

Although comparative advantage remains the ideal basis for trade, it is only one factor that must be considered in a comprehensive analysis of the competitive advantage or competitiveness of farmers. Other factors also influence the willingness and ability of farmers to produce and sell their products. Cost or supply side considerations determine a farmer's willingness to produce and offer farm products for sale, while spending or demand side considerations determine a farmer's ability to sell. Both supply side and demand side considerations are important in understanding the

competitiveness of Nebraska's farmers in world agricultural markets.

Macroeconomic Policy

U.S. macroeconomic policy influences the supply and demand sides of agricultural markets and, thereby, the competitiveness of all U.S. farmers, including those in Nebraska (Gardner, 1981). Two basic types of macroeconomic policy exist: Monetary policy and fiscal policy. Monetary policy changes the rate of growth of money available for spending in the economy. It is controlled mainly by the Board of Governors of the Federal Reserve System in Washington, DC. Fiscal policy alters total spending directly by changing the rate of growth of government spending in the economy or indirectly by changing the rate of growth of after-tax income available to consumers and businesses. It is controlled mainly by the U.S. Congress and the President. The primary domestic objective of these policies is to maintain total spending in the economy, which ensures full employment without adding to inflation.

Even with the best of intentions, macroeconomic policies are often inappropriate, and spending grows either too little or too much. When total spending in the economy grows less than the nation's output of goods and services, inventories pile up, the inflation rate falls, and the economy experiences recession. Also, less spending reduces the demand for credit and nominal interest rates (those quoted in financial markets) fall. But, when total spending grows more than the nation's output of goods and services, the inflation rate rises and the economy recovers. At close to full employment, if the gap between the rates of growth of total spending and total output widens, the economy may experience a rising

inflation rate and negligible growth in output of goods and services. Additional spending also increases the demand for credit, and nominal interest rates rise.

Because macroeconomic policies influence nominal interest rates and the inflation rate, they also affect the difference between them, namely real (inflation-adjusted) interest rates:

$$\text{Real Interest Rates} = \text{Nominal Interest Rates} - \text{The Inflation Rate}$$

Table 1 shows the influences of U.S. monetary and fiscal policies on the inflation rate, nominal interest rates, and real interest rates. To finance an increase in spending or a decrease in taxes, the federal government must borrow money in financial markets. This increased demand for credit places upward pressure on nominal interest rates. When the federal government spends what it borrows or when taxpayers spend their additional after-tax income on goods and services, upward pressure is placed on the inflation rate. Higher nominal interest rates raise real interest rates, while a higher inflation rate reduces real interest rates. The influences tend to

Table 1 - Direction of impact of U.S. macroeconomic policies on interest rates and inflation

Item	Fiscal policy	Monetary policy
Nominal interest rates	↑	↓
Minus		
Inflation rate	↑	↑
Equals		
Real interest rates	↑ (?)	↓

be offsetting and the net effect is ambiguous. It depends on which of the two, the interest rate effect or the inflation rate effect, dominates. Given that the quantity of money in the economy does not change, it is likely that the interest rate effect dominates, and expansionary fiscal policy raises real interest rates. Of course, the effects of contractionary fiscal policy, that is, less government spending or increased taxes, produces the opposite result.

When the Board of Governors of the Federal Reserve System, the nation's monetary authority, increases the quantity of money in the economy, downward pressure is placed on nominal interest rates. More of any asset in the economy generally implies that the price for its use falls. As the new money is spent on goods and services, upward pressure is placed on the inflation rate. Expansionary monetary policy lowers nominal interest rates and raises the inflation rate, and each of these changes reduces real interest rates. Of course, contractionary monetary policy, which reduces the nation's money supply, produces the opposite effect.

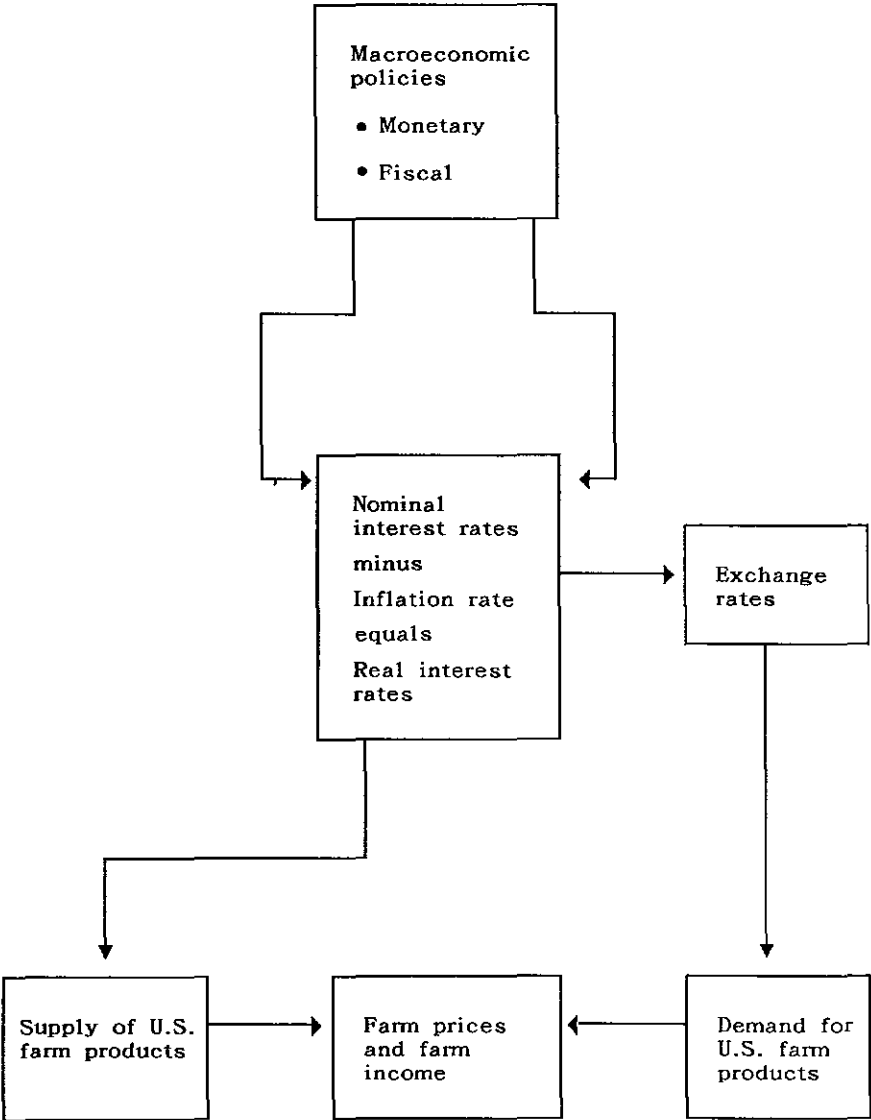
The Link with Interest Rates

Real interest rates transmit changes in macro-economic policy to the supply and demand sides of the U.S. agricultural markets (figure 1). Real interest rates influence the supply of farm products directly by changing costs of production and the demand for farm products by changing exchange rates. In turn, the supply of and demand for farm products determine farm prices and sales or earned income.

A flexible exchange rate system allows changes in real interest rates to affect the demand for farm products (Hakkio, 1986). When real interest rates in the

Figure 1

An Interest Rate Transmission Mechanism for Macroeconomic Policy



United States change relative to those in other countries, they affect exchange rates and export demand. For example, when real interest rates in the United States increase, U.S. financial assets become relatively more profitable than those of other countries. People in other countries then demand more U.S. dollars to buy more U.S. financial assets. In turn, the increased demand for U.S. dollars raises the value of the dollar relative to other currencies in international currency markets. However, a more expensive dollar reduces foreign demand for U.S. products, including farm products (U.S. exports), and increases domestic demand for foreign products (U.S. imports). Hence, higher real interest rates lead to a higher exchange value for the U.S. dollar, and U.S. farm products become more expensive or less competitive in world markets.

Changes in real interest rates affect the supply of farm products by changing costs of production. An increase in interest rates, for example, raises the cost of credit to finance purchases of new capital; to carry inventories; to finance purchases of inputs, such as feeder livestock, seeds, fuel, and fertilizer; and to service variable-interest debt. Just as higher real interest rates increase the value of the dollar and make U.S. farm products less competitive through the demand side of world markets, they increase production costs and make farm products more expensive or less competitive through the supply side of world markets.

Changes in the supply of and demand for U.S. farm products, brought on by policies that influence real interest rates, alter U.S. farm prices. Moreover, because farm prices are more flexible than other prices, they adjust more quickly to economic change. Consequently, when monetary and fiscal policies either stimulate or reduce total spending in the economy, farm prices change

more quickly than other prices at home and abroad (Frankel, 1984). In free markets, this means that when farm prices rise, farmers produce more than they will be able to sell in world markets when prices again stabilize. Conversely, when prices fall, farmers produce less than they will be able to sell in world markets when prices again stabilize. This overshooting of farm prices lends credibility to the argument that formulation of U.S. macroeconomic policy should take into account the disproportionate effects of policy on the farm sector in the short-term.

Cyclical Rise and Decline in Competitiveness

The markets for farm products were relatively stable during the 1950s and the 1960s. U.S. government regulation of credit markets and macroeconomic policy promoted relatively low and stable real interest rates which stabilized costs of production on the supply side of agricultural markets. Moreover, U.S. monetary policy maintained fixed exchange rates on the U.S. dollar so that, along with an income-insensitive domestic demand for farm products, there was stable growth in the demand for farm products. Beyond the underlying stability created by a relatively stable macroeconomic environment, government price supports ensured that prices of farm products would not fall to unreasonable levels in case of unexpected changes in either the demand or supply sides of agricultural markets.

The stability of the 1950s and early 1960s soon gave way to the boom and bust years of the 1970s and 1980s. Clearly, changes in macroeconomic policy during this period had an important influence on real interest rates, which seriously impaired the competitiveness of U.S. producers, including Nebraska farmers, in world

markets. The effect of changes in the mix of monetary and fiscal policies on variables critical to the competitiveness of farmers during the 1970s and 1980s is summarized in table 2.

Beginning in the mid-1960s, total spending in the economy grew relative to the nation's output of goods and services. There was rapid growth in private sector spending, as well as government spending. More and more government spending was directed toward winning the Vietnam War and solving the country's social problems. This growth in spending was supported by the Federal Reserve pumping more money into the economy. The easy fiscal policy, combined with the easy monetary policy in the late 1960s and 1970s showed that when the desire to spend grows relative to the ability to produce the inflation rate rises.

Table 2 - The direction and impact of U.S. macroeconomic policy on real interest rates for several time periods

Item	Early 1970s ¹	Late 1970s to early 1980s ²	Since 1985 ³
Nominal interest rates	(Small) ↑	(Large) ↑	↓
Minus			
Inflation rate	(Large) ↑	(Large) ↓	↔
Equals			
Real interest rates	↓	↑	↓
Exchange rates ⁴	↓	↑	↓

¹This period was characterized by easy fiscal policies and easy monetary policies.

²This period was characterized by easy fiscal policies and tight monetary policies.

³This period was characterized by tighter fiscal policies and easier monetary policies.

⁴Foreign currency price of U.S. dollars.

Other factors also helped to increase prices of farm products. In the early 1970s, several short crops overseas drove down world stocks of farm products. Moreover, income growth in developing (Third World) countries increased the demand for food. These factors dramatically increased U.S. farm export demand, and prices of farm products soared.

In the 1970s, nominal interest rates did not adjust sufficiently to offset the rising inflation rate. As a result, real interest rates fell (figure 2). With low and even negative actual real interest rates in the United States, the demand for higher yielding foreign assets increased. The shift from U.S. dollars to other currencies put downward pressure on the exchange value of the dollar in international currency markets. The

FIGURE 2
Real Prime Interest Rate, United States, 1970-86

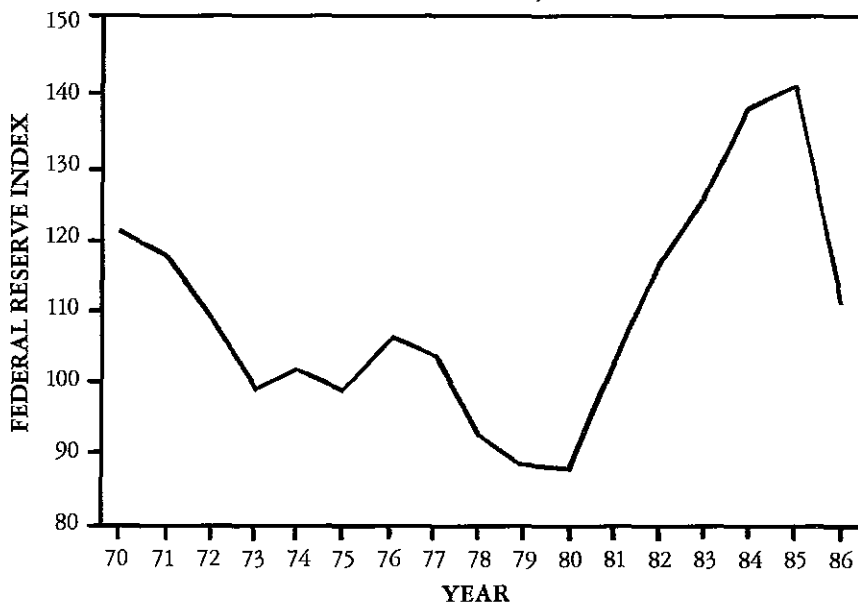


Source: Wharton Econometrics data base.

pressure was so substantial that the United States abandoned the fixed exchange rate system and let the dollar float against other currencies. As a result, the value of the dollar declined substantially during the 1970s (figure 3). This action ushered in the flexible exchange rate system which evolved in the mid-1970s. The system was expected to permit internal macroeconomic policy independent of fluctuations in the exchange rate. On the downside, however, flexible exchange rates provided the vehicle whereby U.S. producers, including farmers, were exposed to the uncertainties of changes in world market conditions.

As the value of the dollar fell during the 1970s, the purchasing power of foreign currencies rose and other countries demanded more U.S. products, including Nebraska farm products. Abundant credit, available at

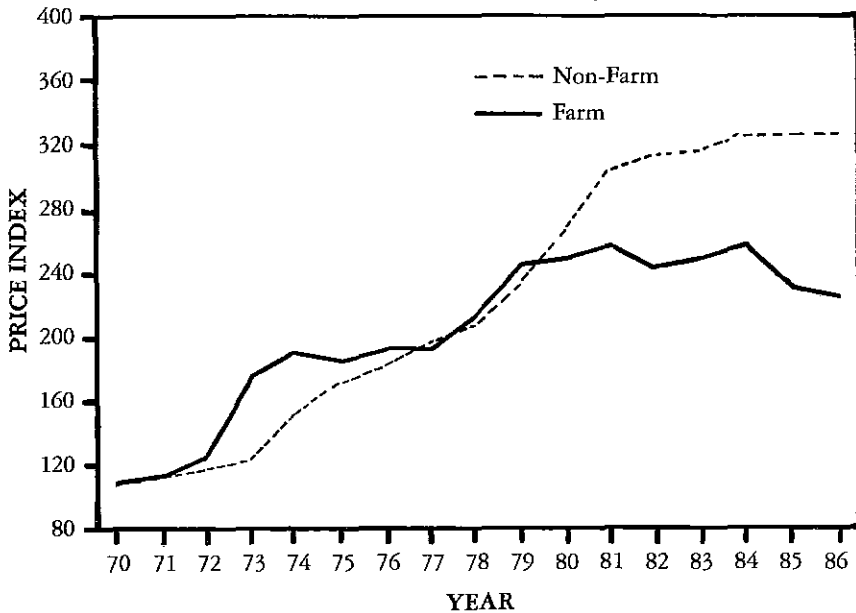
FIGURE 3
Federal Reserve Trade Weighted Exchange Rate
for the U.S. Dollar, 1970-86



Source: Wharton Econometrics data base.

low real interest rates, promoted growth in exports to Third World countries as well. The increase in farm export demand resulted in upward pressure on farm prices, and farmers responded with substantial increases in farm production. In fact, prices of farm products increased relatively more than prices of other products during most of the 1970s, that is, the terms of trade between farmers and other domestic producers in the economy changed in favor of the farmer (figure 4). The increased demand for farm products and the general increase in demand for real assets, which serve as hedges against inflation, increased the demand for farm assets, particularly farmland. Rising farm equity served as collateral for additional credit, which farmers used to finance capital investment and increase production.

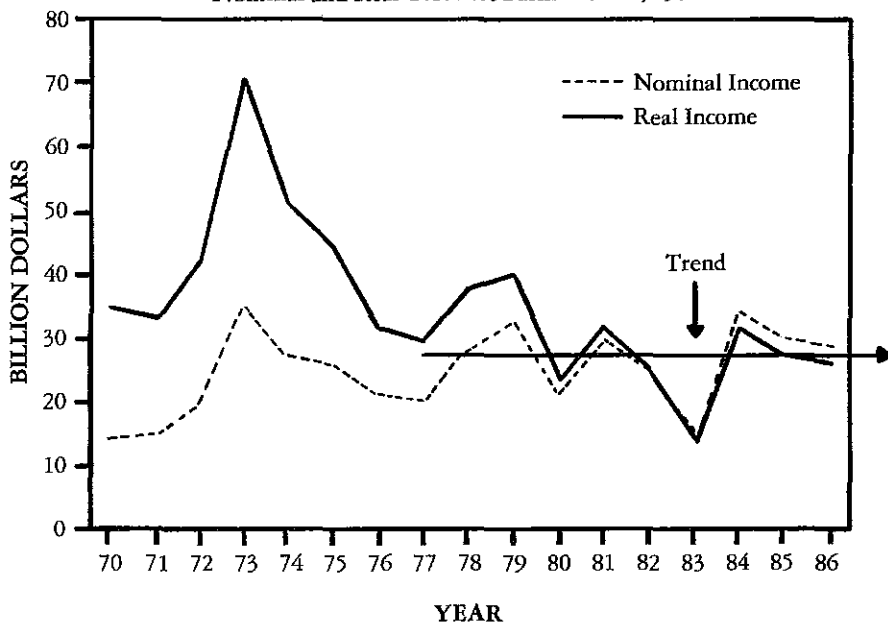
FIGURE 4
U.S. Farm and Non-Farm Prices, 1970-86



Source: Wharton Econometrics data base.

The increased demand for farm products in the early 1970s brought prosperity to the agricultural sector, but prosperity soon gave way to despair for many farmers in the 1980s. Although the trend of nominal net farm income, including government payments, has been relatively flat since the late 1970s (figure 5), its dramatic increase between 1970 and 1973 set off a period of farmland speculation. Rising land prices during the 1970s and rising interest rates during the late 1970s and early 1980s meant that farmers needed more cash to meet their financial obligations. The growth in farm debt, particularly debt on farmland, and the failure of net cash income to grow as it had during the early 1970s strained the ability of some farmers to service their debt and continue operating.

FIGURE 5
Nominal and Real U.S. Net Farm Income, 1970-86



Source: Wharton Econometrics data base.

The prosperity of the 1960s and the early 1970s in the United States was the result of easy fiscal and monetary policies. Substantial growth in total spending relative to total production resulted in double digit inflation. The United States was on a spending spree. "Spend to Prosperity" was one of the slogans of the times.

Although easy fiscal policy continued into the late 1970s, the Federal Reserve initiated a major change in monetary policy to curb inflation. The Federal Reserve brought growth in spending in line with growth in the economy's output by reducing growth in the money supply. As a result, in the early 1980s the inflation rate fell and real interest rates rose (figure 2). In turn, higher real interest rates increased the value of the U.S. dollar (figure 3).

The more expensive U.S. dollar reduced export demand. In addition, rising interest rates increased the debt service payments of Third World countries, the principal growth markets for farm exports. Therefore, export demand declined further. The decline in export demand reduced farm prices, and, once again, farm prices in the 1980s were more responsive than other prices to changes in macroeconomic policy, this time on the downside, that is, the terms of trade turned against the farmer (figure 4).

Farmers lost more than other domestic producers as a result of the correction for inflation. In free markets, prices and quantities supplied would have decreased enough to balance supplies and demands for farm products. However, government price supports prevented much of the adjustment in the 1980s. The result has been overproduction of farm products.

Because of the decline in inflation during the early 1980s, the Federal Reserve has eased monetary policy

since 1985. Monetary ease and tighter fiscal policy, influenced by the spirit, if not the letter, of the Gramm, Rudman, Hollings Bill, have reduced real interest rates (figure 2) and the value of the dollar (figure 3).

The drop in the value of the dollar, measured by the Federal Reserve's general trade weighted index, has increased U.S. export demand. However, a rapid expansion in the export demand for farm products is not expected. A long lag is a contributing factor, but more importantly, currencies of major U.S. competitors in world agricultural markets (for example, Canada, Argentina, and Australia) have depreciated further against the dollar, making these countries more competitive in world markets. In addition, Third World countries, the segment of the world food market with the most potential for growth, remain bogged down with debt repayment problems. So, these countries will not be able to substantially increase purchases of U.S. farm products in the near future. Moreover, long-term or secular forces (discussed in the next section) are working to reduce the growth in U.S. export demand for farm products.

On the supply side of agricultural markets, U.S. farm output continues to increase as farmers continue to respond to government program incentives rather than market signals. Farmers receive government support payment based on their production. The more you produce, the more you get. As a result, overproduction persists.

Ample farm stocks have led to declining farm prices (figure 4) and decreases in net farm income (excluding government payments) in both nominal and real terms. Government payments have continued, however, to maintain the trend in nominal net farm income (including government payments) since the late 1970s (figure 5).

Government payments to farmers accounted for 42 percent of total U.S. net income during 1986. Payments to Nebraska's farmers accounted for about 56 percent of Nebraska's net farm income (U.S. Department of Agriculture, 1985).

Secular Decline in Competitiveness

Growth in productivity implies lower costs of production, which permits gains in competitiveness through gains in comparative advantage. Growth in U.S. agricultural productivity during the 19th century was based on bringing fertile land into production and favorable climatic conditions. These factors are still important, but they account for only part of the spectacular growth in agricultural productivity. While farm output has tripled, labor requirements have fallen by 80 percent and land area in production has changed very little (Nebraska Department of Economic Development, 1987). The principal sources of growth in productivity have been technological advances, education, and capital investment. Biotechnology may ultimately add more to farming productivity than any other development. It has the potential for increasing productivity at rates that are higher than those of the past two centuries (Avery, 1985).

Recently, however, several factors have contributed to a secular or long-term decline in the U.S. farmer's competitiveness in world markets. The most important factor is the worldwide increase in productivity. Shortages of cropland, water erosion, and high oil prices are no longer insurmountable obstacles to countries seeking to develop their farm sectors. The worldwide adoption of technological advances, education, and capital investment increased farm output by 25 percent between

1972 and 1982. In Third World countries, farm output rose 33 percent, compared with 18 percent in developed countries where farm surpluses persist (Hushak, 1987). U.S. farmers now face stiff competition from foreign producers who have made gains in competitive advantage through lower costs of production.

