An Evaluation of Regionalizing Rural Transit Systems in North Dakota

by:

Jill Hough
and
Gene Griffin

Upper Great Plains Transportation Institute
North Dakota State University
P.O. Box 5074
Fargo, ND 58105
(701) 231-7767

August 1997

Acknowledgment

This report has been prepared with funds provided by the North Dakota Department of Transportation (NDDOT), Federal Transit Administration, and the United States Department of Transportation to the Mountain Plains Consortium (MPC). The MPC member universities include North Dakota State University, Colorado State University, University of Wyoming, and Utah State University.

The authors would like to thank the North Dakota rural transit managers for participating in this study by attending meetings and responding to questionnaires. Thanks are extended to Ermadel Ludwick, *Great River Bend Services, Inc*., Davenport, Iowa; Rose Lee, *Rides*, Spencer, Iowa; and Kevin Kramer, *North Iowa Area Council of Governments*, Mason City, Iowa for their personal interviews which added insight into transit regionalization/coordination. Thanks is given to Lowell Richards, South Dakota Department of Transportation and Rick Thoms, *Souris Basin Transportation Board* for their insight into regionalization.

In addition, thanks are extended to Mike Heger and Shawn Birst of the Upper Great Plains Transportation Institute for compiling the databases used in this study.

AN EVALUATION OF REGIONALIZING RURAL TRANSIT SYSTEMS IN NORTH DAKOTA

Jill Hough and Gene Griffin

ABSTRACT

Several states have been moving toward a coordinated approach to transit as a result of the federal government's prompting. Coordination is believed to increase the transit services offered and increase the service area covered. The state of Iowa was on the forefront of coordination efforts in the 1970's and initiated a regional approach to coordinate all transit services throughout the state. Iowa still maintains a regional approach to transit. It is proposed that North Dakota adopt a similar regionalized transit effort.

Transit needs within North Dakota were examined through demographic data and results from a ridership survey. The population distribution of seniors and individuals with mobility limitations exemplifies the need for transit services throughout the state. Further, transit riders indicated that they would like longer hours and more days of service. Performance measures indicated that coordinated transit systems performed more effectively than non-coordinated systems.

North Dakota transit managers were given an opportunity to state their perceptions of coordination's impact upon their customers, community, and transit systems. Manager perceptions were mixed. They believed that coordination would not necessarily result in greater allocation of resources, yet all do believe that coordination would increase the transportation services provided for their community.

Nearly 70 percent of North Dakota counties are presently participating in some level of coordination. It is believed that a coordinated/regionalized approach for all counties in North Dakota

would increase the services provided for customers, resulting in a better allocation of limited resources.

TABLE OF CONTENTS

LIST OF TABLES

Table **Page**

LIST OF MAPS

Map **Page**

CHAPTER 1

INTRODUCTION

Rural passenger transportation is an important part of rural life for many North Dakota residents. Many of the rural transit riders are elderly, disabled, and/or have low incomes, making them partially or totally dependent upon public transportation for access and mobility. North Dakota's low population density and vast land area create unique challenges for rural transit systems. Essentially, low population density translates into a small tax base. The lack of tax revenues means fewer funds are available for subsidizing rural transit operations. Moreover, low population density also translates into low farebox revenues relative to costs, as transit costs per passenger are high due to long distance trips.

Several emerging trends suggest that providing rural transit services will become more challenging in the future. One trend is the continued increases in the age of the rural population. Advances in medicine and a declining birth rate are resulting in an aging United States population. In 1960, only about 13 percent of the U.S. population was above age 60. In 2020, it is estimated that nearly 25 percent of the U.S. population will be over 60 years old (Journal of Geriatric Psychiatry). Another trend in North Dakota is the continued out migration of young rural residents to urban areas. This out migration affects transit in two ways. First, the state's out migration reduces the tax base which leads to limited funding for transit in rural areas. In addition, the out migration means fewer younger family members will be available to provide transportation to aging family members.

Another trend to watch is the federal government's involvement in rural public transit. The federal government has had a long involvement in public transportation. Changes in administration and

transportation policies influenced transportation in the past and will continue to influence it in the future. The direction of federal policy has been toward coordination of transit systems. Coordination occurs when transit systems work together to meet needs of transit riders in a cost-effective consumer responsive manner. The process may include pooling resources, sharing information, or consolidating their systems.