Government subsidies of foreign farm sectors have diminished the U.S. farmer's competitiveness also. For years the United States exported far more than it imported. In the 1970s, the U.S. farm sector was the principal contributor to the U.S. trade surplus. Although about 30 percent of the country's farm output is still sold abroad, the United States had an agricultural trade deficit last year for several months. Foreign producers, particularly countries of the European Economic Community (especially Great Britain and France) gained competitive advantage with farm export subsidies. These subsidies permitted them to become net exporters rather than net importers of grain. This policy reduces the competitiveness of U.S. farmers in world markets and has spawned protectionist trade sentiments in the United States.

Another factor that diminishes the ability of farmers to sell their products is the decline in population growth. Despite the fact that Third World countries, comprising 75 percent of the world's population, have yet to enter the high-demand phase for farm products, the decline in the rates of population growth in the United States and worldwide has reduced the potential growth in demand for food (Nebraska Department of Economic Development, 1987). Both of these rates peaked in the 1960s. Moreover, as incomes increase worldwide, the percentage of income spent on food declines and reduces the growth in demand for farm products.

Still another factor that diminishes the competitiveness of U.S. farmers is the drive for self-sufficiency. Distrust drives importing countries to become self-sufficient, particularly in food production. And, recent actions by the United States have encouraged countries to become self-sufficient, regardless of the comparative advantage. As explained earlier, macroeconomic policy induced instability in the U.S. economy during the late 1970s and early 1980s inflated the value of the dollar. The increase was so dramatic that it signaled foreign buyers that U.S. farm products may not always be available at reasonable prices. Rather than be vulnerable to changes in the economic policies of the United States and other exporting countries, importing countries have been encouraged to become self-sufficient in agriculture.

Further, the United States has shown that it will not sell food to countries with whom it disagrees politically. The most recent example is the embargo on grain sales to Russia in 1980. The messages conveyed by this action were that the United States is an unreliable supplier and that political and economic freedom require self-sufficiency.

Finally, protectionist trade policies inhibit growth in farm export demand. When foreigners initiate such policies, U.S. farm products become relatively more expensive, and when the United States initiates such policies, foreigners tend to retaliate with protectionist policies of their own. Protectionism prevents gains in trade and further encourages self-sufficiency.

Because of increased productivity and little growth in world demand, market prices of U.S. farm products may fall so much that many farmers will not be able to continue farming. In fact, this has happened. Overproduction of farm products in the United States,

created by government price supports set above market prices, will persist under current U.S. farm policy. As these supports are reduced, farmers with higher unit costs will have to reduce these costs or go out of business.

In the 1920s, there were 130,000 farms and ranches in Nebraska. Through consolidation, induced by increased productivity, the number is presently 58,000 (U.S. Department of Agriculture, 1985). Genetic engineering and other scientific advantages will continue to increase farm output, and thereby reduce the resources needed to produce farm output. By the year 2000, half of Nebraska's current productive capacity is expected to be superfluous (Nebraska Department of Economic Development, 1987).

Current Outlook for the Macroeconomic Environment

Nebraska's farm sector is strongly influenced by changes in its macroeconomic environment. U.S. macroeconomic policy changes that environment. Therefore, the current stance and direction of U.S. policy is important in addressing Nebraska's farm problems.

The current objective of U.S. macroeconomic policy is expected to continue. Monetary and fiscal policy will be coordinated to promote economic growth while maintaining macroeconomic stability. That is, policy will be used to promote secular or long-term growth while minimizing cyclical activity around the long-term growth path of the economy.

U.S. monetary policy will be used to provide sufficient spending power to accommodate gains in productivity on the supply side of the economy. Monetary restraint will be used to hold down inflation and stabilize nominal interest rates. In the spirit of the Gramm-

Rudman-Hollings Bill, fiscal policy will be geared toward reduction of the federal budget deficit, and thereby, help to hold down nominal interest rates.

Farm policy is moving slowly in the direction of reducing price supports of farm products and letting markets again provide accurate signals about what to produce, who should produce it, and how much to produce. Considerable discussion continues in an effort to change the basis for current farm support payments. Basing support on the amount produced encourages overproduction, which is a principal part of the current farm problem.

Although the United States continues to flirt with protectionism, international trade policy is likely to continue to promote free trade, that is, trade based on the comparative advantage criterion. Japan's reluctance to open its markets to U.S. products and the European Economic Community's dumping of government subsidized farm products are major targets of U.S. trade policy. Also, efforts will continue to get other countries to stimulate their growth so they can buy more U.S. exports. In addition, U.S. trade policy will continue to be geared toward international cooperation to stabilize exchange rates. Thus, they will reflect changes in relative growth of productivity (or comparative costs) between countries and not the relative abilities of countries to manipulate exchange rates to their competitive advantage through unfair practices. Hopefully, the 1970s and 1980s have taught us that exchange rate stability is important in developing and maintaining sustained growth in export markets.

Based on current macroeconomic policy, the short-term outlook for U.S. agriculture is healthier than it has been for some time. Stability is the principal policy objective, with emphasis on short-term stability (to

minimize the severity of cyclical swings) and sustainable secular growth. Given the current direction of macroeconomic policy, government and private forecasts predict that the United States will experience modest, but steady and sustained, growth in output into the 1990s. The Congressional Budget Office expects real gross national product (GNP) to grow between 2.5 and 3.0 percent per year through 1992 (Congressional Budget Office, 1987). The major source of economic growth, other than increases in private sector consumption, is expected to be an increase in net exports (exports less imports). Exports are expected to rise and imports fall. Although unemployment is expected to fall from 7 percent in 1986, to about 6 percent by 1992, real interest rates are expected to fall as nominal rates decline slightly (long-term rates more than short-term rates). The inflation rate is expected to increase from 1.9 percent in 1986, to about 4.3 percent by 1992, and lower real interest rates are expected to reduce further (although not dramatically) the value of the U.S. dollar.

Lower real interest rates will improve supply and demand conditions in agricultural markets for U.S. farmers. But, the overall outlook for U.S. farmers, particularly those in Nebraska, is not very bright. Federal government support at current levels is unlikely and, at best, unreliable. Although the debt problem is being solved through repayment, restructuring, and bankruptcy, as stated earlier, Nebraska will probably have to reduce resources in agriculture because of worldwide overproduction.

Policy Choices

Nebraska farmers, like others associated with U.S. agriculture, react mostly to changes in domestic and

international markets. They cannot control these changes, but they can attempt to influence policy initiatives by the federal government. Recent events and the current economic outlook suggest several choices for Nebraska's support of federal government policy.

State Support for Federal Policies

First, Nebraska can support policies that promote fair trade. When trade is fair, competitiveness is determined solely on the basis of comparative advantage. The lower Nebraska's farmers can get their costs through increased productivity, the more competitive they will become. Unfair trade occurs when U.S. or foreign farmers gain a competitive advantage in world markets through means other than decreases in comparative costs (for example, government subsidies, price supports, or favorable macroeconomic policies). These factors distort exchange rates and obscure relative costs of production and exchange between trading partners. Lowering production costs and adopting international trade policies that are designed to neutralize, if not eliminate, unfair trade practices are necessary for sustaining competitiveness in world markets.

Second, Nebraska can support macroeconomic policies that promote and maintain a stable domestic and international environment for production and exchange. Stability reduces the uncertainty associated with various types of production, such as agriculture, in which there are substantial lags between beginning and finishing production and exchange. The boom and bust years of the 1970s and 1980s are a classic example of macroeconomic policy-induced instability. First low, then high, and then low real interest rates and exchange rates contributed to the serious problems of farmers with debt and

overproduction. Policy designed to reduce cyclical instability provides a more certain and less costly environment for farm management.

Third, Nebraska can support efforts of the Federal Reserve Board and the federal government to promote international cooperation for maintaining a stable international environment. Along with exchange rate stability, it is important for U.S. trading partners to stimulate their economies so that they can buy more U.S. farm products. Recently, the United States made some progress in this area. Trading partners have pledged to stimulate their economies if the United States will hold down real interest rates by reducing the federal deficit.

Another issue of concern is the Third World's debt problem. Unfortunately, another casualty of the 1970s and 1980s cycle was the Third World market for U.S. farm products. These countries borrowed heavily to expand their economies and now they use many of their U.S. dollars to service debts rather than to buy U.S. products. Further debt restructuring through international cooperation could substantially improve export demand for U.S. farm products.

Fourth, farm policy must be restructured. Nebraska can support Congress in efforts to phase out farm price supports. Current price supports reduce the competitiveness of U.S. farmers in world markets and encourage overproduction. The heart of the problem with overproduction is that price supports keep relatively high-cost farmers in business. This means that high-cost farmers gain at the expense of their lower cost competitors. Of course, it is the taxpayers and consumers who pay for all this. Government payments may be warranted while phasing out expensive and counterproductive price supports. But, the humanitarian

policy of providing government support for farmers need not encourage overproduction.

In addition to supporting the federal government policies suggested above, Nebraska can take some direct steps to improve its ability to compete.

State Policies to Support Agricultural Competitiveness

First, Nebraska can support and conduct research to evaluate its areas of actual and potential comparative advantage. No adequate study has been conducted to determine the products for which the United States has a comparative advantage. No such study has been undertaken at the state level either. In a world which is becoming increasingly global and market sensitive, more research is essential.

Second, Nebraska can adapt more quickly to larger scale farm production. Increased productivity (which decreases unit costs) through large-scale production is a worldwide reality and no amount of state legislation, such as Nebraska's Initiative 300, is going to help small-scale farmers survive in world markets. Initiative 300 continues to inhibit Nebraska's efforts to regain its competitive edge in world agricultural markets.

Third, identifying the products in which Nebraska's farmers enjoy a comparative advantage and moving to large-scale production is unlikely to justify retaining current resources in farm production. As mentioned earlier, it is expected that Nebraska will have to reduce the amount of land in agriculture by about half during this century. This is expected to help Nebraska catch up with the deagriculturalization of its economy. This process has been occurring nationally, and to a lesser extent in the state, for the past 100 years. Of course, deagriculturalization must be accompanied by efforts to

develop new sources of income. Furthermore, the adjustment from farm to nonfarm employment will require additional policy initiatives at the state level.

Fourth, Nebraska can initiate measures at the state level (and cooperate at the national level) and thus provide a better marketing strategy for its farm products in world markets. Efforts must be made at the commodity level with buyers in specific countries where it is likely that state officials would be more effective negotiators. Clearly, in an increasingly competitive world the ability of Nebraska's farmers to recapture and expand domestic and international markets will depend on how aggressively the markets are pursued. In order to survive, Nebraska's farmers must become more entrepreneurial in the production and marketing of their products.

Conclusions

Nebraska's farm problem is both cyclical and secular. The macroeconomic policy of the 1970s and 1980s caused a cyclical decline in the competitiveness of farmers in world agricultural markets. Since the early 1980s, the United States has pursued a general policy of restoring macroeconomic stability. Recovery from the cyclical downturn in agriculture is not expected to restore sales of farm products to their peak levels of the 1970s and 1980s. Clearly, preoccupation with cyclical activity has obscured the underlying secular problem of the farm sector.

Substantial increases in productivity, due primarily to technological advances and modest growth in demand, mean lower farm prices and the withdrawal of resources from production. However, government price supports and other forms of protectionism have resulted

in the overproduction of farm products. In the absence of trade based on comparative advantage, the world has no way of determining how much food to produce and who should produce it so that resources are not wasted.

Government price supports obscure accurate market information about possible gains in trade for farmers, and taxpayers are often forced to buy with their tax dollars what they refused to buy as consumers. This state of affairs makes no economic sense. The policy choices presented above may contribute to providing a more rational approach to addressing the problems of agriculture.

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Groundwater Quality and Policy Options in Nebraska

6

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Potential contaminants and the occurrence of groundwater contamination in Nebraska are discussed. An overview of Nebraska's policy response to groundwater quality reveals that the policy has been fragmentary and generally reactive. Although a comprehensive groundwater quality protection strategy is needed if the groundwater is to be protected from potential point and nonpoint sources of contamination, it must recognize the site-specific nature of most groundwater contamination. The Nebraska Chemigation Act and the Petroleum Products and Hazardous Substances Storage and Handling Act passed in 1986 were the first comprehensive legislation addressing prevention of point source contamination. Proactive policies for the prevention of nonpoint groundwater contamination are an economic necessity in today's political climate.

Groundwater quality has progressed from a little known concept in the 1960s and 1970s to a household term in the 1980s. The presence of trace levels of certain inorganic and organic chemicals in groundwater and their potentially harmful health effects have ignited the public's interest in the quality of drinking water. This concern has been fueled by the media, as evidenced by the many television, radio, and newspaper presentations with themes about the degradation of groundwater quality.

Coupled with mounting concern about the quality of groundwater are rapid advances in analytical techniques, which have detected compounds previously unknown in groundwater and made their analysis routine. Many substances can be measured in part per trillion and even part per quadrillion (1/1,000,000,000,000,000). Mounting nationwide concern has forced Congress to appropriate

large sums of money to regulate and investigate major sources of groundwater contamination and to clean up contaminated sites.

Groundwater is vital to Nebraska. With the exception of the rural households serviced by the Cedar-Knox Rural Water District, which supplies surface water, groundwater satisfies the water use demands of the entire rural population. Eighty-four percent of the public water supply demand is met with groundwater (Conservation and Survey Division, unpublished data). Only Crawford and Blair and the small communities of Crofton and St. Helena are not served by groundwater. Chadron and the Metropolitan Utilities District, which serves the Omaha area, rely on both surface and groundwater. Thus, 90 percent of the state's residents use groundwater for drinking water and other domestic needs. Seventy-two percent of the irrigation needs and 85 percent of the self-supplied industrial needs are met with groundwater (Lawton and others, 1983). Because this natural resource is essential to the development of the state, its quality must be maintained.

Quality describes the physical, biological, chemical, and radiological characteristics of groundwater. The assessment of the quality, however, is dependent upon the intended use, because the importance of each property is relative to the intended use and the user.

The hardness of water readily illustrates the relativity of quality. Except for groundwater underlying the Sandhills, groundwater in Nebraska is moderate-to-very hard. Hardness, which is principally calcium and magnesium, reduces the water's suitability for domestic and industrial uses. Inside hot water heaters, coffee pots, tanks, and boilers, hardness causes scale formation, which impedes the transfer of heat. Scale is

aesthetically undesirable in toilet bowls and on plumbing fixtures. While softened water is ideal for laundering, bathing, and dishwashing, it is unsatisfactory for drinking because sodium has replaced calcium and magnesium. Softened water also makes beverages tasteless and causes corrosion in machines and boilers where a thin layer of scale is desirable. The components of hardness are not harmful when ingested; consequently, hardness in drinking water is not regulated. In fact, evidence suggests that hardness in drinking water helps build strong heart muscles. The public's assessment of the quality of hard water would be based mostly on aesthetics, while an industry's would be based on operating costs.

In general, the public probably assesses drinking water quality based on properties which can be evaluated by personal experience, such as taste, odor, and appearance, and on media hype. In a recent *Los Angeles Times* survey, nearly 40 percent of California residents used bottled water or water filtered in the home as their primary source of drinking water (Troise, 1986). The primary reason for using bottled or filtered water was taste, rather than health concerns. Seventy-seven percent of the respondents to the 1986 Nebraska Annual Sociological Indicators Survey (Booth, 1987) thought there were "man-made chemicals in the drinking water which could affect their health." Seventy-six percent ranked the problem as a serious or moderately serious one. In an ironic twist, residents of southeastern Nebraska thought the problem was less serious than other Nebraska residents. Booth attributed this to the large urban population which has less direct exposure to water quality problems than rural and small community residents. The highest regional frequency of point source

contamination in Nebraska occurs in the southeastern part of the state (Exner, 1980a and 1980b). This contamination primarily affects rural residents.

Regulatory agencies, such as, the Nebraska Department of Environmental Control (NDEC) and the Nebraska Department of Health (NDOH), define water quality in terms of its conformity to U.S. Environmental Protection Agency (EPA) drinking water standards. All public drinking water supplies, those regularly serving a minimum of 25 people or having at least 15 service connections, must meet these federal drinking water standards. Also known as maximum contaminant levels (MCLs), these enforceable criteria establish the maximum permissible concentration of a contaminant in a public water supply.

Nebraska, like most other states, has adopted the federal drinking water standards as groundwater quality standards. The rationale for this decision is that most of the groundwater in the principal aquifer in Nebraska is of drinkable quality, and it is a source of drinking water for most of the populace; therefore, protecting the groundwater for use as drinking water usually protects it for all uses. The contaminants that are regulated in Nebraska and their maximum contaminant levels are listed in tables 1 and 2. From these tables it is evident that the EPA has promulgated very few MCLs, although 83 contaminants are to be regulated by 1989. Because EPA standards, especially those for organic compounds, have been developed at a slower rate than the chemicals have been detected in drinking water, a few states have established groundwater quality standards or health advisories for compounds without MCLs. California, Florida, New York, Massachusetts, and Wisconsin have adopted additional water quality criteria.

Table 1 - Primary groundwater quality standards and established maximum contaminant levels (MCLs)

Contaminant	MCL	Physiological Effect
Inorganic chemicals (mg/l):		
Arsenic	0.05	toxic; carcinogen ?
Barium	1.0	toxic
Cadmium	.01	toxic; carcinogen ?
Chromium	.05	carcinogen ?
Fluoride	4.0	dental mottling
Lead	.05	carcinogen ?; teratogen
Mercury	.002	toxic
Nitrate-nitrogen	10	methemoglobinemia
Selenium	.01	suspect carcinogen
Silver	.05	skin discoloration
Organic chemicals (µg/l):		
Endrin	.2	carcinogen
Lindane	4	carcinogen
Methoxychlor	100	teratogen
Toxaphene	5	toxic
2,4-D	100	carcinogen
2,4,5-TP Silvex	10	carcinogen; teratogen
Total trihalomethanes	100	carcinogen
Radionuclides (pCi/l):		
Radium-226 & radium-228	5	carcinogen
Gross alpha activity (includes Ra-226; excludes radon & uranium)	15	carcinogen
Gross beta activity	50	carcinogen

Primary Source: Nebraska Department of Environmental Control.
Title 118 - Ground Water Quality Standards and Use Classification.
November 22, 1986.

Table 2 - Secondary groundwater quality standards and established maximum contaminant levels (MCLs)

Contaminant	MCL (mg/l)	Aesthetic effect
Chloride	250	taste
Copper	1	taste
Iron	.3	stains
Manganese	.05	stains
Sulfate	250	taste
Zinc	5	taste

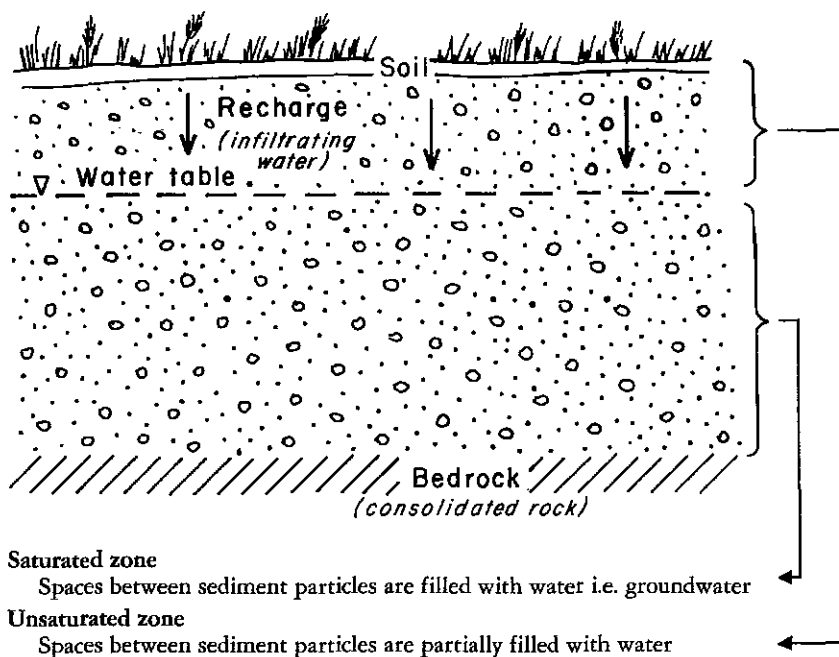
Primary Source: Nebraska Department of Environmental Control. Title 118 - Ground Water Quality Standards and Use Classification. November 22, 1986.

Overview of Groundwater Quality

Because chemicals are widespread in the environment and most chemicals are at least slightly soluble in water, contaminants can be transported to the aquifer by recharge. Recharge, which is water reaching the surface of the water table (see figure 1), is a primary influence on groundwater quality in Nebraska. Sources of recharge include bodies of surface water, such as rivers, lakes, streams, canals, reuse pits, and lagoons; infiltrating precipitation; and irrigation water.

Chemical contaminants can occur naturally or they can be anthropogenic, that is, introduced by man. Major naturally occurring contaminants are derived from the breakdown of minerals (salts) and organic matter in the soil, and from the dissolution of minerals in the unsaturated and saturated zones (see figure 1). Anthropogenic contaminants include chlorinated organic solvents, metals, nitrates, and pesticides. Whether natural or anthropogenic, the source of the contaminant can be described as line, point, or nonpoint. Chemicals can seep

FIGURE 1
Major Hydrogeologic Zones



into aquifers along the length of a waterway (a line). Hence rivers, streams, and canals are potential line sources of contamination. Point sources originate at discrete locations, such as disposal pits, lagoons, abandoned feedlots, wells, spills, landfills, surface impoundments, and underground storage tanks. Nonpoint contamination is dispersed over an area. Fertilizer and pesticides applied to fields and precipitation are potential nonpoint sources.

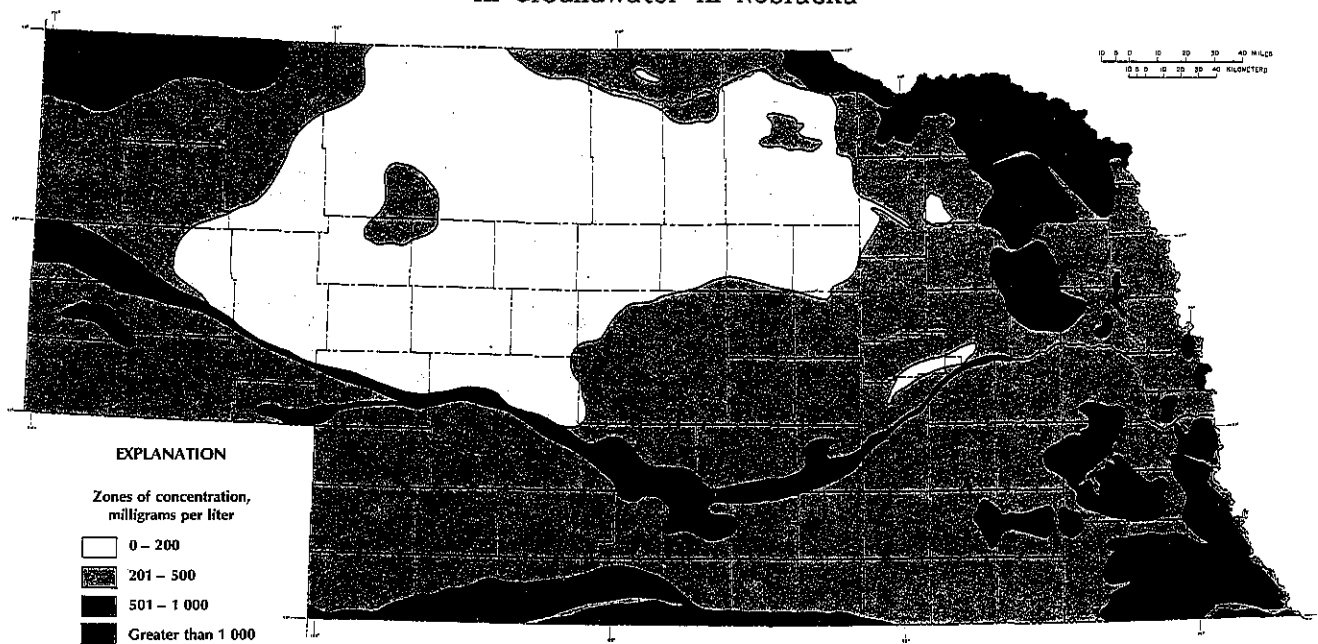
Line Sources of Contamination

The Platte River is by far the most important line source of recharge in Nebraska. Because the public

supply wells of most towns and cities along its 500-mile path in Nebraska pump groundwater from the Platte River alluvium, the wells, in essence, are pumping considerable amounts of Platte River water. An estimated 40 percent of Nebraska's population served by public water supplies relies on this alluvial aquifer, which is composed of sediments deposited by the Platte River. Although potable, water in the Platte River and in the alluvium generally contains higher concentrations of many naturally occurring chemicals than water pumped from most of the state's shallow aquifers. This chemical load, known as total dissolved solids (TDS), is a measure of the amount of mineral matter dissolved in the water. The elevated TDS in the groundwater surrounding the North Platte, South Platte, and Platte Rivers indicates that there is lateral seepage of canal and river water (figure 2). The pumping of irrigation wells in the Platte Valley exacerbates this transfer, as does recharge from canal-irrigated bottomland.

Anomalously high concentrations of chloride, sulfate, calcium, sodium, and uranium in Platte River water identify the river's contribution to the groundwater. Generally, these chemicals do not invoke water quality concerns. Uranium could be the exception. Uranium concentrations average about 25 parts per billion (ppb) and uranium contributes about 20 picocuries (a unit quantity of any radioactive nuclide in which 0.037 disintegrations occur per second) of alpha radiation per liter ($\mu\text{Ci}/\text{l}$) (Spalding and Druliner, 1981). Although this radiation is higher than the maximum contaminant level (MCL) of 15 $\mu\text{Ci}/\text{l}$ allowed in public drinking water supplies, the MCL does not include alpha radiation from radon and uranium (table 1). Therefore, the water still is in compliance with drinking water regulations if less than 15 $\mu\text{Ci}/\text{l}$ total alpha activity is contributed by

FIGURE 2
Concentrations of Dissolved Solids
in Groundwater in Nebraska



Source: R. Engberg and R. Spalding, *Groundwater Quality Atlas of Nebraska*. Resource Atlas No. 3. University of Nebraska-Lincoln, Conservation and Survey Division, 1978.

nuclides other than uranium and radon. The beneficial uses of the river water could be curtailed in the near future when the EPA promulgates a MCL for uranium.

Pesticides in runoff from treated fields appear to be the greatest anthropogenic threat to drinking water derived from the infiltration of water from the Platte River. Recently, low levels of the herbicides atrazine, alachlor (Lasso), cyanazine (Bladex), and trifluralin (Treflan) and the insecticide carbofuran (Furadan) were identified in the Des Moines, Iowa, water supply (U.S. Water News and the Freshwater Foundation, 1987). Because Des Moines derives its drinking water supply from infiltrated Des Moines River water, an analogous situation could be present in Nebraska. The Conservation and Survey Division in the Institute of Agriculture and Natural Resources of the University of Nebraska-Lincoln currently is sampling the Platte River at 27 locations between Scottsbluff and Omaha. Preliminary data obtained during a high runoff event in the spring indicate the presence of several pesticides in part per billion quantities. These concentrations appear related to runoff from unimproved croplands.

Point Sources of Contamination

While point sources of groundwater contamination generally result from human activities, many times natural processes occurring within the aquifer cause local groundwater contamination. Within these relatively small areas, low oxygen levels in the groundwater favor reactions that solubilize metals contained in minerals in the aquifer or that produce gases. High concentrations of iron, manganese, uranium, radon, and hydrogen sulfide can be produced. In some cases, changing the depth of the well screen or the areal siting of the well will

improve the situation. While the health effects caused by ingesting water with high levels of radon (decay product of radium) and uranium are questionable, elevated concentrations of hydrogen sulfide, iron, and manganese are primarily a nuisance. High concentrations of radium and uranium in groundwater occur in the basal Chadron unit beneath Crawford (Spalding and others, 1984) and in the basal Pleistocene near Alda in Hall County (Spalding and Loope, 1984a and 1984b). Hydrogen sulfide, iron, and manganese make groundwater less attractive by imparting odor (rotten egg smell from hydrogen sulfide), taste (a bitter taste to coffee and other beverages from iron and manganese), and stains (iron and manganese). While these nuisance chemicals are removed from most public water supplies, they remain the principal water quality concern for many rural Nebraskans. As more domestic wells are drilled deeper to avoid agricultural contaminants at the top of many aquifers, the number of iron, manganese, and hydrogen sulfide complaints will increase.

There is a long and growing list of anthropogenic point sources of groundwater contamination in Nebraska. Some of these sources have been causing problems for the past 70 years; others have been discovered only recently. These contaminants are associated with agriculture; petroleum storage; munitions production; solid and hazardous waste disposal; and a multitude of industries, ranging from dry cleaning plants to heavy equipment manufacturing.

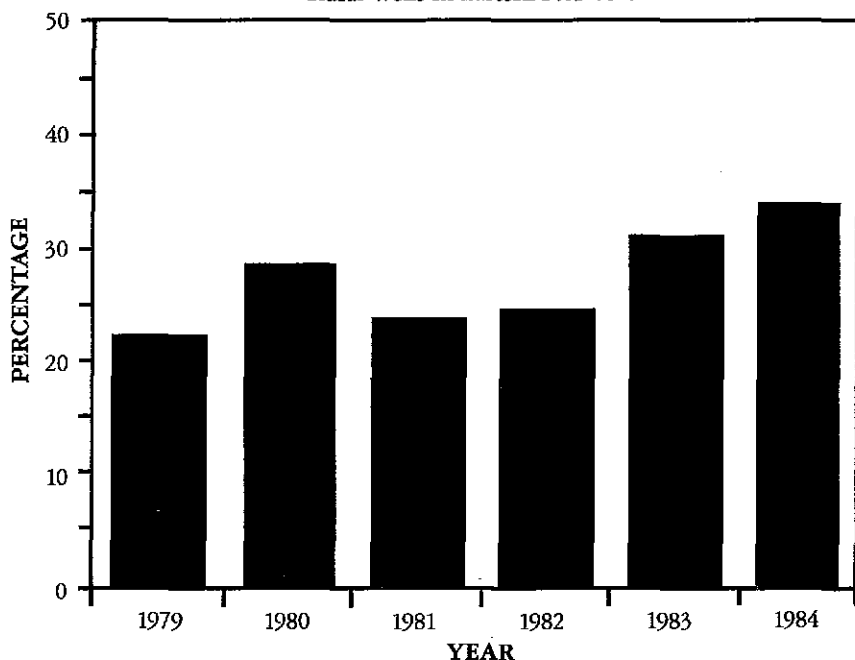
Since the late 1940s, sporadic elevated nitrate levels have been reported in the groundwater of the eastern quarter of Nebraska. A recent study (Exner and others, 1985) of the lower Nemaha basin (in extreme southeastern Nebraska) showed that 71 percent of the 268 sampled wells had nitrate-nitrogen concentrations

above 10 parts per million (ppm), coliform bacteria, or both. The areal distribution of the nitrate concentrations was indicative of point source contamination. Leachates from animal wastes were the major contaminant, while siting and construction of the contaminated wells were inadequate to protect the integrity of the water supply. The incidence of nitrate-nitrogen contamination, that is wells with more than 10 ppm nitrate-nitrogen, in this 1,100 square mile area was 37 percent (figure 3). This is similar to the frequencies (22 percent and 18 percent) reported in two areas of about 7,200 square miles in eastern Nebraska with point source nitrate-nitrogen contamination (Exner, 1980a and 1980b). These data indicate that nitrate is the most widespread groundwater contaminant in rural eastern Nebraska.

According to the Nebraska Department of Health (NDOH) (1987), incidences of nitrate contamination throughout rural areas of the eastern quarter of Nebraska increased between 1979 and 1984 (figure 4). Eighteen of the 26 towns in Nebraska in violation of the nitrate-nitrogen MCL were in the eastern quarter of the state (NDOH, 1987). In nonirrigated areas these elevated concentrations probably result from point source nitrate contamination.

Although much of the nitrate contamination in the eastern quarter of Nebraska originates as point sources, new evidence suggests that nitrate from nonpoint sources can contaminate the groundwater beneath irrigated fields even in areas where the unsaturated zone sediments are predominantly fine-textured silts and clays (Kitchen, 1987). Previously, researchers thought that even under irrigation significant quantities of nitrate did not pass through thick layers of fine-textured sediments; consequently, most groundwater in the eastern quarter of Nebraska was assumed much less likely to be

FIGURE 4
Annual Incidence of Nitrate-Contaminated
Rural Wells in Eastern Nebraska



Source: Nebraska Department of Health, open-file data, 1987.

contaminated by nonpoint sources of nitrate. Generally, nitrate levels in the eastern quarter of Nebraska are higher in groundwater contaminated by point sources than in groundwater contaminated by nonpoint sources. This is a response to the higher levels of nitrate in the leachate from point sources, and the lack of groundwater available for dilution because of the thinness of the aquifer.

The potential for nitrate contamination from manure-covered soils is dependent upon the animal density in the barnyard or feedlot. Nitrate-nitrogen is less likely to accumulate in the deep soil profile of feedlots that are always stocked. These soils have an undisturbed and

continuously accumulating manure pack where hoof compaction and excreted urine keep the surface sealed, damp, and reducing. In this environment conversion of ammonia to nitrate is unlikely (McCalla and others, 1972; Elliot and others, 1973). When the feedlot is abandoned, surficial drying and cracking promote conversion of urea to nitrate and the subsequent leaching of nitrate through the unsaturated zone and, ultimately, to the groundwater. Because most barnyards and corrals are not stocked in the summer, the physical and chemical processes occurring in the manure pack would parallel those in an abandoned feedlot.

Few cases of point source pesticide contamination have been reported to the Nebraska Department of Environmental Control (NDEC), although several have occurred. Most of the accidents occurred when chemicals were applied near surface waters that were in hydraulic connection with the groundwater, or when the chemical was back-siphoned from a mixing tank and was injected directly into the groundwater. One of the first documented cases occurred in Kimball in 1969. The herbicide picloram (Tordon), allegedly sprayed on weeds around a waste lagoon, contaminated the municipal water supply and caused the demise of several hundred greenhouse tomato plants. A similar event occurred in Bassett in 1975. Trace levels of arsenic in the municipal water were attributed to the use of an arsenic herbicide around the municipal sewage lagoon. These two examples illustrate the incompatibility of siting wells near lagoons.

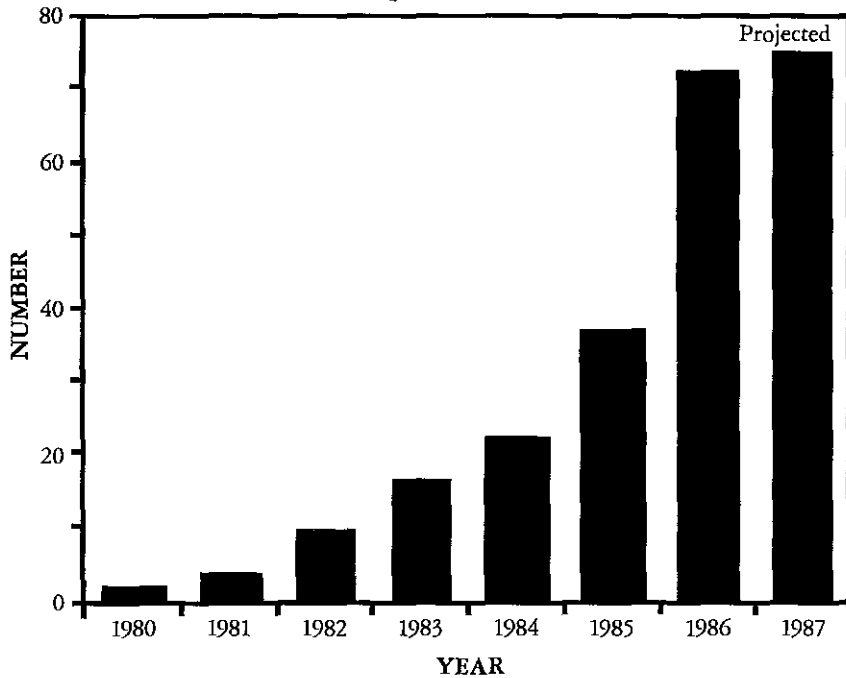
Farmers have been known to contaminate their domestic water supplies when mixing pesticides. Back-siphoning occurs when the water hose remains in the pesticide mixing tank and the well pump shuts down. The contents of the mixing tank subsequently are siphoned into the well.

Back-siphoning during chemigation is a potentially severe contamination problem. Chemigation is the application of chemicals, usually pesticides or fertilizer, to crops through an irrigation system. Basically, the concentrated chemical is metered into the irrigation water and applied with the irrigation water. Chemigation systems provide a direct route for contamination of the groundwater by pesticide or fertilizer concentrates if the back-flow prevention equipment fails, or if the system is operated illegally without a check valve.

Recently, leaky underground storage tanks have become a source of concern as point sources of contamination. In Nebraska, most of these tanks contain leaded and unleaded gasoline and diesel fuel. Industrial solvents are stored in a few tanks. As early as 1960, however, gasoline contamination was reported in an aquifer in Nebraska. Tens of thousands of gallons of gasoline were floating on the water table near and beneath the Swift Company plant in Gering (Crawford, 1960). Since 1980, the Nebraska State Fire Marshal (NSFM) has responded to 88 life-threatening incidences caused by fuels migrating into sewer systems or home basements (J. Gross, 1987). During this same period, the NDEC investigated 186 fuel leaks that either were not life-threatening or occurred within the seven largest cities (W. Imig, 1987) (figure 5). Both agencies expect an increase in the number of reports of leaky fuel tanks during the next 2 years, as more station owners become aware that procrastination in reporting leaks results in more extensive contamination and more costly cleanup.

Gasoline and diesel fuel are organic compounds that do not dissolve in water and are lighter than water; consequently, the fuel is found at the water table. Although the fuel remains relatively stationary and does

FIGURE 5
Number of Leaking Underground Fuel Storage Tanks
Reported to NDEC



Source: W. Imig, Nebraska Department of Environmental Control, May 14, 1987.

not move with the groundwater flow, there are water-soluble compounds in the fuel. The presence of these compounds (benzene, toluene, and xylene) in the groundwater usually indicates petroleum contamination. Because relatively large quantities of these compounds can be dissolved in the groundwater and move with the flow, serious groundwater quality problems can develop, and they create much more concern than the immobile fuel. Nine municipalities in Nebraska have trace levels of one or all three compounds in a public supply well or monitoring wells in the vicinity of the public supply wells (NDOH, 1987). In these instances, the sources are

most likely leaky underground storage tanks at gas stations or surface spills. In Nebraska, there have been at least two incidences of groundwater contamination from leaky storage tanks containing the pure industrial solvents toluene and xylene.

Another class of groundwater contaminants receiving much press are liquids that do not readily dissolve in water and are heavier than water. These organic compounds are volatile and most contain chloride. Like the fuel-derived compounds, benzene, toluene, and xylene (BTX), these compounds are soluble enough in water that the concentrations can have serious groundwater quality implications but; unlike BTX, these compounds sink through the saturated zone and reside at the bottom of the aquifer. These compounds are used primarily as degreasers, grain fumigants, and paint removers. In Nebraska, trichloroethylene (TCE), carbon tetrachloride, and tetrachloroethylene (PCE) are the most frequently found compounds of this type in the groundwater. TCE, PCE, or both, have been identified in groundwater beneath 13 towns or municipalities, while traces of carbon tetrachloride were found in groundwater beneath 20 other towns (NDOH, 1987).

Waste disposal sites at ordnance facilities that manufactured munitions also have contaminated the state's groundwater. A 3-mile plume of RDX (Research Department Explosive) and a 1-mile plume of TNT have been traced to the decommissioned Cornhusker Army Ordnance facility west of Grand Island (Spalding and Fulton, in press). As part of the remedial action presently being undertaken, contaminated soils at the suspected source areas are excavated and incinerated to remove the munition residues. The costs for cleanup and extending the municipal water supply to homes in the affected area are approaching \$10 million.

Munitions were manufactured at three other ordnance facilities in Nebraska. All three have been abandoned. Both groundwater and soil are being monitored at the former Army ammunition plant at Meade and the former Navy ammunition depot east of Hastings. Monitoring of soil and groundwater at the former Sioux Ordnance Facility, north of Sidney, is not planned in the near future.

In Nebraska, 36 landfills are licensed to accept municipal waste (B. Baugh, 1987). Because second class cities and villages have been exempt from landfill licensing requirements since 1972, NDEC estimates there are 350 to 400 open dumps in the state (B. Baugh, 1987). Certainly some of these dumps and landfills are contaminating the groundwater, but the impact on local groundwater quality is unknown.

Nonpoint Sources of Contamination

Nonpoint contamination results from the dissolution of a widespread, relatively uniform source that can be of natural or anthropogenic origin. It results in large areas of contaminated groundwater with relatively uniform concentrations.

In Nebraska, naturally occurring nonpoint contamination occurs where metals and other chemicals in aquifers with poor quality water are solubilized and migrate into the aquifer used as a potable water supply. These chemicals also can be present in saturated sediments that do not produce recoverable quantities of groundwater, and they can migrate into the producing aquifer.

Significant selenium contamination occurs in the groundwater in areas of Boyd, Keya Paha, and northern Holt counties (Engberg and Spalding, 1978). In these

areas, the water-bearing sediments are thin and yield small quantities of groundwater. In order to ensure that an adequate supply of water is available, wells are drilled into the bedrock to provide additional storage space for water. The creation of this reservoir can mobilize selenium in the bedrock. Moderately high selenium concentrations also occur in groundwater in some parts of the Dakota Aquifer, the principal source of potable groundwater in eastern Nebraska. Volcanic ash beds in northwestern Nebraska are a third source of moderately high selenium concentrations in the groundwater.

The distribution of high fluoride concentrations in the groundwater is quite similar to that of selenium, indicating that both chemicals are derived from similar source rocks (Engberg and Spalding, 1978). Except in isolated cases, the concentrations of these naturally occurring, nonpoint contaminants are not severe enough to cause health problems.

All anthropogenic nonpoint contamination in Nebraska is related to agriculture, which is the state's largest industry. In 1986, this industry used 1.6 billion pounds of nitrogen fertilizer in Nebraska (Nebraska Department of Agriculture, in preparation). In 1984, the last year for which statistics are available, 30 million pounds of pesticides were applied to Nebraska farmland (Johnson and Kamble, 1984). Poor management of these agrichemicals and irrigation water have resulted in nonpoint groundwater contamination.

The short distance to the water table (less than 20 feet), large areas of well-drained to excessively well-drained soils, and intensive fence row-to-fence row irrigated corn agriculture make areas of the Central Platte Natural Resources District (NRD), northern Holt County, and an area west of Sidney the most vulnerable

to nonpoint agronomic groundwater contamination in Nebraska. Groundwater underlying large areas of the Central Platte NRD is contaminated with fertilizer-derived nitrate (Spalding and others, 1978; Gormly and Spalding, 1979). Between 1974 and 1984, the area with nitrate-nitrogen concentrations greater than 10 ppm increased, as did the average nitrate-nitrogen concentration of the contaminated groundwater (Exner and Spalding, 1976; and Exner, 1985). In Holt County, nonpoint nitrate-nitrogen contamination from fertilizer occurred north of the Elkhorn River in areas of intensive irrigation development (Exner and Spalding, 1979). Because of the low chemical load of this Sandhills-type groundwater, additions of sulfate and chloride from potash and sulfamag fertilizers were also apparent in the groundwater. Another area of nonpoint nitrate contamination appears to be developing west of Sidney. Presently, this area, smaller in areal extent than the other two areas, is the site of a detailed investigation by the Conservation and Survey Division of the University of Nebraska-Lincoln.

Areal nitrate contamination in the central Platte, northern Holt County, and an area west of Sidney may be only the tip of the nonpoint nitrate contamination iceberg. Additional investigations in areas of southeast and south-central Nebraska with fine-textured, irrigated soils indicate that in 13 years the nitrate has moved at least 65 feet through an unsaturated zone of predominately silt and clay (Spalding and Kitchen, in preparation). One must conclude that all nitrogen-fertilized, irrigated areas in Nebraska could be subject to nitrate pollution if better fertilizer and water management is not practiced. Most of the nitrate-contaminated wells in the Central Platte NRD also contained trace levels of atrazine, which has been

statistically correlated with the nitrate concentrations. Some wells also tested positive for alachlor (Lasso).

Nebraska's Policy Response to Groundwater Contamination

From the preceding discussion it is apparent that the quality of groundwater has deteriorated in many areas of Nebraska, that the quality in these areas continues to worsen, that new areas of contamination will occur, and that there are many potential sources of contamination that can affect groundwater quality. The public policy responses to the deterioration of Nebraska's groundwater include doing nothing, educating residents, and regulating contaminants.

Historical Perspective of Public Policy

Until the 1980s, programs protecting the quality of groundwater in Nebraska were virtually nonexistent. In the early 1970s, research and educational programs were just beginning to address agronomic nonpoint nitrate contamination of groundwater. Although research showed that changes in agricultural practices had the potential to improve groundwater quality without compromising crop yields, the agricultural community was reluctant to implement these recommendations. Legislation and judicial decisions reflected the impetus in the development of groundwater reserves for irrigation. Rules and regulations that were promulgated were directed at specific point sources of contamination. None of the policy goals, however, were aimed at preserving the integrity of the vastly uncontaminated supply.

Regulation of Potential Line Sources of Contamination. As stated earlier, the most important line source for groundwater recharge in Nebraska is the Platte River. Because different rules and regulations govern the quality of surface water, they are discussed later.