In 1977, the U.S. General Accounting Office estimated that there were 114 federal programs funding transportation services. Many of these programs were state-administered health and human service programs which provided transportation for clients to and from a point of service or relied on transportation services provided through another federal program (Greene). Congress took the view that too many federal programs funding transportation services existed and acknowledged a need for coordination among the programs. In 1978, Congress amended transit legislation UMTA-64 which created the Section 18 and 16b2 programs. Applicants for Section 18 funding were required to show how their public transportation service would coordinate with other transportation providers (Greene). The Office of Human Development Services of the U.S. Department of Health and Human Services reported that by 1981, over half the states had "made considerable progress" in taking steps toward coordination.

The state of Iowa participated in a federal demonstration project which was initiated in 1976 to coordinate the transit systems. Iowa participated in the demonstration project with the goals of using resources more wisely and efficiently due to the energy crisis in the late 1970s and also to better service their elderly, youth, and persons with disabilities with accessible transportation. In 1976, the 67th General Assembly amended Chapter 601J of the Iowa Code. The amendment required that any

organization spending public funds to purchase or provide passenger transportation services, other than school transportation services had to be in compliance with the state transit plan. That plan proposed that all funding for transit services be channeled through a limited number of urban transit systems or regional transit systems designated by local officials (Hallock). It is 21 years later and Iowa still maintains a regionalized effort for transit.

More recently, South Dakota has embraced the coordination process. Although there has been no state mandate to coordinate, it is encouraged by the state department of transportation and the Governor's Office. The state has reduced the number of lead transit systems applying for Section 18 funds from 16 to 10 and plans to reduce the lead systems further to 8. Meanwhile, service has expanded from covering 42 counties to 67 counties. According to Lowell Richards, transit official with the South Dakota Department of Transportation, coordination and regionalization seem to be working well, and are the trend in South Dakota.

Current and Future Federal Transportation Policy

Future federal transportation policy is uncertain. The current, but soon to be outdated legislation, Intermodal Surface Transportation Efficiency Act (ISTEA) had called for: 1) A reduction in transit's dependence on the Federal General Fund, and an increased focus on user-based financing; 2) Increased attention to the efficiency of transit systems, and application of cost-effectiveness standards to transit that receive federal assistance; 3) Increased reliance on the states in the funding of transit; 4) Increased concentration on enhancing mobility in rural areas; 5) Increased flexibility in the use of federal funds; 6) Coordination of transit programs between agencies (to eliminate duplication) and with other

modes such as airports, highways, and intercity rail services (to improve intermodal connections); and 7) Encouragement of private participation in transit and coordinated efforts with private business and community groups. The trends in transportation policy suggest that North Dakota's transit systems will need to provide more services with less resources in the future.

North Dakota Transit Services

Currently, North Dakota has 47 transit systems providing service throughout all 53 counties within the state. Each of the 47 transit systems receive state transit aid and 33 of these systems also receive federal transit funds. Each transit system receives a different level of financing based upon factors such as population and size of service area. Each transit system covers a different size service area. Several systems cover multiple counties while others focus on specific cities within one county. Some communities/counties do have duplication of services. A regionalized transit system would minimize any duplication of services while providing services where they are in demand.

The level of service each transit system provides varies. Forty-one of the transit systems offer demand responsive services for the residence of their service area while 37 transit systems have fixed route services on specific days or for certain hours each day. Most of the transit systems have regular day-time hours while some systems do offer 24 hour services.