Regulation of Potential Point Sources of Contamination. Although the Nebraska Supreme Court ruled in 1894 (*Beatrice Gas Company v. Thomas*, 41 Neb. 662, 59 N.W. 925) that "landowners were entitled to protection of their drinking water from contamination, and that, under a private nuisance theory, one who pollutes his neighbor's drinking water supplies would be liable for the damages caused," it was not until 1961 that protection of groundwater quality was addressed in Nebraska's statutes. In that year, legislation was passed requiring abandoned irrigation wells to be sealed to prevent contaminants from reaching groundwater supplies (Aiken, 1987). No other laws or regulations protecting the quality of groundwater were forthcoming in the next decade.

As early as 1972, the state legislature recognized the potential for severe and imminent contamination, should an irrigation pump accidentally shut off on a system used to apply water and fertilizer simultaneously. The statute required that fertigation systems be equipped with a backflow prevention device. This device is designed to prevent siphoning of the contents of the fertilizer tank into the irrigation well and, subsequently, into the aquifer if the irrigation pump fails. This statute later was revised in 1977 to require backflow prevention devices on irrigation systems used to apply pesticides. The legislation, which was the first true chemigation law, did not regulate equipment design or specifications or require

inspection of chemigation systems. Comprehensive chemigation legislation was passed in 1986.

In 1971, the Unicameral enacted the Nebraska Environmental Protection Act. This legislation consolidated environmental responsibilities from a variety of state agencies into one administrative unit, the Nebraska Department of Environmental Control (NDEC). Creating such an agency enabled the state to use federal technical and financial assistance more effectively. The NDEC was given broad authority to protect Nebraska's groundwater quality, which included adopting and enforcing regulations. The NDEC wrote rules and regulations for some potential point source contaminants in its early years (table 3); however, it was not until 1978 that protection standards for groundwater quality were adopted.

The NDEC chose to adopt the federal primary and secondary drinking water standards for Nebraska's groundwater, and applied them to groundwater with a total dissolved solids (TDS) concentration of less than 10,000 mg/l (NDEC, 1978). Primary standards are set for contaminants that are hazardous or produce undesirable physiological effects on humans, animals, and plants. Maximum contaminant levels were adopted for ten inorganic compounds, six organic compounds, radium, and gross alpha and gross beta activity.

Secondary standards are applied to constituents that impart odor, color, or taste to the water and are aesthetically undesirable. The criteria basically were those shown in tables 1 and 2.

At the time these rules were promulgated initially, pollution accidents were dealt with idealistically. If a "toxic or taste-and-odor producing substance" was spilled and had the potential to contaminate the groundwater, the responsible individual was to notify the NDEC and, within

Table 3 - Regulated potential point sources

Potential point source	Effective date	Regulatory authority
Individual waste treatment lagoons	1977	NDEC
Septic tank systems	1977	NDEC
Livestock waste control facilities	1983	NDEC
Solid waste disposal	1983	NDEC
Underground injection and mineral production wells	1982	NDEC
Mineral exploration holes	1983	NDEC
Chemigation systems	1986	NDEC
Underground storage tanks	1986	NSFM
Hazardous waste management	1987	NDEC
Abandoned wells (excludes domestic wells) ²	1975	NDWR
Improperly constructed wells	in preparation	NDOH and NDEC

¹Effective date of rules and regulations

²All abandoned wells will be subject to the forthcoming NDOH and NDEC Title 178.

15 days, clean up the ground and groundwater to the extent required by the NDEC, using an unspecified NDEC-approved method (NDEC, 1978).

Regulation of Potential Nonpoint Sources of Contamination. Nonpoint source contamination first was addressed in 1975 in the Groundwater Management Act (GMA). It gave NRDs, which were formed in 1972 by consolidating soil and water conservation districts, watershed districts, and similar boards, broad groundwater management authority. The principal intent of the GMA was to slow or reverse groundwater mining by authorizing NRDs to request groundwater control area designation from the director of the Nebraska Department of Water Resources (NDWR). Groundwater quality control areas, however, could be designated "if the development and utilization of the groundwater supply had caused or was likely to cause within the foreseeable future dewatering of an aquifer resulting in a deterioration of the groundwater quality that made it

unsuitable for the purpose for which it was being utilized" (Statutes of Nebraska, Sect. 46-658).

In 1979, the Lower Loup NRD requested a groundwater control area designation partly because of deterioration of groundwater quality. The request was denied by the director of the NDWR. One reason for the denial was that the chemical degradation of the groundwater supply had not, nor was it anticipated to, result exclusively from the dewatering of the groundwater reservoir (NDWR, 1980). The NRD did not petition for groundwater quality control area designation the next year (1981) when the act was amended to include present or foreseeable contamination.

Further revision of the Groundwater Management Act in 1981 produced the Groundwater Management and Protection Act (GWMPA). This act vested NRDs with the sole authority to request groundwater quality control area designations from the director of the NDWR to prevent current or foreseeable pollution. No longer did the pollution need to be related to dewatering an aquifer. If a control area was designated, the statute authorized the NRD, with NDWR approval, to implement corrective measures that would mitigate or eliminate the condition that lead to the contamination. These corrective measures included at least one of the following: Irrigation scheduling which would regulate the application of water so that it would not move below the root zone; allocation of groundwater withdrawals among users; rotation of groundwater use; stricter requirements for well spacing; installation of flow meters to measure withdrawals; and any other reasonable regulations (Statutes of Nebraska, Sect. 46-666).

If, following a public hearing, the NRD deemed that these controls were not protecting users from contaminated groundwater, a moratorium on the drilling

of new irrigation wells could be declared for 1 year. This provision and the renewal of the moratorium for 1-year intervals were subject to the approval of the director of the NDWR. Domestic wells were not affected by the controls within a groundwater quality control area. Although not a provision of the GWMPA, NRDs within groundwater quality control areas were required to establish a groundwater quality monitoring program in cooperation with NDEC, and provide University of Nebraska-Lincoln fertilizer guidesheets to irrigators.

In 1984, the director of the NDWR approved regulations proposed by the Upper Republican NRD to protect groundwater quality in a control area established in 1977. The NRD required annual permits for each chemigating system. The system needed a properly functioning check valve and a device to shut off the injection pump when the irrigation pump shut off to qualify for the permit (Aiken, 1984). It is noteworthy that the only quality control area designation was instituted for a potential point source contaminant.

Subsequent revisions of the Groundwater Management and Protection Act in 1982 authorized NRDs to establish groundwater management areas, and to implement controls without NDWR approval upon completion of a groundwater management plan and its review by the director of the NDWR. While areas of groundwater quality concern were to be identified in the plan, the authorized controls (allocation of total withdrawal, rotation of use, well spacing requirements, and the use of flow meters) were more effective in regulating withdrawals than in protecting quality (Statutes of Nebraska, Sect. 46-673.09). Throughout the history of the Groundwater Management Act and the Groundwater Management and Protection Act, the authorized controls in groundwater quality control and management areas were

better suited to alleviating quantity degradation than quality degradation.

Recent Policy Developments

The first policy issue study addressing groundwater quality was completed as part of the State Water Planning and Review Process initiated in 1978 and 1979 (Nebraska Natural Resources Commission, 1980). Most, but not all, of the alternatives for protecting groundwater quality had been recommended in the Section 208 Water Quality Management Plan for the State of Nebraska (Nebraska Natural Resources Commission, 1979). This policy issue study did not result in any new legislation.

In 1983, Governor Kerrey formed a Water Independence Congress to develop a set of principles and specific recommendations for developing a water policy for the state. The 40-member congress had diverse economic, political, philosophical, and professional backgrounds, and represented every geographic area of Nebraska. Its recommendations, as well as the development of a Groundwater Quality Protection Strategy by the NDEC in 1984, resulted in more conscious policy decisions than had been made in all the preceding years.

Regulation of Potential Line Sources of Contamination. Surface water quality must comply with standards set by NDEC (NDEC, 1987). The use of the surface water dictates the set of criteria that are enforced. The Platte River has been given an agricultural rather than a public drinking water supply use classification because municipalities do not supply treated water from the river, but, instead, obtain infiltrated river water from wells on islands in the river or along

the river. The general criteria for water with an agricultural classification prohibit the presence of waste or toxic substances that have undesirable effects in crops or livestock. The only numerical criteria are for conductivity, a measurement used to approximate total dissolved solids and nitrate-nitrogen.

Regulation of Potential Point Sources of Contamination. Two specific recommendations of the Water Independence Congress (1983) and the Nebraska Groundwater Protection Strategy draft (NDEC, 1984) were the clarification and modification of the existing law addressing backflow prevention devices on irrigation systems and the enactment of legislation to regulate chemical and petroleum storage. Included in these recommendations were specific issues that needed legislative attention. Both the Nebraska Chemigation Act and the Petroleum Products and Hazardous Substances Storage and Handling Act were passed in the 1986 session of the Unicameral. This was the first legislation with explicit regulations for the prevention of groundwater contamination by two potential point sources.

The Nebraska Chemigation Act (Statutes of Nebraska, Sects. 46-1101 to 46-1148) is a comprehensive law regulating the application of farm chemicals through irrigation systems. NRDs and the NDEC are authorized to "document, monitor, regulate, and enforce chemigation practices in Nebraska" (Statutes of Nebraska, Sect. 46-1102). The law enumerates the safety equipment required on each chemigation system with equipment specifications to be adopted by the NDEC, and requires chemigator certification and a permit to operate the system. NRDs, under NDEC supervision, are charged with enforcement. Each year NRDs must inspect the chemigation system and verify that the applicator is a certified chemigator

before issuing a permit. NRDs also must conduct periodic inspections of chemigation systems.

The Petroleum Products and Hazardous Substances Storage and Handling Act (Statutes of Nebraska, Sects. 81-15.117 to 81-15.127) provided for registration and inspection of storage tanks for petroleum products and hazardous substances and a cleanup fund for orphaned tanks. Rules and regulations adopted and promulgated by the State Fire Marshal include: Procedures and specifications for construction, design, installation, replacement, or repair of tanks; a permit system; an inspection system; monitoring systems; notification of abandonment; procedure for ensuring safety of abandoned tanks; financial responsibility; and leak detection, inventory, and tank testing systems. Primary responsibility for administration of the legislation was given to NDEC.

Nebraska's groundwater protection standards were revised in 1986. In the new document, *Ground Water Quality Standards and Use Classification* (NDEC, 1986a), EPA's new numerical quality criteria were adopted; all groundwater in the state was classified based upon its present or potential use as a drinking water supply, and a remedial action strategy was developed for point source contaminated groundwater.

The new primary and secondary standards for which final maximum contaminant levels have been set are presented in tables 1 and 2. By 1989, this list will include standards for 14 volatile organic chemicals, 24 inorganic and 39 organic chemicals, 5 microorganisms, and 5 radionuclides. These criteria are the basis for regulatory programs and remedial action, and mostly apply to all groundwater, except Class GC (NDEC, 1986a).

Title 118 classifies groundwater in Nebraska as either GA, GB, or GC. Class GA groundwater is used (or is proposed to be used) as a public drinking water supply. The areal extent of the groundwater in this classification can be defined by the hydrogeologic conditions around the well or perimeter of the well field as approved by the NDOH, within a 1,000-foot radius of the well or perimeter of the well field, within an area at least as large as a 1,000-foot radius that has been designated through local ordinances, or within an area zoned or purchased by a local government for the purpose of developing a public drinking water supply well (NDEC, 1986a). The intent of these criteria is protection of the groundwater in the area immediately around the well or well field from land-use activities that could contaminate the groundwater.

Currently, groundwater not classified as GA is classified as GB. This groundwater is used as a private drinking water supply, or it has the potential of being used as a private or public drinking water supply. Class GC groundwater, which has not yet been assigned to any groundwater in Nebraska, has little or no potential as a public or private drinking water supply.

Groundwater classification is one of the criteria that NDEC will consider when setting regulatory requirements for potential point sources of contamination. Currently, classification is not addressed in the rules and regulations for potential point sources for which NDEC has regulatory authority (table 3), and the classification does not address nonpoint sources of contamination.

In Title 118, NDEC also has established a Groundwater Remedial Action Protocol to handle present or potential point source contamination of groundwater. The protocol determines the type and the extent of the action necessary to mitigate contamination. The necessary

action is dictated by remedial action classes (RACs). RACs depend on the use or potential use of the groundwater as a drinking water supply, and are based upon the condition of the groundwater prior to contamination.

Minimum requirements for cleanup are imposed upon the responsible party within each RAC. The maximum time allowed for cleanup is 20 years. LB 1199, which would have established the Environmental Response and Liability Act, a state superfund, to cleanup contaminated groundwater, died in committee during the 1986 legislative session.

Regulation of Potential Nonpoint Sources of Contamination. LB 1106 (1984), an outgrowth of the Water Independence Congress, required each NRD to prepare a groundwater management plan. Implementation, however, is optional. All the NRDs have written groundwater management plans, except the Upper Republican NRD which the NDWR exempted because almost the entire district is a groundwater control area.

In 1986, the Unicameral made sweeping revisions of the GWMPA. For the first time, nonpoint source contamination was addressed seriously in the statutes. LB 894 had two major provisions. First, a NRD could propose a groundwater management area primarily to protect water quality. This provision eliminated control area designation based solely on deterioration of groundwater quality. Second, the NDEC received the authority to designate special groundwater protection areas.

If a management area is proposed primarily to protect water quality, the plan must also be reviewed by the NDEC. Best management practices (BMP) and attendance at educational programs designed to protect

water quality were added to the three control measures (allocation of total withdrawal, rotation of use, and well spacing requirements and use of flow meters) previously authorized for use in management areas. BMP are the "scheduling of activities, maintenance procedures, and other management practices utilized to prevent or reduce present and future contamination of groundwater which may include irrigation scheduling, proper timing of fertilizer and pesticide application and other fertilizer and pesticide management programs" (Statutes of Nebraska, Sect. 46-657). A management area can be dissolved after the district holds a public hearing and approves dissolution.

The efficient management of irrigation water, fertilizer, and pesticides is critical to protecting the integrity of the quality of groundwater. These practices have been advocated for at least a decade, and the University of Nebraska Cooperative Extension Service, the Institute of Agriculture and Natural Resources, and the NRDs have tried to educate area producers about their environmental and economical advantages. The Hall County Water Quality Special Project, initiated in 1979, was a cooperative study among the Central Platte NRD, the University of Nebraska, and federal agencies to demonstrate on a fraction of the 65-square mile area in western Hall County that groundwater nitrate-nitrogen levels could be maintained or reduced through improved nitrogen and water management. When the voluntary program concluded after 4 years, Bockstadter and colleagues (1984) reported that the groundwater nitrate-nitrogen levels had stabilized. The remedial effects of these practices in a groundwater quality management area will be time dependent, and will vary with the area's soil nitrogen characteristics and the thickness of fine-textured sediments in the unsaturated zone.

The Central Platte NRD has developed a model groundwater management plan with extensive controls within designated groundwater quality management areas (Central Platte NRD, 1985). Controls within the management areas are dependent upon the concentration of nitrate in the groundwater. The regulations include banning the application of commercial nitrogen fertilizer on sandy soils during fall and winter; restricting commercial nitrogen fertilizer application until after November 1 on soils that are not sandy, and then allowing applications only with the use of a NRD board-approved inhibitor applied at their approved rate; analyzing the nitrogen content of soils (one composite of eight probes per field or every 40 acres, whichever is less) and irrigation well water annually; requiring attendance certification at district-developed or approved educational programs on best management practices; and reporting of nitrogen concentrations in irrigation well water and soils, crop to be grown and yield goal, recommended nitrogen fertilizer application rate, amount of commercial nitrogen fertilizer applied to each field, and the actual yield obtained annually. If an individual should fail to comply with these controls, the NRD is authorized to issue a cease and desist order after 10 days' notice (Statutes of Nebraska, Sect. 46-663).

The second provision of LB 894 is a significant departure from the local option philosophy that has dominated the Ground Water Management and Protection Act. While the statute recognizes that NRDs "as local entities are the preferred regulators of activities which may contribute to (nonpoint) contamination in both urban and rural areas, the NDEC should be given authority to regulate sources of contamination when necessary to prevent serious deterioration of groundwater quality" (Statutes of Nebraska, Sect. 46-674.02). Consequently,

NRDs no longer can choose to ignore groundwater quality degradation caused by nonpoint source contaminants.

If data available to the NDEC indicate that contamination is occurring or is likely to occur in an area in the foreseeable future, NDEC identifies the area as a potential problem area (NDEC, 1986b), conducts a study to determine if the contamination is point or nonpoint in origin, identifies the areal extent of contamination, and issues a written report. If nonpoint source contamination is present or likely to occur in the foreseeable future, the local NRD is notified and a public hearing is held to determine if a groundwater quality special protection area (SPA) will be designated. The five criteria to be considered in designating a SPA are whether (nonpoint source) contamination of groundwater has occurred or is likely to occur in the foreseeable future, whether groundwater users are experiencing or will experience substantial economic hardships as a direct result of current or reasonably anticipated activities which cause or contribute to contamination of groundwater, whether methods are available to stabilize or reduce the level of contamination, and whether administrative factors directly affect the ability to implement and carry out regulatory activities (Statutes of Nebraska, Sect. 46-674.07). If the director of the NDEC determines that a SPA will be established, a report, which identifies the specific reasons for establishing the SPA and the possible causes of the contamination, must be issued. Subsequently, an order declaring the area a SPA and indicating its geographic and stratigraphic boundaries must be issued. The local NRD then must prepare, adopt, and submit to the NDEC an action plan designed to stabilize or mitigate both the level of contamination and its areal extent.

If the action plan is approved by the director of the NDEC, the protective measures must be carried out until the director determines that the contamination has stabilized at, or been reduced to, a level that is not detrimental to the beneficial uses of the groundwater. If the action plan is not approved, or the revised plan is not approved, or a plan is not submitted to the NDEC, the director is authorized to specify and enforce the necessary protective measures.

The special protection area action plan prepared by a NRD must include the specifics of a NRD-instituted educational program to inform the public about methods for stabilizing or mitigating the level of contamination and preventing the increase or spread of the contamination, the required controls, and an implementation schedule. The protective measures, which are similar to those permitted in a groundwater quality management area, require water users to participate in educational programs, implementation of best management practices, and other reasonable measures to alleviate the conditions for which the special protection area was established (Statutes of Nebraska, Sect. 46-674.09). Users who do not comply with the protective controls established in a SPA are subject to as much as a \$500 fine, or are guilty of a Class III misdemeanor (Statutes of Nebraska, Sect. 46-674.17) which carries a \$500 fine, 3 months in jail, or both. The protective measures are to remain in effect until the level of contamination is reduced or stabilized and the area of contamination has not increased. The SPA designation may be removed after the director of the NDEC has determined that the level of contamination has stabilized or been reduced to a level that is not detrimental to the beneficial uses of the groundwater. The NRD, in cooperation with NDEC, also

must establish a groundwater monitoring program within the SPA.

The special protection area statutes do not address straightforwardly the failure of an NRD to implement an approved action plan or to enforce strictly the protective measures of the plan. There are differences of opinion as to whether NDEC would assume control if either situation occurred. If the threat of the NDEC designating special protection areas and, possibly, setting and enforcing protective measures were to prod NRDs into requesting water quality management areas within their districts, then the intentions of the statute may have fallen short. If a NRD fails to implement an approved action plan, the designation of a SPA does no more to protect groundwater quality than does the requirement that a NRD prepare a groundwater management plan and address water quality. While it is unlikely that a NRD would not implement the action plan, leniency in enforcing the protective measures could occur.

Policy Strategies

Nebraska's groundwater quality policy has been fragmentary and, generally, a reactive policy, that is, the programs are either corrective and respond to known contamination problems or are a response to new EPA policies and regulations. Because the policies have been corrective, they lack the long-range planning characteristic of a groundwater protection program. Legislative changes must occur if the policies, particularly those regarding nonpoint contamination, are to protect the quality of the groundwater resource. NDEC's Groundwater Quality and Use Classification, which addresses point source contamination, is weaker than their draft Groundwater Protection Strategy. In order to

protect groundwater from point source contamination, the rules and regulations for each potential point source must be rewritten in stronger language.

Nonpoint Nitrate Contamination

Nitrate contamination of the groundwater from nonpoint sources will become worse because nitrate-nitrogen concentrations will continue to increase in the contaminated areas, and new areas of contamination are anticipated. Implementation of protective measures permitted in groundwater management or special protection areas will not have an immediate effect on nitrate-nitrogen levels in the groundwater. Because nitrate is still present in the unsaturated zone, it will take time for this nitrate to reach the aquifer. Also, the nitrate levels in the groundwater will not decrease unless the contaminated groundwater is used for irrigation and the nitrate utilized by plants. Nitrate contamination can be anticipated in irrigated areas with fine-textured soils. Although nitrate is predicted to move at a slower rate through thick layers of unsaturated sediments than through coarser textured sediments, eventually, the nitrate will reach the aquifer.

A variety of options are available for dealing with nonpoint nitrate contamination. Three are related to controlling the source of contamination, and the fourth to land use. The first option is to continue the farming practices responsible for the nonpoint contamination and be resigned that the nitrate levels in the groundwater and the areal extent of the contamination will increase. Atrazine concentrations will most likely increase, and other pesticides may become detectable in the groundwater.

The second option is education and implementation of best management practices. The success of this option in reducing nitrate concentrations in the groundwater is debatable. During the last decade, farmers in areas of the Central Platte NRD had the opportunity to participate in a program (technical information, expertise, and field measurements of crop needs were supplied) that could help decrease the amounts of nitrogen fertilizer moving below the root zone. The efficacy of this option relies on farmers' voluntary compliance with best management practices, the number of acres in the program, and the duration of the farmers' participation.

Stricter regulations are the third nonpoint source control option. While present statutes may require use of best management practices in management or special protection areas underlain by nitrate-contaminated groundwater, regulation of fertilizer application rates could be necessary. Because there is no substitute for nitrogen fertilizer, restricting the amount of fertilizer used in areas underlain by nitrate-contaminated groundwater would put farmers within the area at an economic disadvantage. Such a policy would be highly discriminatory, but an effective program probably will require the implementation of best management practices and regulation of fertilizer application rates.

Land-use restrictions are a viable alternative to nonpoint nitrate source control. Activities that have the potential to pollute the groundwater could be prohibited in designated areas. Groundwater in these areas would serve as the potable water supply for areas where the groundwater is contaminated. In essence, polluting activities would be permitted in certain areas, the groundwater quality would be permitted to deteriorate, and the groundwater would be written off as a potable supply. Preservation of sections of the Sandhills and

other pristine areas with good quality groundwater would assure those in nonpoint contaminated areas of a continuous supply of potable water. Such a solution eliminates balancing the cost-benefit ratios of production and regulation in areas that currently have nonpoint nitrate contamination or projected water quality problems.

Several municipalities have purchased islands in the Platte River for their well fields. This was a conscious decision to avoid nitrate contamination by utilizing natural physical barriers. This strategy has worked well; however, the promulgation of new maximum concentrations for contaminants (for example, uranium) present in Platte River water could cause problems for these municipalities.

Nonpoint Pesticide Contamination

As discussed earlier, pesticides have been detected in nonpoint nitrate-contaminated groundwater in the Central Platte NRD and in Holt County. Because Nebraska has not designated a state agency to accept enforcement responsibility for the 35 products listed as restricted use pesticides by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the regulatory authority for pesticide use in Nebraska remains with the EPA. Nebraska is the only state that has not accepted enforcement responsibility for FIFRA. If the proposed national Groundwater Safety Act and FIFRA amendments become law, the enforcement of this new and more stringent groundwater protection legislation also will remain with the EPA.

The EPA could ban all pesticide use in Nebraska and, consequently, could shut down agriculture within the state. Although this is very unlikely, the reluctance of Nebraska to assume responsibility for FIFRA will, most

likely, precipitate increased regulatory action by the EPA in Nebraska. The absence of a state agency to enforce FIFRA has caused communication problems between Nebraska and the EPA, and it has left Nebraska without a pesticide regulatory agency. Presently, the use of pesticides deemed environmentally unsafe by university researchers in other states cannot be restricted or banned in Nebraska. Consequently, insecticides, such as aldicarb, that can be leached from soils easily, will, in all likelihood, be applied to potatoes grown in the Sandhills. Aldicarb, which has already contaminated the groundwater on Long Island and in Florida and Wisconsin, will most likely contaminate the highly vulnerable Sandhills groundwater. As with nonpoint nitrate contamination, the course of action will be remediation. The wiser position, and one that hindsight should have taught us, is prevention. Applications of aldicarb should be banned in the Sandhills and on other highly permeable soils in Nebraska. Many states, including Massachusetts, California, New York, and Florida, have either restricted or banned the use of pesticides that are known to contaminate the groundwater.

In areas of Nebraska where the primary groundwater producing unit is contaminated, a deeper secondary producing unit has become the major source of potable water. Regulation of well construction is needed to protect these secondary producing units from contamination introduced by lax drilling practices. Because most center pivots require a minimum of 800 gallons of water per minute to operate, and more if they are to operate efficiently, irrigation well drillers need to provide maximum water yields. In many areas of Nebraska, drillers are obtaining groundwater from more than one producing unit to obtain a high-yield well.

Layers of fine-textured sediments (aquitards) between aquifers naturally limit the transfer of water between producing units. Screening the well or gravel packing the space between the borehole and the casing in the two producing units provides a pathway for chemical exchange between the water producing units.

In a documented case (Spalding and Cady, 1986), tracer compounds were injected into an irrigation well 3 miles west of Grand Island. The tracers moved out of the bottom of the well, through a gravel-packed borehole in the aquitard (60 percent clay and 40 percent silt), and into the secondary producing unit. This occurrence is a direct result of drilling the hole deeper than necessary and back-filling with gravel. Many irrigation wells in this area, and presumably in other areas of Nebraska, are drilled through aquitards and the annular space packed with gravel or screened in two or more water producing units. Pressure differences, caused by pumping from both producing units, usually result in the downward movement of the groundwater; consequently, the holes in the aquitard act as conduits for recharging the secondary producing unit. If the groundwater in the upper producing unit is contaminated, in this case with agrichemicals, the window in the aquitard provides a vehicle for the vertical spread of the pollutant.

Unfortunately, pressure differences of a few feet between two producing units are not usually noted by well drillers. While the rules and regulations (NDOH and NDEC, in preparation) being written for well construction address drilling through confining layers, these layers would be recognized by drillers only if there were large differences in pressure between the water-producing units. The new rules and regulations will not allow wells to be screened in two producing units if one of the units is known or suspected of having

contaminated groundwater. Overdrilling, as observed in the central Platte area, is not addressed in the forthcoming regulations.

Many irrigation wells that are drilled through the aquitard or screened in two or more producing units are used to chemigate. If the backflow prevention equipment fails, the potentially toxic compounds would be siphoned into the secondary aquifer. Because the lack of site-specific hydrologic data and accurate drilling logs leave doubts about the groundwater flow pattern in many areas of Nebraska, the application of potentially toxic compounds through chemigation systems should be limited to areas that are not near high-yield municipal wells. This precaution should be used in addition to the mechanical safety devices already required by the Nebraska Chemigation Act.

Waste Disposal

Although hazardous and low-level radioactive waste disposal are politically unpopular issues, Nebraska should consider developing secure disposal facilities for both types of waste. The state would then be assuming, rather than shirking, responsibility for correctly disposing of the hazardous and low-level radioactive wastes generated in the state. Not only will properly sited facilities with state-of-the-art design for both types of wastes protect groundwater at the disposal sites from contamination, but having accessible sites will protect groundwater throughout the state from indiscriminate disposal of hazardous and low-level radioactive wastes. Certainly some of the 350 to 400 unlicensed open dumps in Nebraska are receiving hazardous wastes that could be contaminating the groundwater. In addition to being a potentially lucrative

operation, a technologically advanced disposal industry might lure other industries to the state.

Properly sited facilities with state-of-the-art design also are needed if the groundwater is to be protected from contamination at solid waste disposal sites. Alternative waste disposal strategies should be explored fully. Because of potential groundwater contamination, landfills in Iowa will no longer be licensed after 1990. Iowa presently supports incineration as a viable alternative to landfilling.

Research

While it is evident that there is a need for groundwater quality protection legislation, not only in Nebraska but throughout the country, many researchers would say that legislation is now leading technology. Presently, a better understanding of the processes that control contaminant migration in the unsaturated and saturated zones is needed. This knowledge comes from site-specific field studies and not from regional or simulated studies. While local taxing entities, for example NRDs in Nebraska, provide some money for research, the large sums that are necessary for sophisticated equipment must come from the state or federal government. Presently, an inordinate amount of the total funding for groundwater programs is allocated to regulatory agencies and large engineering firms for site investigation and remedial action. Nebraska, with its wealth and dependence on groundwater, certainly should assume a leadership role in groundwater research.

Funding

The appropriation of money for groundwater quality protection and cleanup lies with the legislature. While a successful protection program requires substantial funding, the costs of a preventive policy are much less than those of a corrective policy.

Several states have used their taxing authority to establish state superfund programs. In Iowa, money raised through fees for registration of pesticides, pesticide dealers, and storage tanks; retailers of household hazardous materials; disposal of solid wastes; and taxes on nitrogen fertilizers are directed to a variety of groundwater protection programs. Iowa also has proposed that \$17.5 million in oil overcharge money be allocated to their groundwater protection fund. Nebraska, on the other hand, lacks a groundwater protection fund; perhaps it is time to establish a fund to help enable research and protective strategies.

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The Confinement of Juveniles in Nebraska Jails and Lockups

7

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Using adult jails and lockups for confining youths is a major issue in juvenile justice. Proponents of removing children from these facilities are concerned with the conditions of confinement, the rate of suicide among youths held in adult facilities, the excessive use of secure confinement for youths, and the legal liability of jurisdictions that hold juveniles in adult facilities. Nebraska has made significant progress in reducing the number of youths confined in adult jails and lockups, but has yet to pass legislation or develop programs and facilities to complete the task. Policy options for reducing the use of secure confinement and providing alternative forms of care and supervision for youths under the jurisdiction of the juvenile justice system are presented.

The incarceration of youths under the jurisdiction of the court is a divisive policy issue in juvenile justice. Debates of the last decade have focused on designating what types of youths should be incarcerated and what types of facilities should be used for their confinement.

Congress passed the Juvenile Justice and Delinquency Prevention Act (JJDP A) in 1974, as a result of concerns about excessive and inappropriate incarceration of youths in the juvenile justice system. This act promoted specific policies regarding the placement of youths, and made federal funds available to states that were working toward compliance with these policies.

The first provision prohibits the placement of status offenders (for instance, truants, runaways, and incorrigibles) and nondelinquents (that is, abused and neglected youths) in secure facilities either prior to or following adjudication (formal pronouncement of a

judgement).¹ This chapter focuses on the second provision of JJDPa, which provides that, with some exceptions, juveniles shall not "be detained or confined in any jail or lockup for adults..." [JJDPa §223(a)(14)]. The original act permitted the holding of juveniles in jails and lockups, but required that the youths be separated by both sight and sound from adult offenders.² Subsequent legislation reauthorizing the JJDPa included an amendment requiring participating states to remove juveniles from adult jails and lockups by December 1988.

Nebraska initiated participation in the JJDPa in 1981, and, since that time, has reduced the number of juveniles held in violation of the federal act by 72 percent. Though in some ways impressive, this progress was not sufficient to demonstrate eligibility for 1988 federal funding.³ Furthermore, the experiences of other states indicate that the most difficult part of the jail removal task yet awaits us. The remaining 28 percent represent the youths most difficult to place and the jurisdictions least amenable to change. To date, the necessary legislation has not been passed nor the facilities developed to allow Nebraska to come into full compliance with the JJDPa requirements. Perhaps even more serious is the lack of a coherent state policy regarding the confinement of youths who fall under the jurisdiction of our legal system.

The approaching deadline of JJDPa participation (December 1988) provides a backdrop for analyzing and evaluating Nebraska's policies regarding the secure confinement of juveniles. However, to focus narrowly on compliance with the federal act would obscure the fundamental issues as well as the broader range of policy options available to the state. Confining Nebraska's youths in adult jails and lockups is a serious problem,

and is something that needs to be acted upon with or without federal assistance.

Another appropriate backdrop for the discussion is the passage of LB 637 during the last legislative session. Through this bill, Nebraskans adopted a family oriented policy for dealing with youths who require services. Children confined in jails throughout the state are one of the groups targeted for intervention, and providing services in the least intrusive and least restrictive manner possible is one of the objectives.

This chapter will outline concerns regarding the use of adult facilities for the confinement of youths, present information regarding youths confined in adult jails and lockups in Nebraska, and describe some of the policies and programs developed to reduce the use of these facilities for youths throughout the country.

Problems with Confining Youths in Adult Facilities

The jail removal provisions of JJDPAs were adopted in recognition of a number of problems associated with confinement of juveniles in adult facilities. Proponents of removing children from adult jails and lockups focus on three areas of concern: The conditions of confinement, the rate of suicide among youths held in adult facilities, and the excessive use of secure confinement for youths.

Conditions of Confinement

Advocates of removal maintain that adult facilities are unsuitable for, and detrimental to, the well-being of youths. Of primary concern, leading to the initial sight-sound separation requirements, is the exposure of youths to possible psychological, physical, and sexual abuse by adult inmates and staff. The frequency and seriousness

of the abuse of children in adult jails and lockups is unknown; but, incidents of intimidation, beatings, sexual molestations, and even rapes of young people are reported each year throughout the country.

The deteriorated physical environments and the lack of services within jails are additional concerns of jail removal advocates. The range of conditions of many jails throughout the country have been characterized as "bad to appalling" (Newman, 1986). Administered at the local level, jails compete for tax dollars with entities such as schools and mental health facilities, which are usually given higher priority by taxpayers. As one report notes: "Most jails are old, dirty and decrepit, with insufficient sanitary, food or medical facilities" (Children's Defense Fund, 1976).

The shortage of funds and the role of the jail as a short-term placement facility are two major reasons for the lack of on-site services. The National Coalition for Jail Reform found that 77 percent of U.S. jails have no medical facilities and 75 percent do not provide rehabilitation or treatment services (Allison, 1983). The Children's Defense Fund (1976) found that about 10 percent of the jails studied had educational facilities, and less than 15 percent had recreational facilities.

The physical conditions of, and services provided within, Nebraska's jails and lockups have improved greatly over the years as a result of the Standards and Inspection Program of the Nebraska Jail Standards Board. However, many of the juveniles in rural jurisdictions are held in isolated confinement within adult facilities because of the requirement that juveniles be kept out of sight and sound from adult inmates. Sight-sound separation policies are intended to protect youths from verbal and physical abuse, but give rise to additional problems. Because of limitations in facilities

and staff, separation usually means unsupervised isolation. In many instances, youths are placed in the solitary confinement cells used to punish adult offenders. The Children's Defense Fund (1976) reports the following:

Solitary confinement or confinement in a dank basement or closet-like enclosure for the sole child in an adult jail removes him or her from other inmates, but also from the attention of caretakers and can have severe traumatic effects on an already troubled and frightened youngster.

Suicides

Isolation and lack of supervision are two factors that may help explain the problem of suicide among juveniles confined in adult jails and lockups. The Community Research Center at the University of Illinois compared rates of suicides among four groups of juveniles: Youths held in adult jails, youths held in adult lockups, youths held in secure juvenile detention centers, and youths in the general population (1980 and 1983). The suicide rates for the various populations are presented in table 1.

The researchers reported that the suicide rate among youths held in adult jails (12.3 per 100,000 population) is 4.6 times greater than the suicide rate for juveniles in the general population (2.7 per 100,000). Similarly, the suicide rate among youths held in adult lockups (8.6 per 100,000) is three times greater than the corresponding rate within the general population of youths. These rates take on even greater significance considering the techniques for taking one's life are greater for youths in the general population than for youths held in locked facilities.

Table 1 - Suicide rates for children in adult jails, lockups, and juvenile detention centers during 1978, and children in the general population of the United States during 1977

Population	Number of Children	Number of Suicides	Number of Suicides per 100,000 Children
Children in adult jails during 1978	170,714	21	12.3
Children in adult lockups during 1978	11,568	1	8.6
Children in juvenile detention centers during 1978	383,238	6	1.6
Children in the general population of the United States during 1977	49,008,000	1,313	2.7

Source: Community Research Center of the University of Illinois at Urbana-Champaign, *Juvenile Suicides in Adult Jails: Findings from a National Survey of Juveniles in Secure Detention Facilities*. Champaign, IL: University of Illinois, 1983.

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The parallel between the circumstances of children held in adult jails and lockups and the precipitating events of juvenile suicide have been described by social scientists. Factors associated with juvenile suicide include: Anticipation that parents will be apprised of the child's misbehavior (Shaffer, 1974), legal problems (Mulcock, 1955; Faigel, 1966), isolation (Bakwin, 1973; Jacobs, 1971), and parental deprivation (Barter and others, 1968).

Interestingly, however, the high rates of juvenile suicide found in adult jails and lockups do not appear in juvenile detention centers. In fact, the rate of suicide among youths held in juvenile detention centers (1.6 per 100,000 population) is slightly less than the comparable rate for youths in the general population (2.7 per 100,000), although not significantly so. Because the suicide rate among juveniles held in adult facilities is 7.7 times greater than that for youths held in juvenile centers, it appears that detention does not necessarily increase the likelihood of suicide. Legal problems,

parental deprivation, and so forth, characterize the youth populations in both adult and juvenile facilities. However, as noted by the Illinois researchers, ongoing activities within juvenile facilities and greater supervision of inmates by staff can decrease depression and reduce the opportunity for suicide.

Excessive Use of Secure Confinement

Passage of the JJDPJA resulted from concerns over the excessive use of secure confinement for juveniles.⁴ Approximately 500,000 youths are held in adult jails and lockups each year (Community Research Forum, 1980; U.S. Department of Justice, 1983). Advocates of jail removal maintain that most youths do not require secure detention, but, could be placed more appropriately in nonsecure facilities or safely be released into the community (Children's Defense Fund, 1976; Community Research Forum, 1980).

The Children's Defense Fund disagrees that juveniles in adult jails and lockups are a threat to public safety. Only 12 percent of the youths held in the jails studied were there as a result of a dangerous violent act. Most of the youths had been charged with nonviolent offenses (such as property crimes, 35 percent), behavioral offenses, (such as prostitution, drugs, drunkenness, or vagrancy, 12 percent), and status offenses (18 percent). About 4 percent were held because they had been abused or neglected by a caretaker. In 1983, less than 5 percent of the jailed youths in Nebraska were involved in dangerous, violent acts, and less than one-fifth were in custody as a result of felony offenses.

Sometimes juveniles are detained in jail to teach them a lesson. Instead of serving as a deterrent to future misbehavior, however, many argue that a jail stay

can perpetuate negative behavior. The experience can reinforce a negative or delinquent self-image and expose the youth to adult criminal values. As one publication notes:

For the juvenile offender who is jailed with adults, his term of detention exposes him to a society which encourages his delinquent behavior, even giving him sophisticated techniques and contacts. High recidivism rates have shown to be false the belief that the unpleasant experience of incarceration will have a deterrent effect on the child's future delinquent acts (Community Research Forum, 1980).

Legal Liability

The problems of abuse, lack of services, and suicide form the basis of another concern of policymakers: The legal liability of jurisdictions that hold juveniles in adult jails and lockups. Constitutional challenges to holding juveniles in adult facilities have focused on issues of due process, cruel and unusual punishment, and equal justice. At least one court found that confining children to jails violates their constitutional rights of procedural due process (*Baker v. Hamilton*, 345 Fed. Supp. 345, 1972). Also, the conditions of jails (*Baker v. Hamilton*) and isolated confinement (*Lollis v. New York State Department of Social Services*, 322 Fed. Supp. 473, 1970) have been found to constitute cruel and unusual punishment for youths.

Nebraska policymakers should be aware of the risk of civil suits and the attendant financial liability that could be placed on the state. A U.S. District Court judge in Iowa ruled recently that the JJDPA jail removal requirement adopted by participating states is a federally created right and is enforceable under federal civil rights legislation (*Hendrickson v. Griggs*, No. ZC-84-

3012, N.D. Iowa, April 18, 1987).⁵ The court ordered Iowa to submit a plan for achieving JJDPa compliance by the end of the year. Failure to "reduce juvenile jailings to a legal rate" constitutes contempt.

If upheld on appeal, states that have accepted JJDPa funds but not achieved compliance could face civil rights lawsuits brought by youths held in violation of the jail removal parameters. The associate general counsel for the federal Office of Justice Programs (an office that includes the Office of Juvenile Justice and Delinquency Prevention) believes that even withdrawal from JJDPa participation may not alleviate a state's liability (*Criminal Justice Newsletter*, 1987).

Juveniles in Nebraska's Jails and Lockups

Nebraska prohibits the confinement of juveniles in jails or lockups as a disposition (that is, a sentence) of the court (Statutes of Nebraska, Sect. 43-286). However, status offenders, nondelinquents, and delinquents may be held in these adult facilities pending judicial processing of their cases or transfer to another facility or agency. Youths must be older than 13 to be held in a jail or lockup; 14- and 15-year-olds must be separated by sight and sound from adult inmates (Statutes of Nebraska, Sect. 43-251). The separation requirement does not apply to 16- and 17-year-olds.

The Center for Applied Urban Research (CAUR), a unit of the University of Nebraska at Omaha, compiled data on juveniles held in jails and lockups in Nebraska during 1983 (CAUR, 1985). Data for Douglas and Lancaster Counties were collected from individual facilities within these areas. Data for the other 91 counties were processed through the Nebraska Crime Commission.

Douglas and Lancaster Counties

The use of jails for holding youths is primarily a rural phenomenon. Urban areas, such as Douglas and Lancaster Counties, usually provide separate facilities for youths and adults. The Lancaster County Detention Center for Youth and the Douglas County Youth Center provide secure care for youths under the jurisdiction of the court.

The Omaha Police Department, however, holds juveniles in its lockup. CAUR data show that 639 persons under age 18 were held in this facility during 1983. As shown in table 2, these youths were predominately male (88.6 percent) and more than three-fourths were 16 or 17 years old. Over half of the youths (54.6 percent) were held less than 4 hours; less than 9 percent were held for more than 24 hours. Forty percent were in custody on a felony charge and 30 percent for a misdemeanor charge.

The JJDPa allows for confinement of juveniles charged as adults for felonies in an adult facility. Table 2 indicates that over three-fourths (78.1 percent) of the youths held in the Omaha lockup during 1983 were charged as adults. Information is not available regarding whether these youths were charged with felonies or misdemeanors.

Another exception provides that youths charged with a criminal offense (that is, a felony or misdemeanor) can be detained for up to 6 hours in an adult facility for identification, processing, or transfer. Although a precise estimate of the number of youths held within this exception is not available, it is noteworthy that 54.6 percent of the youths were held for less than 4 hours.

It appears that most of the youths held in the Omaha police lockup are done so in compliance with the JJDPa.

Table 2 - Characteristics of juveniles held in the Omaha Police Department lockup, 1983

Item	Juveniles detained	
	Number	Percent
Gender:		
Male	566	88.6
Female	73	11.4
Total	639	100.0
Age:		
13 or less	51	8.0
14-15	92	14.4
16-17	496	77.6
Time held: ¹		
Less than 4 hours	342	54.6
4-24 hours	229	36.6
More than 24 hours	55	8.8
Type of offense:		
Personal felony	98	15.3
Property felony	161	25.2
Status	5	0.8
Misdemeanor	191	29.9
Combination	97	15.2
Other	87	13.6
Type of booking: ¹		
Adult	489	78.1
Juvenile	137	21.9

¹Information on time held and type of booking was not collected for 13 youths.

However, a more detailed assessment of the situation should be made, and police policies concerning the handling of juveniles should be reviewed.

Rural Nebraska

Adult jails and lockups in 91 Nebraska counties, held 2,373 juveniles during 1983. By 1986, 2,150 juveniles were being held. Table 3 shows characteristics of the

Table 3 - Characteristics of youths held in the jails and lockups of 91 Nebraska counties, 1983 and 1986

Item	Youths detained			
	1983		1986	
	Number	Percent	Number	Percent
Total	2,373	100.0	2,150	100.0
Gender:				
Male	1,718	72.4	1,642	76.4
Female	655	27.6	508	23.6
Age: ¹				
8-10	3	.1	0	NA
11-13	72	3.0	83	3.9
14-15	635	26.8	559	26.1
16-17	1,657	70.1	1,503	70.0
Custody status:				
Pretrial	2,079	87.6	1,845	85.8
Sentenced	294	12.4	305	14.2
Time held:				
0-4 hours	665	28.0	635	29.5
5-8 hours	158	6.7	142	6.6
9-24 hours	518	21.8	486	22.6
25-48 hours	305	12.9	281	13.1
49-96 hours	301	12.7	241	11.2
More than 96 hours	426	17.9	365	17.0
Type of offense:				
Personal felony	38	1.6	NA	NA
Property felony	219	9.2	NA	NA
Status offense	488	20.6	NA	NA
Other	1,628	68.6	NA	NA
Felony	NA	NA	302	14.0
Misdemeanor	NA	NA	1,002	46.6
Civil	NA	NA	28	1.3
Other	NA	NA	818	38.1

NA = not applicable

¹Data on age were not collected for 6 youths in 1983 and 5 youths in 1986.

juveniles held in these facilities during 1983. Most of the juveniles were male (72.4 percent). The juveniles were from 8 to 17 years old, with a mean age of 15.9. About 90 percent (87.6 percent) were detained in the facilities pending judicial processing; the remaining 12.4 percent were adjudicated. Over half of the youths (56.5 percent) were held for less than 24 hours. Twenty-eight percent were in the facility for 4 hours or less. About 44 percent (43.5 percent) were held for over 24 hours, including 17.9 percent who were held for more than 96 hours (4 days).