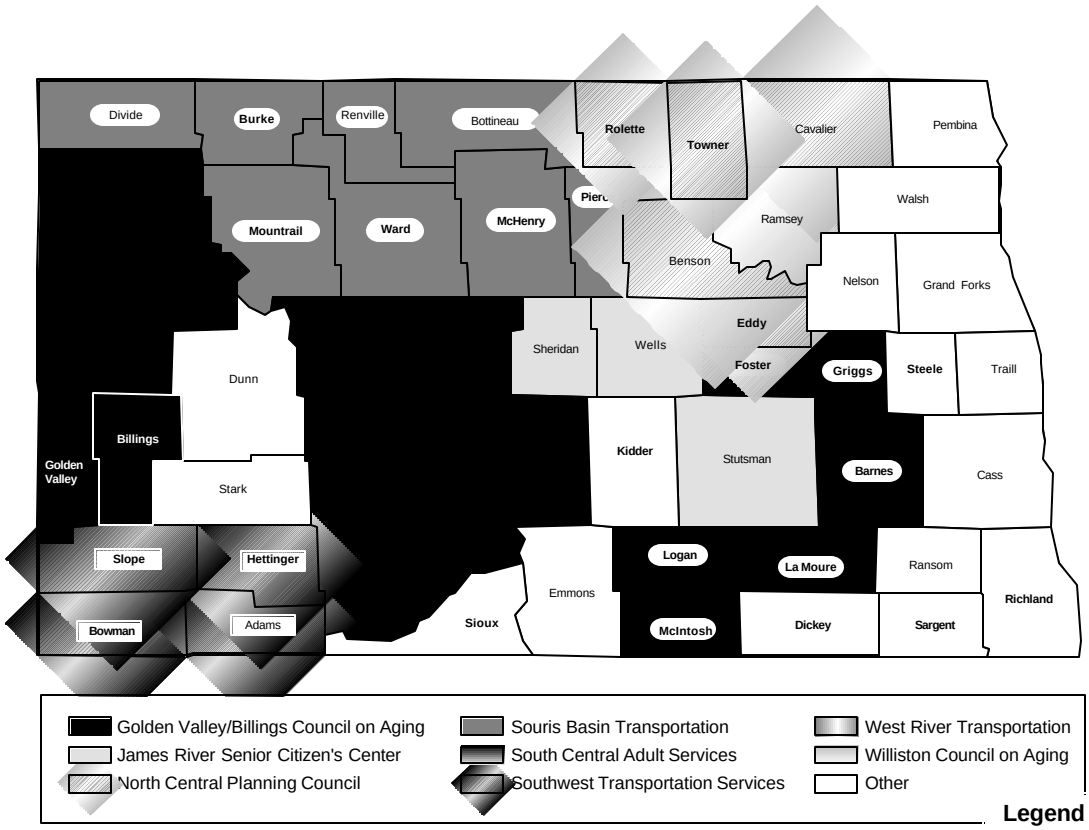
Thirty-seven counties or nearly 70 percent of the 53 counties in North Dakota are involved in some level of organized coordination. These transit systems are located in close proximity, have developed a relationship, and have pooled resources to better meet the needs of residents within their service area. Map 1.1 illustrates that North Dakota already has eight coordinated, regionalized blocks.

Souris Basin, West River, and North Central Planning Council have the most regionalized approach to providing transit services in the state. Souris Basin has eliminated county boundaries allowing travel among all counties without restrictions (Thoms). However West River, even though it is regionalized, still has restrictions between counties and communities. There are several other counties in which coordination would likely increase the services available to current and potential transit riders.

OBJECTIVE OF THE STUDY

The primary objective of this study is to evaluate the potential for North Dakota to regionalize their rural transit systems. The specific tasks of the project are to:

1. Identify transit systems/services in North Dakota.
2. Identify transit needs in North Dakota.
3. Evaluate unmet transit needs in state.
4. Examine models of coordinated transit systems.
5. Make recommendations on regionalization and coordination of transit systems in North Dakota.



Map 1.1 North Dakota Regionalized Transit Systems

REPORT ORGANIZATION

The remainder of this report is divided into three parts. A description of the research method used to gather information on rural transit systems and evaluate the potential regionalization is explained in Chapter 2. The research results are discussed in Chapter 3.

Finally, recommendations with two scenarios for the regionalization of North Dakota transit systems are presented in Chapter 4.

CHAPTER 2

RESEARCH METHOD

The research methods used to examine whether North Dakota should coordinate/regionalize transit services are explained in this chapter. The information gathering phases occurred through special informational meetings, demographic databases, personal interviews, and mail questionnaires.

Special Information Meetings

Three special information meetings were held throughout the course of this study. A steering committee of eight transit managers was created and a special steering committee meeting was held in Bismarck, September of 1996. The meeting was held to inform the committee about this study and to facilitate transit discussion.