One-fifth of the juveniles were admitted for a status offense, 9.2 percent were charged with a felony property crime, and 1.6 percent were charged with a felony crime against a person. The remaining 68.6 percent were charged with offenses not elsewhere classified (for instance, misdemeanors and city ordinances).

Table 3 shows that the characteristics of the youths held in 1986 were virtually the same as for those held in 1983. In 1986, almost half (46.6 percent) of the juvenile jailings involved misdemeanor charges; only 14 percent involved felony offenses. Court ordered confinement of youths for immigration, evaluation, or other civil action comprised 1.3 percent of the cases. The final category, "other," consists primarily of youths held either for violating local ordinances or for safekeeping (for instance, runaways and abused or neglected youths), and accounted for 38.1 percent of the jailings.

Tables 4A and 4B provide breakdowns of these offense categories by the length of time the youth was held. Table 4A shows that over one-fourth (29.5 percent) of the youths held in 1986 were released within 4 hours. This includes 27.8 percent of the felony cases, 36.5 percent of the misdemeanor cases, and 22.4 percent of

Table 4A - Type of offense and time confined for juveniles held in the adult jails and lockups of 91 Nebraska counties, 1986

Type of offense	Time held			
	4 hours or less		More than 4 hours	
	Number	Percent	Number	Percent
Felony	84	27.8	218	72.2
Misdemeanor	366	36.5	636	63.5
Civil	2	7.1	26	92.9
Other	183	22.4	635	77.6
Total	635	29.5	1,515	70.5

safekeeping (other). Most of the youths (58.7 percent) were released within 24 hours (table 4B). Of the 887 (41.3 percent) cases involving detention in excess of 24 hours, 42.5 percent were misdemeanor cases and 39.5 percent involved local ordinances or safekeeping.

Table 4B - Type of offense and time confined for juveniles held in the adult jails and lockups of 91 Nebraska counties, 1986

Type of offense	Time held					
	24 hours or less			More than 24 hours		
	Number	Row percent	Column percent	Number	Row percent	Column percent
Felony	152	50.3	12.0	150	49.7	16.9
Misdemeanor	625	62.4	49.5	377	37.6	42.5
Civil	18	64.3	1.4	10	35.7	1.1
Other	468	57.2	37.1	350	42.8	39.5
Total	1,263	58.7	100.0	887	41.3	100.0

Table 5 provides information regarding youth jailings for the 68 counties (or individual cities) within 19 judicial districts. It indicates an inconsistent pattern in incarceration and arrest rates. Some counties have both high arrest and high incarceration rates, some have high arrest and low incarceration rates. This variation indicates that factors other than juvenile crime (as indicated by arrest) may be responsible for the confinement of juveniles in jails and lockups. It may be that local juvenile justice policy is one such factor.⁶

Table 5 - Juveniles held in jails and lockups, by judicial district and county in Nebraska, 1983 and 1986¹

District/county	Juveniles held		Incarceration rate (per 1,000)		Arrest rate (per 1,000)		Type of offense, 1986				Time held, 1986		
	1983	1986	1983	1986	1983	1986	Felony	Misdemeanor	Civil	Other	4 hours or less	24 hours or less	More than 24 hours
	Number	Number					Number	Number	Number	Number	Number	Number	Number
District 1:													
Johnson	3	7	2.2	5.14	5.88	12.49	0	3.00	3.00	1.00	0	2.00	5.00
Nemaha	32	20	15.3	9.55	16.71	15.76	4.00	11.00	0	5.00	3.00	7.00	13.00
Pawnee	1	4	1.1	4.36	16.34	14.16	0	4.00	0	0	1.00	3.00	1.00
Richardson	11	14	3.9	4.98	17.07	17.07	5.00	7.00	0	2.00	2.00	6.00	8.00
District 2:													
Sarpy	365	285	12.0	9.33	25.48	35.70	37.00	128.00	0	120.00	115.00	157.00	128.00
Otoe	22	11	5.3	2.67	15.31	20.42	4.00	5.00	0	2.00	4.00	9.00	2.00
Cass	25	21	4.0	3.37	8.83	23.77	1.00	6.00	0	14.00	7.00	17.00	4.00
Bellevue PD	NA	55	NA	NA	NA	NA	6.00	49.00	0	0	52.00	55.00	0
District 5:													
Butler	7	7	2.7	2.65	NA	5.30	0	5.00	0	2.00	1.00	3.00	4.00
Hamilton	18	24	6.4	8.50	6.73	22.30	0	13.00	0	11.00	13.00	18.00	6.00
Polk	9	6	4.9	3.24	14.04	14.58	0	4.00	0	2.00	6.00	6.00	0
Saunders	18	15	3.2	2.71	7.04	12.27	3.00	9.00	0	3.00	8.00	12.00	3.00
Seward	11	31	2.6	7.33	7.33	17.25	5.00	16.00	2.00	8.00	18.00	26.00	5.00
York	33	28	7.9	6.74	44.26	51.72	4.00	12.00	0	12.00	11.00	18.00	10.00
District 6:													
Dodge	99	67	9.9	6.71	19.72	22.32	10.00	27.00	0	30.00	50.00	62.00	5.00
Thurston	30	12	12.4	4.97	NA	.83	2.00	5.00	1.00	4.00	3.00	5.00	7.00
Washington	37	52	8.0	11.21	7.55	11.21	10.00	34.00	1.00	7.00	10.00	24.00	28.00
District 7:													
Thayer	13	8	6.7	4.13	16.52	9.29	2.00	4.00	0	2.00	4.00	4.00	0
Saline	6	14	1.8	4.27	16.48	13.73	4.00	3.00	0	7.00	2.00	4.00	10.00
Fillmore	15	7	7.0	3.26	0	6.53	5.00	2.00	0	0	2.00	6.00	1.00
Nuckolls	NA	3	NA	NA	NA	NA	1.00	1.00	0	1.00	0	2.00	1.00

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Table 5 - Juveniles held in jails and lockups, by judicial district and county in Nebraska, 1983 and 1986¹ (continued)

District/county	Juveniles held		Incarceration rate (per 1,000)		Arrest rate (per 1,000)		Type of offense, 1986				Time held, 1986		
	1983	1986	1983	1986	1983	1986	Felony	Misdemeanor	Civil	Other	4 hours or less	24 hours or less	More than 24 hours
	Number	Number					Number	Number	Number	Number	Number	Number	Number
District 8:													
Dixon	8	8	3.8	3.78	3.78	4.72	0	2.00	0	6.00	0	2.00	6.00
Dakota	94	90	17.3	16.58	16.76	21.00	8.00	64.00	0	17.00	35.00	64.00	26.00
Cedar	2	2	.5	.54	2.14	3.49	1.00	0	0	1.00	0	1.00	1.00
District 9:													
Antelope	16	1	6.2	.39	0	1.16	0	0	0	1.00	0	1.00	0
Knox	11	13	3.3	3.92	3.62	3.32	2.00	7.00	0	4.00	3.00	4.00	9.00
Madison	50	83	5.8	9.62	22.01	23.40	10.00	45.00	0	28.00	15.00	52.00	31.00
Pierce	5	14	2.0	5.66	NA	3.23	0	10.00	0	4.00	5.00	9.00	5.00
Wayne	5	5	2.2	2.16	9.05	14.22	1.00	3.00	0	1.00	0	0	5.00
District 10:													
Webster	4	3	3.2	2.38	11.11	0	1.00	2.00	0	0	0	2.00	1.00
Phelps	10	8	3.8	3.04	12.54	22.42	1.00	1.00	2.00	4.00	2.00	7.00	1.00
Kearney	7	8	3.6	4.12	1.54	1.03	3.00	5.00	0	0	7.00	7.00	1.00
Harlan	2	1	1.8	.91	.91	4.55	1.00	0	0	0	0	0	1.00
Franklin	4	3	3.7	2.82	5.63	7.51	2.00	1.00	0	0	0	1.00	2.00
Clay	7	6	3.0	2.59	2.59	12.93	1.00	3.00	0	2.00	5.00	6.00	0
Adams	88	111	11.2	14.15	20.01	24.85	7.00	32.00	2.00	70.00	83.00	105.00	6.00
District 11:													
Hall	279	266	16.8	16.02	35.83	39.50	40.00	111.00	2.00	113.00	32.00	142.00	124.00
District 12:													
Buffalo	100	130	10.8	14.07	15.48	25.76	20.00	67.00	3.00	40.00	33.00	64.00	66.00
Sherman	2	NA	1.6	NA	1.59	15.10	NA	NA	NA	NA	NA	NA	NA
District 13:													
Lincoln	135	178	12.1	15.98	25.40	30.07	20.00	70.00	2.00	86.00	6.00	88.00	90.00
Keith	37	24	13.6	8.83	33.11	18.03	5.00	8.00	1.00	10.00	4.00	13.00	11.00
Dawson	53	6	7.9	.89	16.03	15.43	2.00	1.00	0	3.00	1.00	5.00	1.00
District 14:													
Dundy	1	1	1.4	1.44	4.31	4.31	0	1.00	0	0	0	0	1.00
Furnas	3	NA	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hitchcock	8	1	7.0	.88	.88	3.52	0	1.00	0	0	0	1.00	0
Perkins	2	NA	1.9	NA	3.84	.96	NA	NA	NA	NA	NA	NA	NA
McCook PD	NA	10	NA	NA	NA	NA	0	5.00	0	5.00	3.00	7.00	3.00
Frontier	NA	3	NA	NA	NA	NA	0	3.00	0	0	0	0	3.00

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Table 5 - Juveniles held in jails and lockups, by judicial district and county in Nebraska, 1983 and 1986¹ (continued)

District/county	Juveniles held		Incarceration rate (per 1,000)		Arrest rate (per 1,000)		Type of offense, 1986				Time held, 1986			
	1983	1986	1983	1986	1983	1986	Felony	Misdemeanor	Civil	Other	4 hours or less	24 hours or less	More than 24 hours	
	Number	Number					Number	Number	Number	Number	Number	Number	Number	
District 15:														
Brown	11	9	8.8	7.17	6.37	7.17	0	8.00	1.00	0	5.00	7.00	2.00	
Cherry	11	17	5.7	8.85	9.38	7.81	2.00	9.00	0	6.00	5.00	7.00	10.00	
Holt	20	2	4.7	.47	2.59	1.88	0	1.00	0	1.00	0	2.00	0	
District 16:														
Sheridan	35	30	16.2	13.90	19.92	19.45	1.00	21.00	0	8.00	6.00	12.00	18.00	
Dawes	20	35	8.3	14.60	23.78	14.60	7.00	23.00	1.00	4.00	3.00	9.00	26.00	
Box Butte	74	59	18.2	14.47	32.13	30.91	14.00	20.00	2.00	23.00	15.00	29.00	30.00	
District 17:														
Morrill	16	10	9.2	5.76	4.03	10.37	1.00	3.00	0	6.00	2.00	6.00	4.00	
Scotts Bluff	160	144	13.8	12.43	19.08	18.82	9.00	60.00	0	75.00	11.00	57.00	87.00	
Garden	NA	5	NA	NA	NA	0	4.00	0	0	1.00	0	3.00	2.00	
District 18:														
Jefferson	10	3	4.2	1.27	19.08	3.39	0	2.00	0	1.00	1.00	2.00	1.00	
Gage	13	19	2.1	3.08	45.60	12.98	2.00	11.00	0	6.00	4.00	15.00	4.00	
District 19:														
Cheyenne	30	31	10.8	11.12	25.48	27.99	10.00	11.00	3.00	7.00	13.00	21.00	10.00	
Deuel	5	1	7.5	1.50	9.01	4.50	0	1.00	0	0	0	1.00	0	
Kimball	11	10	7.8	7.08	35.39	36.80	2.00	1.00	0	7.00	1.00	6.00	4.00	
District 20:														
Custer	8	17	2.1	4.45	11.51	10.20	8.00	3.00	0	6.00	0	7.00	10.00	
Valley	7	4	4.6	2.62	15.75	22.97	0	2.00	0	2.00	0	1.00	3.00	
District 21:														
Plette	42	42	4.6	4.64	21.22	16.69	6.00	14.00	0	22.00	5.00	18.00	24.00	
Merrick	13	28	4.7	10.23	12.78	21.91	3.00	15.00	0	10.00	11.00	21.00	7.00	
Colfax	6	9	2.1	3.15	10.50	20.31	4.00	2.00	1.00	2.00	0	4.00	5.00	
Boone	7	9	3.2	4.14	.92	2.30	1.00	5.00	0	3.00	7.00	8.00	1.00	

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NA = not applicable.

¹ Douglas and Lancaster Counties are not included, and counties that do not have jails or lockups are excluded.

Source: Nebraska Crime Commission

Reducing the Use of Jails and Lockups

Rural states and counties have the most difficulty achieving jail removal. De James (1980) lists three characteristics of rural areas that shape the juvenile justice system: Low population, relative isolation, and lack of resources. These overlapping factors hinder efforts to reduce the use of adult facilities for the confinement of youths.

Sparsely populated, isolated areas often lack community resources that could serve troubled youths. Because of depressed economic conditions and meager tax bases, little financial support is available for specialized programs. Construction of juvenile detention facilities in small isolated communities is not economical, and geographic isolation, without special transportation services, makes facilities in other areas inaccessible. Consequently, juveniles taken into custody by police are held in what is usually the sole facility available: The county jail or city lockup. Without alternatives, youths requiring even a little supervision frequently are placed in maximum security confinement.

Research indicates that rural areas have a higher rate of commitment of youths to secure facilities than urban areas (Vinter, Downs, and Hall, 1976). One New Jersey study revealed that four of the counties with the highest detention rates were "among the most rural counties in the state" (Dannefer and De James, 1979). Thus, although rural areas have a lower crime rate than urban areas and juvenile crime involves less serious offenses, a larger proportion of arrested youths are held in secure facilities. De James cites community standards as a reason for this discrepancy:

Since relatively few violent or serious offenses are committed by rural delinquents, it is evident that

those placed in detention facilities or jails have committed relatively minor offenses. This is partially explained by local community standards--a nonserious delinquent offense in an urban area may be viewed as a serious offense in a rural area, warranting detention or jail (1980).

Nebraska faces similar problems related to removal of youths from jails and lockups. However, effective intervention is possible. Successful juvenile justice strategies must reflect the characteristics of rural jurisdictions and use the strengths within these communities. Rural strategies should include cooperation among jurisdictions, effective utilization of available services, and use of community volunteers.

Juvenile justice programs can be designed to serve multiple counties to reduce costs to individual areas and to increase the likelihood of receiving outside financial support (for example, government funds). Programs for troubled youths can be incorporated into existing services, such as child welfare and mental health systems. Cohesiveness and local pride can also be channeled into youth programs. These strategies are illustrated in some of the examples of interventions presented later.

Policies to reduce the use of adult jails and lockups for holding youths can be separated into two major areas: Reducing the overall number of youths held in any type of confinement, and providing alternative facilities or programs for the care of youths.

Reducing Confinement

Advocates of removing youths from jails are concerned with the general overuse of secure confinement. The secure detention of youths between arrest and adjudication is of primary concern. As stated earlier, about 90 percent of the youths held in adult jails

and lockups in the 91 Nebraska counties were awaiting judicial processing.

Several policy options for reducing use of secure confinement have been proposed by national organizations. The following groups have outlined specific policies for reducing or eliminating the use of secure confinement for status offenders and nondelinquents, and for reducing the use of adult jails and lockups for all youths: The National Advisory Committee for Juvenile Justice and Delinquency Prevention (NAC), the Task Force on Juvenile Justice and Delinquency Prevention of the National Advisory Committee on Criminal Justice Standards and Goals (Task Force), the Institute of Judicial Administration/American Bar Association Juvenile Justice Standards Project (IJA/ABA), and the American Correctional Association's Commission on Accreditation for Corrections (CAC).

Status Offenders and Nondelinquents. The second major requirement for receipt of JJDP A funds is the deinstitutionalization of status offenders and nondelinquents. Congress stated that these juveniles are not to be detained in or committed to any type of secure facility; instead, these youths are to be placed in nonsecure programs (such as, shelters or foster homes) if out-of-home placement is necessary.

In accordance with the federal legislation, all four standard-setting groups promote the use of nonsecure facilities for status offenders and nondelinquents. The NAC and IJA/ABA proposals disallow jails, lockups, and other forms of secure confinement for these juveniles. The Task Force report also promotes nonsecure care, but appears to allow for the limited secure detention of runaways prior to referral to intake; the policy is not spelled out clearly.

Juvenile Delinquents. Three of the standard-setting groups advocate greater reliance by police on citations in lieu of taking a juvenile into custody for a delinquent offense. (The fourth report, by the CAC, focuses on correctional programs for youth and does not address this early stage of juvenile justice processing.) A citation is a written order for the youth to appear in court at a specified date, and is used when the case requires court processing, yet detention of the youth is not warranted. The youth remains in the community prior to adjudication.

The IJA/ABA Standard 5.6 specifies that release (for instance, with a citation) be mandatory for juveniles arrested for a crime which, if committed by an adult, would be punishable by less than 1 year of incarceration (the definition of a misdemeanor in most jurisdictions). Exceptions could be made if emergency medical treatment is warranted, if the youth is known to be an escapee from a detention or correctional facility, or if the youth requests protective custody. Even if the crime is punishable by more than 1 year in the adult system (a felony in most jurisdictions), the officer "should release the juvenile unless clear and convincing evidence demonstrates continued custody is necessary" (Institute of Judicial Administration and the American Bar Association, 1977). The NAC criteria are broader, allowing for a consideration of potential harm to the juvenile or others.

The standard-setting groups emphasize that time in police custody (either the police station or police lockup) should be very brief for juveniles taken to detention by police. Within 2 to 4 hours the youth should be referred to an intake unit where another determination is made regarding the necessity of continued confinement. The groups advocate that the primary responsibility for determining whether the youth should be detained prior to

adjudication should rest with intake personnel, not the police.

Criteria for Detention. Intake personnel should be available on a 24-hour basis and should receive the juvenile from police custody and decide whether continued custody is warranted. All four standard-setting groups propose specific written criteria to guide this decision, and are in general agreement regarding the purposes of detention at this stage. These include: Assuring the presence of the juvenile at subsequent judicial proceedings, protecting the juvenile from bodily harm, and preventing the youth from inflicting serious bodily harm on others or from committing a serious property offense.

The 1977 IJA/ABA report (Standard 3.3) maintains that detention is not to be considered:

- To punish, treat, or rehabilitate the juvenile;
- To allow parents to avoid their legal responsibilities;
- To satisfy demands by a victim, the police, or the community;
- To permit more convenient administrative access to the juvenile; or
- Due to lack of a more appropriate facility or status alternative.

Standard 3.151 of the NAC report states that:

A juvenile accused of a delinquent offense should be unconditionally released unless detention in a secure or nonsecure facility or imposition of conditions on release is necessary to protect the juvenile from inflicting serious bodily harm on others or committing a serious property offense prior to

adjudication, disposition, or appeal; or to protect the juvenile from imminent bodily harm (National Advisory Committee for Juvenile Justice and Delinquency Prevention, 1980).

These parameters apply, not just to secure detention, but to other forms of interim control mechanisms, such as detention in a nonsecure facility or conditional release into the community. If unconditional release is not warranted according to the provisions, the least restrictive alternative should be selected.

Criteria for Secure Detention. More restrictive criteria apply when considering secure detention (for instance, in a jail or lockup). According to NAC Standard 3.151, a juvenile meeting the criteria for interim control may be detained in a secure facility if the juvenile is a fugitive from another jurisdiction; requests, in writing, protection from immediate threat of serious physical injury; or is facing murder charges. Additionally, juveniles may be confined to a secure facility if they are charged with some other serious felony involving violence or a serious felony property crime, if one of the following is true:

- They are already detained or on conditioned release in connection with another delinquency proceeding;
- They have a demonstrable recent record of willful failure to appear at family court proceedings;
- They have a demonstrable recent record of violent conduct resulting in physical injury to others; or

- They have a demonstrable recent record of adjudications for serious property offenses (National Advisory Committee for Juvenile Justice and Delinquency Prevention, 1980).

Secure detention is not automatic if the above criteria are met. A further determination must be made that no less restrictive alternative will serve the intended purpose of the interim control.

Judicial Review. All four standard-setting bodies stipulate judicial review of decisions made by intake personnel to hold a juvenile in either secure or nonsecure detention. The Task Force, CAC, and IJA/ABA reports require a detention hearing within 48 hours of when the youth was first taken into custody and subsequent hearings every 7 (IJA/ABA) or 10 (Task Force, CAC) days of continued detention. The NAC proposes the detention hearing be held within 24 hours of arrest (and subsequent hearings every 7 days).

At the initial hearings, held in accordance with the requirements of due process, a judge determines whether there is probable cause to believe the juvenile committed the alleged crime, and whether there is clear and convincing evidence that continued detention is required (Task Force Standard 12.11).

A judicial hearing is the third control mechanism that protects against unwarranted confinement of youth. The standard-setting bodies maintain that this checkpoint, in addition to specific guidelines for police and intake personnel, will effectively reduce the detention of youths and, consequently, the use of adult facilities for this purpose.

Nebraska Statutes. The standard-setting bodies emphasize the need for specific guidelines within statutes for law enforcement and court personnel making decisions regarding youths. Objective criteria are incorporated as much as possible into the policies set forth by each group. The Nebraska statutes, however, are quite broad. A police officer who has arrested a juvenile may release the juvenile without further processing, issue a citation, or take the youth into custody and deliver the youth to the juvenile court or a probation officer. The statutes provide only that the officer, select the disposition "which least restricts the juveniles' freedom of movement, if such alternative is compatible with the best interests of the juvenile and the community" (Statutes of Nebraska, Sect. 43-250). Similarly, the detention criteria guiding the actions of probation and court personnel are not specific. Section 43-253 directs that:

In no case shall the court or probation officer release such juvenile if it appears that further detention or placement of such juvenile is a matter of immediate and urgent necessity for the protection of such juvenile or the person or property of another or if it appears that such juvenile is likely to flee the jurisdiction of the court.

There is no statutory mandate for a detention hearing for delinquents.⁷ However, if continued detention is ordered, the juvenile or representative of the juvenile (for instance, a parent or attorney) may request a hearing in which the state must "show probable cause that such juvenile is within the jurisdiction of the court" (Statutes of Nebraska, Sect. 43-256).

Using the four standard-setting reports as guides, Nebraska policymakers should give serious consideration to broad legislative action that provides for consistent and judicious handling of juveniles.

Alternative Facilities and Programs

None of the proposals of the standard-setting groups advocates the unconditional release of all children into the community pending adjudication. Rather, the screening mechanisms provide a hierarchy of alternatives for the preadjudication disposition of arrested youths, emphasizing the least restrictive means available. For some youths, the least restrictive appropriate preadjudication disposition is unconditional release into the community. To serve the others, the hierarchy calls for a network of community programs providing secure confinement, nonsecure confinement of youths outside of their homes, and in-home supervision.

The network reflects the intent of LB 637 which calls for "community-based services which strengthen communities and families and promote healthy development of children" and providing assistance in the least restrictive, least intrusive way possible. Nebraska currently uses some alternative care programs. In addition to foster care services for youths in need of out-of-home placement, the CAUR report lists 51 licensed facilities in the state that serve as alternatives to jail (CAUR, 1985). These facilities are located in 18 counties, primarily in the more populated eastern part of the state.

As indicated in table 6, most of these facilities are group homes that care for multiple youths in a home-like setting. Eighteen homes (36 percent) can accommodate nine or less youths, and 21 (42 percent) can hold 10-19 youths. Almost all (92 percent) take in runaways and most (86-88 percent) accept truants, ungovernables, and juveniles charged with nonviolent crimes. Less than half (46 percent) accept juveniles charged with violent

Table 6 - Characteristics of alternative care facilities in Nebraska, 1985

Item	Number	Percent
Type of facility:		
Group home	32	64.0
Foster home	4	8.0
Treatment	5	10.0
Other	9	18.0
Total	50	100.0
Capacity:		
9 or fewer	18	36.0
10-19	21	42.0
20-59	9	18.0
60 or more	2	4.0
Total	50	100.0
Type of clients accepted:		
Runaways	46	92.0
Truants	44	88.0
Ungovernables	43	86.0
Juveniles charged with nonviolent crimes	44	88.0
Juveniles charged with violent crimes	50	46.0

¹Information was not collected from one of the 51 facilities.

crimes. These programs could provide a sound basis for the development of a more comprehensive and integrated system for alternative care.

Alternatives used in two predominately rural areas committed to reducing the use of jails and lockups for the confinement of juveniles are presented below. Most of the program components can be used to serve status offenders, nondelinquents, and delinquents, and are appropriate for post-adjudication disposition as well as pre-trial placement.

Michigan Removal Strategy. The strategies implemented in the largely rural Upper Peninsula region of Michigan have received recognition nationwide. Before the program was implemented, hundreds of youths were being detained annually in adult jails. Although the lack of alternative secure facilities was a problem, it was also apparent that detention was overused. According to 1981 detention data, approximately half of the jailed youths were held for less than 24 hours. Only about 23 percent of the jailed youths required some form of secure detention; most required only short-term supervision.

The state established a network of placement options using grant money provided by the Office of Juvenile Justice and Delinquency Prevention. Each participating county made provisions for nonsecure holdovers, shelter care, home detention programs, and transportation services to longer term secure detention.

Holdovers. Each participating county established a holdover where police could bring a youth for short-term placement, pending a formal decision by a court officer regarding pre-adjudication placement or release. The holdover, usually a single room, is located in a nonsecure public facility. In Houghton a spare room at the local crisis telephone center serves as the designated space. Other sites for holdovers could include the county-city building, a detoxification center, a community mental health center, a hospital, or the sheriff's office building. The holdover must provide access to bathroom facilities, a telephone, meals, and hold a cot or couch.

Police officers must obtain permission from the probate court to place a youth in a holdover. The police officer remains with the youth until an on-call youth attendant, who is the same gender as the youth,

(receiving \$5 an hour) arrives. (Two attendants may be assigned as needed.) The attendant stays in the holdover for the duration of the youth's stay, generally not to exceed 16 hours.

The youth is held in the room pending a judicial determination of appropriate interim (pre-trial) care. If a judge determines that unconditional release is not appropriate, the juvenile may be placed in a nonsecure shelter or the Home Detention Program, or may be transported to a downstate secure juvenile detention center.

Shelter Care. A nonsecure detention facility in the largest county in the Upper Peninsula houses both status offenders and delinquents who are at various stages of judicial processing. The staff supervisor and his family live in the facility which provides a homelike atmosphere for youths who do not require secure detention, but for whom return home is not desirable or appropriate. The average stay is 8 days.

Home Detention Program. Juveniles in the Home Detention Program return to their families but remain under the supervision of a trained home detention worker. This quasi-volunteer must meet with the youth at least once a day and make telephone contact each evening. Depending on the youth and the circumstances of the case, the home detention worker may also be in contact with the family, school personnel, or the youth's employer. Workers are paid \$10 per day.

Transportation Network. Michigan's five juvenile detention centers are located in the lower third of the state. A transportation network was established to enable use of these facilities by Upper Peninsula jurisdictions.

If a judge determines that secure care is required for a youth pending adjudication, a citizen volunteer, social service worker, or off-duty police officer transports the youth half way to the designated center. A vehicle from the detention center transports the youth the rest of the way. Citizen volunteers and attendants, if necessary, are paid \$5 an hour plus expenses for the trip.

Secure Holdovers. In accordance with narrow exceptions to the jail removal requirement of the JJDP, specified violent felony offenders and out-of-control youths may be detained in an adult jail following arrest for a limited period. These youths must be separated by sight and sound from adult offenders and receive constant direct supervision. In 1984, only eight youths were held in an Upper Peninsula adult jail; they were held for an average of 5.5 hours.

Result. The Upper Peninsula Plan was implemented in 1981. By the end of 1982, jailings in the participating counties had been reduced by 74 percent, and remained at that level through 1985. Most of the jailings, however, occurred in counties that were not participating in the removal program.

The Colorado Program. Colorado relies on transportation services to address the problem of jailing youths. The Sheriffs Association was instrumental in implementing the jail removal strategy that targeted 32 counties in middle and eastern rural Colorado. In conjunction with similar efforts in the western region, youth jailings were reduced by 50 percent during 1982.

Restrictive local intake screening criteria were developed and intake screeners appointed (generally from a service agency, such as social services, probation, or

mental health) to effect this reduction. These screeners, available 24-hours a day, have a 6-hour grace period in which to decide whether a youth should be released or held pending judicial processing. Holding centers and nonsecure shelter homes provide short-term interim care for youths. If extended secure detention is required, an off-duty police officer transports the youth from middle or eastern rural Colorado to a juvenile detention facility (which may be 300 miles away).

The effective screening process and increased awareness by law enforcement agents regarding the proper handling of juveniles have been instrumental in reducing the number of youths held in adult jails and lockups in most areas of the state (Carty, undated). Several jurisdictions, however, are still holding juveniles in adult jails and lockups outside the parameters of JJDPA. Administrators of the state planning agency think that legislation will be needed to complete the jail removal initiative and bring all jurisdictions into compliance with JJDPA.

Conclusions and Policy Choices

One researcher maintains that "perhaps the most significant problem facing rural juvenile justice is the routine jailing of youths in rural municipal lockups and county jails" (De James, 1980). Nebraska has made progress in addressing this problem, but faces the loss of federal funding for 1988 for falling short of the JJDPA requirements. Now, policymakers must decide whether to discontinue jail removal efforts, to attempt to meet the JJDPA deadline, or to continue jail removal strategies independent of JJDPA.

The first option might entail maintaining the system entirely as it is or, alternatively, placing juveniles in

jails and lockups, but assessing and improving, as necessary, the conditions of confinement. Before this option is considered seriously, the condition of Nebraska's jails and lockups should be assessed. An inquiry should focus on problems such as isolated confinement, psychological harm, physical and sexual abuse, and suicide.

Toward the other end of the continuum of options, Nebraska could attempt to attain JJDP A standards by the December 1988 deadline. This option would sustain federal assistance which has amounted to an average of \$319,000 per year since 1981. Legislation would need to be passed during the next session, incorporating the jail removal mandate (allowing for the several JJDP A exceptions to the jail removal requirement) and establishing specific criteria for the use of secure and nonsecure confinement for youths.

Nebraska could use the experiences and innovations of other states with large rural area programs and facilities to provide alternatives to confinement in adult jails and lockups. The task could be simplified by coordinating efforts among neighboring jurisdictions, utilizing existing resources, and incorporating community volunteers into the effort.

Estimating the cost of developing alternatives to adult jails and lockups is difficult and beyond the scope of this chapter. Nevertheless, Nebraska can learn from studies conducted in other states. In 1982, the Office of Juvenile Justice and Delinquency Prevention sponsored a study of the cost of jail removal in 13 states. This study examined the cost of using three broad categories of policy choices: Secure detention, community residential care, and community supervision. The study concluded that, although it was nearly impossible to establish an actual cost for removal, secure detention was the most

costly alternative. The cost of the other alternatives varied with factors such as level of supervision, location, resource availability, and type of program. Thus, it appears that alternatives other than secure detention are likely to be the least costly.

Finally, Nebraska could pursue a jail removal model without relying on federal funds and the accompanying restrictions. A commitment to change, independent of the JJDP, would follow a course similar to the one outlined above, and should include a demanding implementation schedule that incorporates targets for reducing the number of youths held in adult facilities.

The use of adult jails and lockups for confining youths is one component of a larger problem facing the state. In 1974, a legislative commission noted "...that neither a strategy nor an administrative mechanism for coordinating or providing juvenile services exists" (Sarata, 1974). A decade later, Nebraska Supreme Court Chief Justice Norman Krivosha, serving as chair of the Study Commission on Programs and Services for Dependent Youth and Youth Offenders in Nebraska, commented that the 1974 statement was still true. The 1984 Study Commission promoted comprehensive changes in the juvenile justice system as part of the plan to improve the delivery of services to children, youths, and families. Recommendations included reducing community reliance on the court for linking youths and families to needed services; decreasing out-of-home placements of delinquents, status offenders, and nondelinquents; and establishing a comprehensive and integrated system of community-based services for Nebraska's children, youths, and families.

For awhile it appeared that the findings and recommendations of this commission would be ignored. During the last legislative session, however, Nebraskans

adopted a family oriented policy for dealing with the youths in our state who require services. The legislature mandated that assistance be provided in the least intrusive and least restrictive manner possible and that innovative, community-based services be developed to help youths and families. The next legislative session should produce specific intervention policies to implement this program. The charge of the Study Commission on Programs and Services for Dependent Youth and Youth Offenders in Nebraska is constructive:

Leaders (are called upon) to face a basic consideration: that it is only through a conscious choice and then deliberate policy that we can bring about needed reallocations of resources and authority to better serve the children, youth, and families of Nebraska, (1984).

Endnotes

1. A status offender is one who has violated a law that applies only to juveniles.
2. Throughout this chapter the term jail refers to a county facility operated under the authority of the county sheriff. A lockup refers to a short-term holding facility operated by a municipal police department.
3. To retain funding, Nebraska had to reduce the number of youth jailings by 75 percent and make, "through appropriate executive or legislative action, an unequivocal commitment to achieving full compliance within a reasonable time..." (JJDP A §223(c)).
4. The JJDP A defines a secure facility as one that "includes construction fixtures designed to physically restrict the movements and activities of juveniles" (JJDP A §103(12)(A)).
5. Federal legislation 42 U.S.C. Section 1983 provides for a private cause of action against government entities for claims arising from "the deprivation of any rights, privileges or immunities secured by the constitution and laws" of the United States.
6. Use of certain jails to house juveniles from neighboring counties explains some of the variation in incarceration rates. Counties such as Hall, Lincoln, Box Butte, Scotts Bluff, Dakota, and others serve as *de facto* regional facilities for counties that do not have adequate separation capability to house juveniles.

7. The Nebraska Unicameral passed LB 635 in 1987 which promotes maintaining status offenders and nondelinquents in the family home. Additionally, it outlines the "findings of fact and conclusions of law" which must be included in a written order of the court if continued detention or placement is warranted for a juvenile who is "seriously endangered in his or her surroundings" (Statutes of Nebraska, Sect. 43-248).

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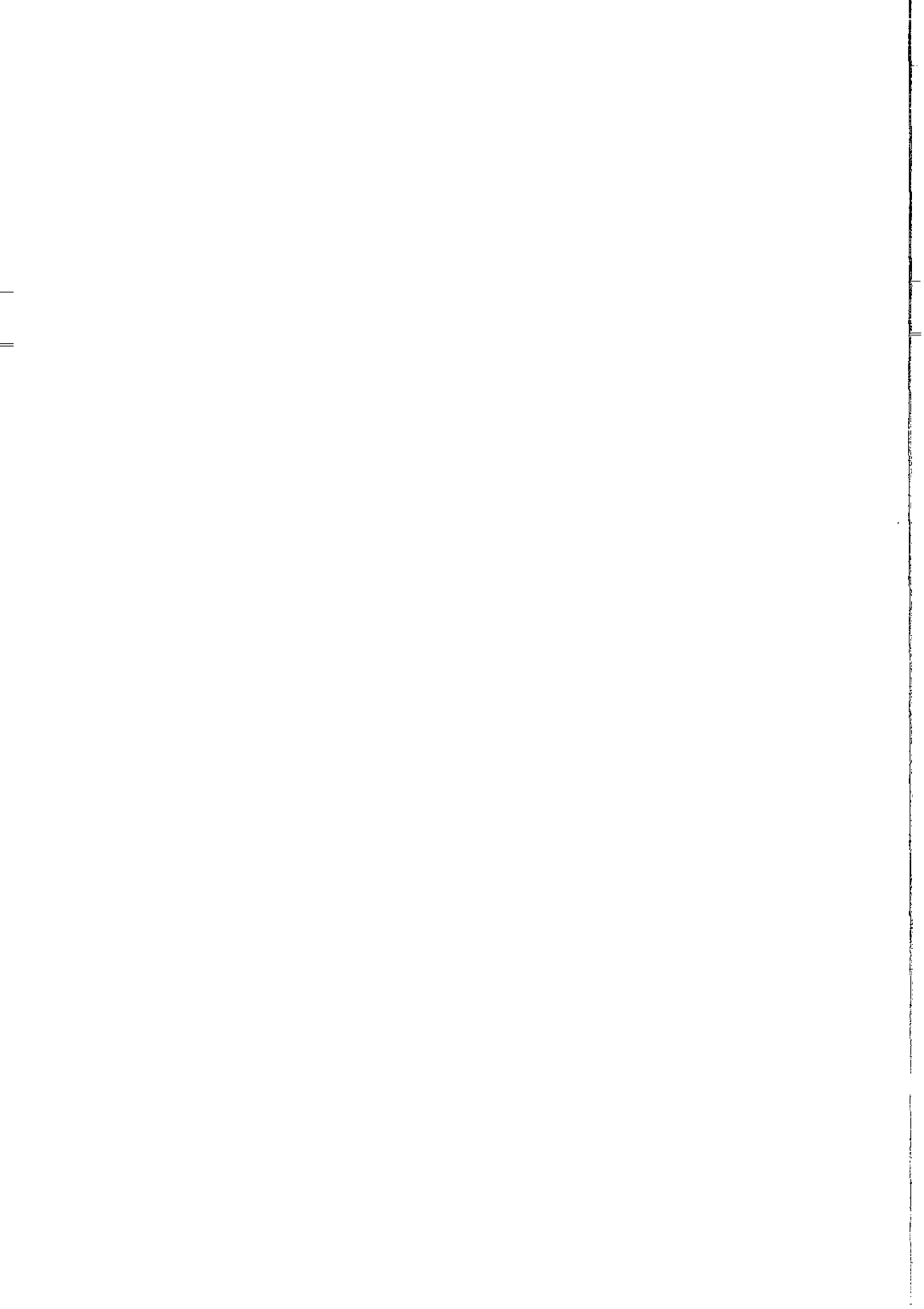
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The Nebraska Legislature: Policy Implications of Its Organization and Operation

8

Robert Sittig

The adoption of a nonpartisan unicameral legislature by Nebraska voters in 1934 increased the opportunity for distinctive policymaking in the state. This reform moved Nebraska to the forefront on many measures of legislative capability, such as structural simplicity, open deliberative process, and level of staff assistance. Yet, the Unicameral lags behind other states on other measures of legislative effectiveness and modernization. This is illustrated by inadequate compensation for legislators, insufficient winnowing of bills prior to floor consideration, and modest restraint of interest group activity. The uniqueness of the Unicameral continues to bring Nebraska attention. Although its organization and operation receive favorable evaluation, certain features require review and possible change.

Policymaking in American political institutions is assigned constitutionally to the legislative branch of government. Policy application and adjudication are the responsibilities of the executive and judicial branches of government, but these phases of the governmental process follow the initiation of policy by the legislature.

This chapter addresses policy initiatives and the ways in which they are handled in Nebraska's uniquely structured, single-chamber, nonpartisan legislature. Given this uniqueness, considerable attention will be given to comparisons of the legislative process in Nebraska and in other states. The performance of Nebraska's legislature will be evaluated, as well. Because all state policy must receive legislative approval, it behooves policy advocates to become familiar with the organization and operation of the Nebraska legislature. Additionally, those seeking to influence policy matters should be aware of recent changes and proposals to reform the Nebraska Unicameral.

Important Historical Events

The adoption of the initiated constitutional amendment by the citizens of Nebraska in 1934, providing for a single-chambered and nonpartisan legislature, set this state apart from all others.¹ These two institutional alterations left a distinct imprint on the proceedings of Nebraska's legislature in form and practice. The unicameral reform proposal was a product of the progressive movement, and was advocated by many Nebraskans in the early twentieth century. The nonpartisan feature, although urged by populist and progressive groups, was much more the handwork of U.S. Senator George Norris, who, during the late 1920s, breathed new life into the largely stalemated unicameral movement in Nebraska. He was the architect of the two-pronged, nonpartisan unicameral reform, and worked strenuously during the public phase of the 1934 campaign to get the amendment adopted.

Since adoption, these institutional factors have given a special character to the legislative process in Nebraska, and they contribute much of what is different about policymaking in this state, when compared with other states. Finally, the unicameral aspect of Nebraska's legislature is established so solidly that there is little question regarding its future. The nonpartisan aspect continues to generate persistent criticism from a variety of sources, and its future is somewhat less assured than that of unicameralism.

Institutional Changes Since Adoption

Since the adoption of the unicameral system, the most visible institutional changes have involved the terms of office, number of legislators, and length of session

for the legislature. The term of office was doubled (and staggered) to 4 years in 1962; longer terms are an everpresent pattern in elective posts at all levels of government. Next, the number of legislators increased from 43 to 49 in the midsixties as a result of political and judicial skirmishing over the need to remedy urban underrepresentation.

Increased urban representation resulted in reshaped legislative agendas and the adoption of many urban-oriented policy initiatives in state legislatures, including Nebraska. Another alteration of the formal machinery was the change to annual sessions in 1971; previously, nearly all state legislatures met only once every 2 years, but now, nearly all meet every year to review legislative proposals. The current organizational arrangement of the Unicameral seems firmly implanted despite occasional efforts, all unsuccessful, to alter it in some fashion (for example, return to biennial sessions, removal of the lieutenant governor as presiding officer, reintroduction of partisanship, and installation of a parliamentary system).

Internal Leadership Authority

The internal allocation of authority in the legislature, however, has been more subject to alteration. The current leadership positions include speaker, president, Executive Board, and Committee on Committees. These officers and bodies have undergone numerous shifts in duties, roles, and powers. Of greatest importance is the speakership, where a series of changes during the past two decades has brought this official to the forefront of the Unicameral. This is a major departure from the past; earlier, the Unicameral held to the principle that the legislative process should be as open and unstructured as possible. But, by the 1980s, the speaker had been

authorized to coordinate the committee system, to set the daily agenda, to designate a number of bills for preferential floor consideration, and, by practice, to serve as the presiding officer over floor deliberations despite the constitutional provision designating the lieutenant governor for this role.

Additionally, the last two speakers have overcome a tradition of noncontinuation in the office, and have been re-elected. It seems only a matter of time or circumstance until some speaker, through skill and effectiveness, becomes a long-term (perhaps career) holder of this office. Even with growth in stature, the primary source of influence behind other state legislative speakers--leadership of the majority political party--is not part of the speaker's power base. Regardless, the powers of the office have grown steadily in recent years.

Nearly the opposite is true for the president of the legislature, the lieutenant governor. Repeated attempts have been made since 1970 to reposition the office, but a final solution has evaded the reformers. The pattern in many states has been to team up the election of governors and lieutenant governors, to assign the second executive full-time administrative duties, and to reduce or eliminate their legislative role (table 1). The other

Table 1 - Legislative power of state lieutenant governors

Power	Number of states
Presiding officer	28 (including Nebraska)
Break tie votes	26 (including Nebraska)
Assign bills	16
Appoint committees	10

Source: Advisory Commission on Intergovernmental Relations, *The Question of State Government Capability*, Washington, DC, 1985, p. 9-5.

extreme is evident in six states where the office of lieutenant governor has been abolished. Some movement toward the team approach and a full-time administrative role for the lieutenant governor has occurred in Nebraska, but legal and political complications have stalled the process for the time being.

The Executive Board of the Legislature is composed of two elected officers, six regional representatives of the senators, the speaker, and the chair of the Appropriations Committee *ex-officio*. Their responsibilities are to supervise all staff personnel and to act on behalf of the legislature when it is not in session. Additionally, they assign bills and approve and assign studies concerning new policy questions to committees. This body can be considered an administrative entity rather than a policymaking unit, although this is not always true. For example, the number and assignment of legislative staff influence the substantive performance of the legislature.

The Committee on Committees has a small but important role in the organization of each new legislature, that of assigning legislators to committees. The body has an elected chair and twelve regional representatives who review requests for committee assignments and assign members within size and geographical constraints. Apparently, nearly all requests can be granted or adjusted satisfactorily because complaints about assignments are rare.

Staff Resources

The major recent physical change within the Unicameral has been in facilities and resources (offices and staff) provided to senators. Much of the impetus for this came from the increased time commitment required

of senators, which stemmed from the shift to annual sessions, and, to a lesser extent, the increased workload associated with interim studies of new and controversial issues by standing committees. This means that senators are on full-time duty about 6 months of the year and on call intermittently after the session for interim committee responsibilities and occasional special sessions. Accordingly, during the past 10 years, the senators have provided themselves, through the Executive Board, with individual offices near the chamber and two full-time staffers (one research, the other clerical) per legislator. This has been a major change in the legislature's staffing pattern, and it puts Nebraska in a group of ten states that assign year-around staff to individual senators; nearly all of these states have large populations (table 2). In a few states (not Nebraska), the legislators also have staffed offices in their home districts (Council of State Governments, 1986).

Table 2 - Staff assistance provided to individual state legislators, 1987

Level of assistance	States
	Number
Full-time professional and clerical	10 ¹
Some professional and some clerical	13
Clerical only	16
Secretarial pool only	11

¹ California, Florida, Massachusetts, Minnesota, Nebraska, New Jersey, Ohio, Pennsylvania, Texas, and Wisconsin.

Source: Alan Rosenthal, *Legislative Life*, New York, 1981, p. 207.

Of much longer duration is the Unicameral's divisional staff which provides support for legislators, committees, and leaders (such as, bill drafting, research, and recordkeeping). It has increased somewhat in number as the legislative task has grown and the length of the session has increased. Positioned between the divisional and senators' staffs are the standing committee staffs.

Committee staffing began about 20 years ago with the Appropriations (then Budget) Committee, and was gradually extended to all committees. The committee research staffs vary in number from one to ten, plus each committee has one clerical position. It would seem that the legislature, through its divisional, committee, and senatorial staffs which currently number about 250, is now better equipped to deal with the policy options they review.

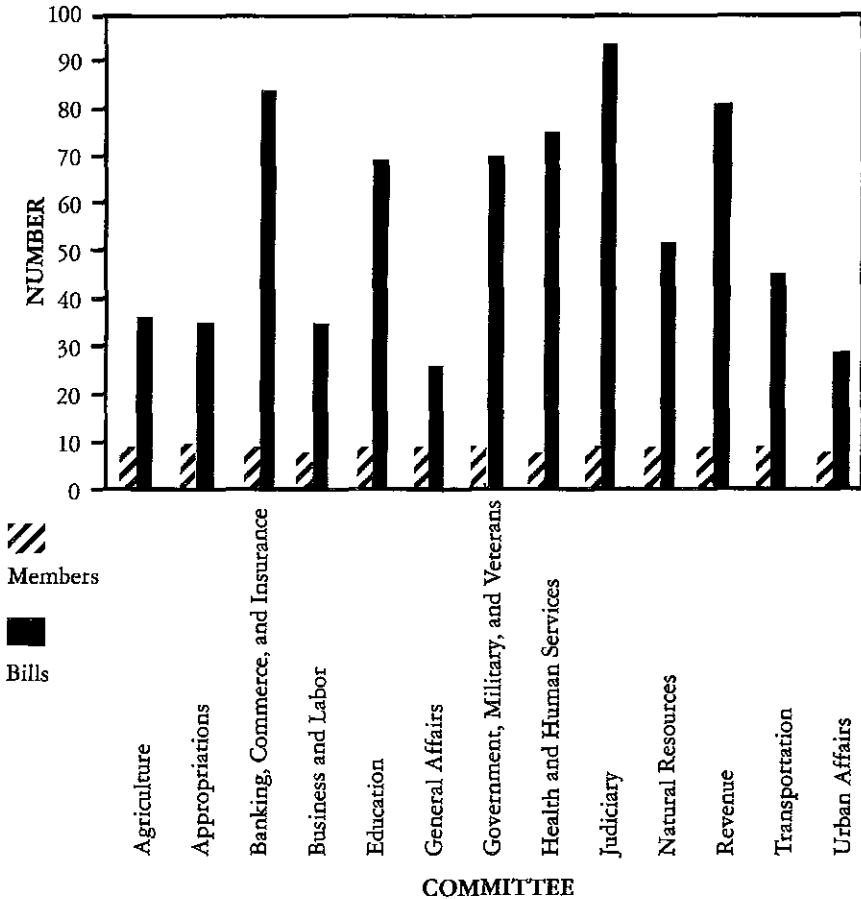
Legislative Process: Early Stages

The introduction of bills provides the legislature with its official business. Although only members may introduce bills, most originate outside the legislature. Bills are quickly assigned to committee according to their subject; for example, school consolidation to the Education Committee and control of irrigation to the Natural Resources Committee. The number of bills being introduced has climbed in recent years, and, given the constraints on session time (90 days in odd and 60 days in even years), the system is pressed to handle them in a timely and efficient way. A previous attempt to restrict the number of bills a senator could introduce proved to be unworkable, so other remedies have evolved. The most recent is the ranking of bills by senators, committees, and the speaker.

Committee Organization and Operation

The standing committee arrangement in the Unicameral is moderately complex, with thirteen committees having from seven to nine members each (figure 1). The number and size of committees have been quite stable since the 1950s, although there have been periodic adjustments of committee titles,

FIGURE 1
Standing Committees of the Nebraska Legislature, 1987



jurisdictions, and workloads. The most recent adjustment came in 1986, when one committee was abolished, another divided, and two others retitled. These jurisdictional changes are difficult to initiate because they entail the shifting of arenas (but not senators) where preliminary decisionmaking occurs. Despite reluctance to make changes, the legislature coordinates its policymaking structure with the executive branch, as the state government policy agenda evolves.

Each committee is headed by a chair who presides at committee meetings and generally directs committee activities. Since 1973, these leaders have been elected in floor votes (all are eligible to run) when a new legislature organizes. Those selected must be approved every 2 years. While partisan and seniority factors predominate in the selection of committee chairs in other state legislatures and the national congress, these factors are only slightly important in Nebraska. For example, the unofficial partisan lineup in the chamber in 1987 showed a slight Republican majority (25 Republicans, 23 Democrats, and 1 Independent), yet seven of the thirteen committee chairs elected were Democrats. The qualifications required of first-time chair candidates and those seeking re-election include, prior service on the committee for aspirants and support from those who served on the committee for former chairs. In only 6 of 58 instances has a committee chair been defeated from 1973 to 1987, and in about three-fourths of the cases, chairs who sought re-election faced no opposition. This indicates the evolution of leadership stability in these bodies, and contrasts with the system used prior to 1973, when appointments resulted in wholesale changes from one legislature to the next.

Senators are assigned to committees after presenting their requests to regional caucuses of the Committee on

Committees. The assignments need to coincide with size and geographical constraints that are intended to make each committee reflective of the entire body, and, thus, representative of the entire state. The geographical factor is perhaps the more important one; standing committees normally have two legislators from each of four regions of the state (far west, north central, south central, and Omaha metro).² This builds a geographical dimension into committee structure and decisionmaking. In other states, partisan and seniority factors weigh much more heavily, sometimes absolutely, in matters such as allocation of seats on committees and committee assignments.

Given the rarity of committee chair losses, tenure of chairs and committee members has been increasing steadily. In the absence of complicating factors, such as chairing a committee to which the senator has not been assigned or filling the speaker's post (which precludes any committee service), about three-fifths of re-elected senators remain on the committees they were assigned to in the previous legislature. This is evidence that members prefer serving on a committee rather than transferring and broadening their policy perspective, an attribute of considerable importance, but apparently less so than policy specialization.

Committee Influence

Research indicates that the legislative committees, in Nebraska and elsewhere, are making the definitive decisions on legislative proposals.³ It seems that the floor of the legislature is where decisions ought to be made in deliberative assemblies. This is the case, to an extent, because in order for proposals to become law, they must be approved by a legislative majority.

However, before they can move to the floor for consideration, they must clear the committees to which they are assigned.

Once assigned, bills must be scheduled for a public hearing in Nebraska, a step which is optional in every other state but North Dakota. Next, they are debated in a closed executive session (media representatives may attend and relate the discussion and votes to the public). Then, bills must be reported.

A favorable report by a committee majority sets in motion the process leading to final enactment. Thus, as few as 4 or 5 legislators in a body of 49 nearly control the fate of bills assigned to the committees on which they serve. Favorable committee reports have averaged as high as 71 percent (1973) and as low as 57 percent (1983) in recent legislative sessions. These are ratios that are somewhat higher than those in the typical state legislature (table 3). The trend is toward fewer bills being reported favorably, another indication of growing committee influence.

Favorably reported committee measures are often sent to the floor with suggested changes or amendments. These amendments are considered first on the floor; other (outsider) amendments can be offered later, but they require more votes to be adopted. Thus, committees

Table 3 - Percentage of favorable committee reports, selected states and years

State	Percent
Alabama (1977)	67
Nebraska (1983)	57
14-state average (1967-77)	48
Connecticut (1967)	27

Source: Alan Rosenthal, *Legislative Life*, New York, 1981, p.199.

are afforded the best opportunity to shape the final version of bills that they find suitable for enactment.

Another test of committee effectiveness concerns bills that fail to clear the committee because of a tie vote or because a majority of the committee members opposes them. Because all assigned bills must be reported, tie or negative votes, once reported, set the stage for a possible overrule of the committee decision. This is one procedural check legislative bodies have over committees.

In Nebraska, a bill with a negative recommendation can be revived if 30 senators vote to do so; a bill stalled on a tie vote requires 25 supporters. Potentially, committees could be overruled this way dozens of times each session. Actually, they are rarely overridden.

In the 1987 session, many disgruntled senators complained after bills they sponsored were stalled or killed, but they attempted to dislodge or revive only four of them. Committee decisions were sustained with one exception. Recently, other sessions had similar records. Negative committee decisions on major bills are rarely overturned. Thus, committees in the Nebraska legislature each review 25-100 bills each session with confidence that their decisions, even negative ones, will be final.

Another indication of the increasing influence of committees is evident from a recent study of the relationship between bill viability and the timing of public hearings. Nearly all bills come to committees within the first 10 days of the session, and, because only a few can be heard each day (normally two to four), the time at which a bill is heard and reported makes a difference.

The study revealed that bills positioned for an early hearing (first 30 days) were four times more likely to be enacted than those heard late (last 14 days) in the

schedule during the 1986 session (Nebraska Legislative Council, 1986). This shows that analysts must probe beyond the formal rules and procedures to discern when, where, and by whom the critical decisions are made in public bodies such as legislatures. Thus, the scheduling of public hearings might seem to be merely a procedural matter; however, in 1986, it was a significant indication of a bill's chance for enactment into law.

Legislative Process: Final Stages

Once favorably reported, bills move to the floor and through it via a series of calendars and priority designations. Early in the session, during half-day committee and floor schedules, the least controversial measures are handled with a minimum amount of debate or discussion. Measures which generated little or no criticism during the committee phase are unlikely to encounter opposition on the floor. These measures often clarify or refine laws, and they move speedily through the required floor tests: General file, where most debating and amending occurs; select file; and final enactment. For example, in the 1985 session, the legislature gave final approval to more than 20 bills in one morning, and all but one passed unanimously (and it had only one negative vote).

Of greater challenge to the legislature's deliberative capacity are measures that clear committees on a divided vote due to persistent differences of opinion. They include as many as 20-40 of the 500-700 bills considered each session, and they tax the resources of the legislature and its leaders considerably.

The Nebraska legislature features nearly unparalleled openness at every stage of the process. Among American legislatures, one study found that Nebraska

was one of the best examples of decentralized institutional authority (Rosenthal, 1973). Thus, legislators are able to confront with ease bill managers and supporters if they choose to do so, and many do. The proponents must then decide, usually on the spur of the moment during heated floor debate, whether to accede to critics and amend the measure or continue to push their bills along over repeated attempts to amend, postpone, or defeat them. In the end, about 100 of these more controversial measures pass through the legislature. Many pass only after the most privileged of all bills (the appropriations bill which funds the programs and agencies of state government) clears the calendar.

Beyond the agency spending bill rests another 150-200 committee approved bills, and it is here that the legislature strives to align them for floor consideration. Realistically, not all can be accommodated, and because political party discipline is absent and the designated floor leader (speaker) is not empowered to designate priorities, an alternative system evolved. Thus, each senator, at about the midpoint of the session, may designate one bill as a priority measure. Priority bills have special standing on the floor calendar; similarly, each committee can designate two bills and the speaker as many as 25. The legislature, in 1981, devised this practical but rather arbitrary solution for a persistent problem.

Within this circle of priority bills are some that enjoy another political advantage because they come recommended by important outsiders, such as the governor, major private interest groups, or state administrative agencies. The impetus behind these bills ensures, no doubt, that they will be considered on the floor regardless of the scheduling system used by the legislators.

Final Enactment and Gubernatorial Action

Bills that receive majority approval after debate and possible amendment during two preliminary stages, and are read and approved a third time, have nearly made it into law. Next, they are sent to the governor for approval or rejection, in full or part.

Nebraska's governors possess slightly higher than average formal veto powers, but like their counterparts in other states, they have learned that it is more effective to involve themselves early in the legislative process if they do not support a measure or some aspect of it. Vetoing can be the least effective way to change a legislative proposal, because it complicates the negotiating or compromising process that accompanies most executive-legislative interaction.

Still, Nebraska's governors have occasionally resorted to their veto powers. The number of vetoes varies greatly, but averages about 12 per session, a rate somewhat higher than in other states. In 1987, Governor Orr vetoed 19 bills or appropriations items, while former Governor Exon vetoed a record 31 measures in 1973, and former Governor Morrison did not veto a single bill in 1963.

Legislative overrides are possible on all vetoes, but they require a three-fifths majority vote, and the legislature, in most instances, is unable to muster the needed level of support. In 1987, the legislature overrode the governor 5 times, but in each instance the effect (on money or policy) was minor compared with the vetoes that were accepted or sustained.

In recent sessions, the governor has made major reductions in spending measures through line-item vetoes, and the legislature has restored some, occasionally much, of the reductions. No single statement can relate how the

legislature responds to executive vetoes, but the governor is much more often sustained than overridden, both on substantive policy enactments and on spending and appropriations items.

Citizen Lawmaking

Nebraska is one of about twenty states that allows the citizenry to respond directly to legislative action or inaction using two direct democratic tools--the referendum and the initiative, both adopted in the early 1900s. The referendum power allows citizens to repeal any law, and it is triggered by petition signatures equal to 5 percent of the vote cast in the previous election. If the signers number 10 percent, a new law is postponed until the voters determine its fate. The use of the referendum has been episodic over the years. In just over half the instances (8 of 14), the referred measure has been rejected by the voters.

The initiative represents another restraint on the legislature; it is based on the premise that the legislature is reluctant or unwilling to act on some matters of public concern. In this circumstance, the petitioners must accumulate signatures that are equivalent to 7 percent of the vote cast, and then the measure is put on the ballot for popular approval or rejection. In only 2 of 11 instances when this device was used did the voters accept the petitioners' proposals.

In Nebraska, the record is mixed regarding the impact of the legislative initiative and referendum. Both devices have been implemented occasionally. The voters often side with the petitioners on referred laws (especially if they deal with tax increases or more spending), but rarely support petitioners who advocate new legislation using the initiative.

Summary

Given the range of legislative outcomes (from speedy enactment to casual rejection) for bills in the Nebraska Unicameral, it may be helpful to categorize the fates of bills. The simplest to describe are the few dozen noncontroversial bills that remedy or clarify some aspect of current law. A measure is drafted, introduced, and referred to committee; an early hearing is held with perhaps only the bill's introducer appearing; it is promptly given a favorable report, moves through the various floor stages without opposition, is enacted, and the governor signs it into law.

At the other end of the spectrum are measures that engender controversy from start to finish; in a typical session they number from 20 to 40 bills. There may be a dispute about which committee should receive the bill; the public hearing tends to be long and spirited, with repetitious claims and charges regarding the bill's merits or demerits. A divided committee forwards it to the floor after a review of the various options. On the floor, the committee amendments, as well as others, are considered in order to refine the measure and win over some of its detractors. The bill advances after strenuous debate, and is enacted over the objections of many opponents. Finally, the governor signs the bill, but voices some disagreement with certain provisions.

Between these extremes are about 200 other measures which proceed, some haltingly, others steadily, through the committee tests and floor hurdles.

The following are examples of each type of bill introduced in the 1987 session of the Unicameral. Early in the session, a measure allowing school districts to establish lines of credit with financial institutions (LB 147) was enacted unanimously before the session was 3

weeks old. Another issue (petition requirements in the initiative and referendum processes (LB 716 and LR 188)) was discussed often in and out of committee; eventually, it was sent to the floor with the understanding that it would be studied during the interim and acted on during the next session. A controversial measure was discussed throughout the session--liability insurance limits (LB 425). Disagreement erupted regarding the committee to which it should be referred (judiciary or banking); it became stalled after the public hearing, and it remained in committee throughout the session, despite numerous indirect attempts to force it from the Judiciary Committee. Its prospects for the next session are difficult to assess.⁴

An example of midstream executive-legislative compromise occurred over the bill separating the federal and state personal income taxing systems (LB 773). When the measure appeared to be in some jeopardy, the governor and Revenue Committee members compromised on some of its provisions. The reworked support base was sufficient to ensure its enactment, despite persistent opposition on the floor by a few senators.

An example of a reverse strategy took place with a measure to continue a diversion of some tax revenues on auto sales to the general treasury from the highway trust fund (LB 470). The same leaders (Revenue Committee members and governor) advocated its adoption, but recanted after significant opposition formed inside and outside the legislative chamber.

The common factor in these examples is the extent to which controversy, real or latent, envelopes legislative proposals, and, once it emerges, the way in which it is dealt with by the bills' advocates. Strategies vary widely for dealing with opponents. Attempts to allay them are no doubt always considered. Acceding to opponents'

criticisms and altering a proposal in a basic way is a crucial decision because it could speed the measure toward enactment or, conversely, make it unlikely, or impossible, for the proposal to maintain the majority support needed to advance in committee and on the floor.

Thus, the management of conflict is the major challenge and opportunity the sponsors and advocates of policymaking proposals face in the Nebraska Unicameral. The absence of political parties and a second chamber in the legislature changes the nature of the challenge. On balance, it is somewhat easier for proponents, given the minimal structural and partisan constraints in the Nebraska Unicameral.

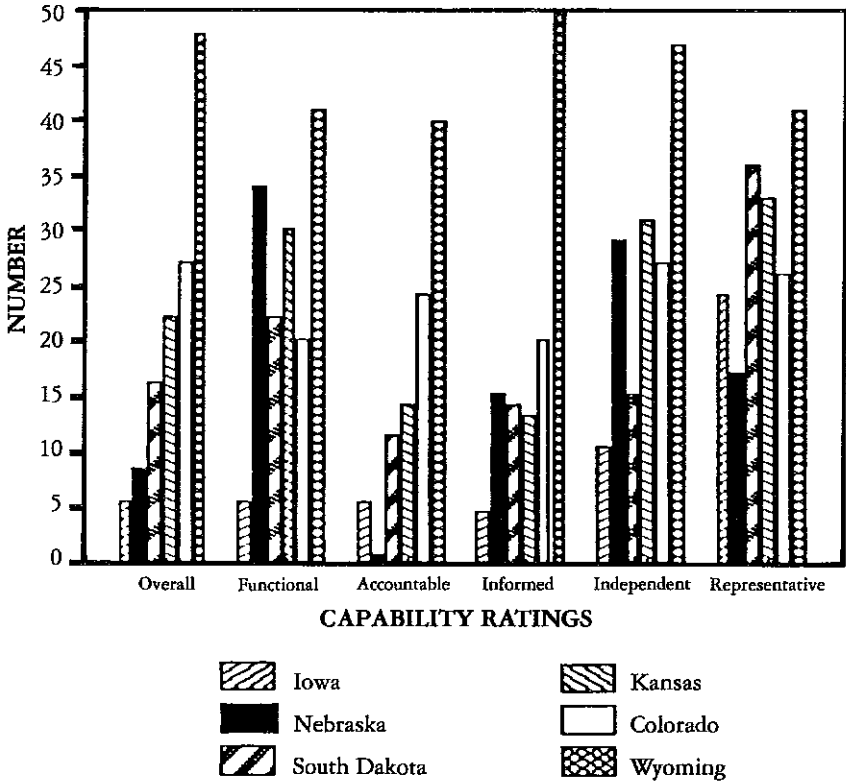
Evaluating the Unicameral

In the early 1970s, a citizen reform group examined all state legislatures to measure their capabilities (figure 2). The Unicameral was rated ninth in the country and much of the high rating stemmed from the simplified structure and procedure inherent in unicameralism. More recently, the Unicameral has been evaluated by the public through polling devices, and the ratings assigned are slightly favorable and somewhat higher than those achieved by legislatures in other states.

Senator Norris promised the citizenry that the reform would improve legislative performance. Norris' goals are restated, and table 4 shows the extent to which they have been achieved.

Norris believed that an effective legislature should be small in size, provide members a long term of office, compensate them for full-time service, and be chosen on a nonpartisan ballot. Norris also urged that the legislature's bill deliberation process be open and

FIGURE 2
 Capability Ratings of Selected State Legislatures



Source: Citizens Conference on State Legislatures, *The Sometime Governments: A Critical Study of the 50 American Legislatures*, (2nd ed.). Kansas City, MO. 1973.

unstructured. He was opposed to delegation of bill review powers to the committees or officers, and he recommended that all bill votes be recorded and publicized. He thought these changes would provide representatives and a system that would best allow the public's interest to be pursued.

Table 4 - Extent to which Norris' goals have been achieved in the Nebraska Unicameral, 1987

Goal	Achievement ¹			
	Fully accepted	Nearly accepted	Some disparity	Wide disparity
Chamber:				
Open-floor process		---->X		
Weak leaders/committees			---->X	
Curtail special interests				---->X
Eliminate secrecy		X---->		
Legislators:				
Small number	X<---			
Full-time compensation				---->X
Long term in office	X<---			
Nonpartisan selection		---->X		

¹ Arrows indicate the historical direction of change.

Which of Norris' goals have been realized? The nonpartisan selection of a small number of legislators serving a long term has become a reality, especially since the term was increased to 4 years. Originally, Norris preferred a body of 25, but later agreed to a minimum of 30 and a maximum of 50, as stipulated in the proposal. When the size was set at 43, and later raised to 49, seemingly, he would have dissented. The nonpartisan feature continues to draw criticism from most political party leaders and some outside evaluators; conversely, support for the nonpartisan system remains very high among senators and the public.

The greatest variances between Norris' plan and current practice are the influence of lobbyists and the compensation of legislators. The impact of lobbying is especially difficult to measure, but studies indicate that Nebraska is a strong lobby state, one where both the potential for and activity of lobby groups is comparatively high. The reasons for this include: The lack of a diversified economy, weak political parties outside the legislature and their absence inside it, and the

relatively low level of citizen involvement in state governmental activities. Legislative salaries continue to veer from Norris' ideal; since 1968, the voters have rejected nine proposals to increase legislators' compensation. Originally, legislative salaries were commensurate with their time commitment.

Moderate departures from Norris' recommendations are evident within the chamber. Floor procedures are somewhat more controlled now than they were, and the standing committees and the speaker have watched their roles increase. Senators have chosen to delegate increased powers to the committees and leaders, despite Norris' admonitions.

Overall, the Norris legacy remains intact in the Unicameral. Certain of his ideals seem to have become unrealizable (such as, tight control over the special interests) or unattainable (such as, high compensation for legislators). It is in these areas that the legislative reform agenda in Nebraska is most in need of review, assessment, and possible remedial action.

Endnotes

1. Unicameral legislatures at the state level were in occasional use until the 1840s when Vermont adopted a bicameral system. All states used bicamerals until Nebraska's change to unicameralism in 1934. The Minnesota legislature was, by statute, a nonpartisan body for many years, but the lawmakers switched to a partisan arrangement in 1971 after an extensive system of unofficial partisanship evolved in the election, organization, and operation of that body. (Mitau, 1960).
2. Occasionally, the geographic pattern is deviated from on certain committees. Senators from urban areas are disinclined to serve (or stay) on the Agriculture Committee, and rural senators react similarly to the Urban Affairs Committee. Senators with approval can exchange posts. This means the regions lose or gain some committee representation. More inexplicable is the presence of only one Omahan on the important Revenue Committee in 1987, whereas four are on the equally important Judiciary Committee. (*Omaha World-Herald*, 1987).

3. A national sampling of state legislators showed that most decisions are made at regular committee meetings (39 percent). (Uslaner and Weber, 1977).
4. Bills that have not been enacted in the first session carry over to the next session in each 2-year legislative cycle.

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