Second, a *Rural Transit Roundtable* meeting was hosted by the Upper Great Plains Transportation Institute (UGPTI) and the North Dakota Department of Transportation (NDDOT) in Bismarck, in November of 1996. All of the transit managers in North Dakota were invited. In addition, a representative from the state Aging Services Division was invited as well as state Department of Transportation transit and planning officials. Federal Transit Administration representatives from Washington, D.C. were also invited. In total, 20 people attended the meeting. The purpose of the meeting was to first inform the transit officials about this study which the North Dakota Department of Transportation was partially funding to investigate the potential of regionalizing the rural transit systems. The objectives and justification of the project were presented. The transit managers had an opportunity

to provide feedback on the project objectives. The UGPTI and the NDDOT asked transit managers to cooperate and assist in the data collection phase of the study.

A third meeting was held in April of 1997 in Bismarck to present preliminary results and recommendations to the transit managers. Once again, all of the transit managers and transit and planning NDDOT officials were invited to participate in the meeting. A discussion about the findings and recommendations was held at the meeting. Again, approximately 20 individuals attended the meeting. About one-half of the participants had a favorable view of transit coordination/regionalization while the other one-half were opposed to the idea.

Demographic Databases

Databases were compiled to gather information on the demographics of the population in North Dakota to evaluate the potential riders of the rural transit systems. The specific data collected included: county population over age 65, county population that is mobility limited, county population that is mobility limited and over age 65, hospital locations, home bases of transit providers, and the number of transit providers per county. The data were placed into the geographic information system *TransCAD*, in order to create a visual perspective in a map format.

Phone and Personal Interviews

During the course of this study, various phone conversations were held with transit managers and department of transportation officials. Three personal interviews were held with three transit

managers in Iowa during May 1997. Each transit system represented a different regional approach to transit. *Great River Bend Services* in Davenport represented an urban lead agency approach to regional transit; *Rides* located in Spencer, represented a rural lead agency approach; and *North Iowa Area Council of Governments* in Mason City represented a brokerage agency.[1]

In addition, phone interviews were held with Lowell Richards, South Dakota Department of Transportation, Air, Rail, and Transit Division; Ms. Cindy Johnson of Sweetwater Transit Authority in Wyoming; and Mr. Rich Thoms, Souris Basin Transportation Board, Minot, North Dakota. Each provided insight into the coordination occurring in their particular state or region.

Mail Questionnaires

During the course of this study, three mail questionnaires were used to gather information. One survey was designed for passengers of the transit systems and the other two were designed to gather information from the transit managers.[2]

The ridership questionnaire was designed to better understand the needs and perceptions of transit system customers. Transit managers received the survey approximately one week before the flood of 1997 impacted certain regions of North Dakota. The survey return time was extended by one week due to flood related inconveniences. Unfortunately, the flood may have reduced the number of transit riders during this time period, therefore reducing and possibly biasing the survey response rate.

---

[1]These transit models are explained in more detail in Chapter 3.

[2]Appendix A contains a list of North Dakota Transit Managers.

The response rate was 24 percent (Table 2.1) which most likely could have been improved under better weather conditions.

Bus drivers administered the survey to passengers riding the bus. Respondents were asked a variety of questions about the appeal of riding the bus, they rated transit services provided, and offered suggestions on changes they would like to see. Some demographic questions were asked to gain insight into the socio-economics of the survey respondents. One drawback to this survey was that only individuals already riding the buses provided feedback on ridership. Resources were not available to survey the population of potential riders to determine what would entice them to use the transit services available.

The second questionnaire was designed for and mailed to transit managers to gather general information about the transit systems in North Dakota. Managers provided general information on riders, types of trips provided, e.g., medical and shopping, fleet expansion during busy times, service area boundaries, coordination efforts, and service needs. There was about a 62 percent response rate to this questionnaire (Table 2.1).

The final survey was developed to better understand the transit managers' perceptions on regionalization and coordination possibilities for the North Dakota transit systems. This survey yielded a 53 percent response rate (Table 2.1). In the survey, transit managers were asked to rate the likelihood of specific pros and cons of regionalization/coordination impacting their transit systems, their customers, and their community. In addition, transit managers were given a

Table 2.1. Surveys and Response Rates

Survey Type	Number Sent	Number Returned	Response Rate
Ridership	2,500	618	24.0
Provider Information	47	29	61.7
Provider Perceptions	47	25	53.2

definition of a regional transit authority (RTA) and asked how beneficial RTAs would be for North Dakota. Furthermore, other types of regional coordination models were described. Managers were asked to identify which model would work best for their transit system. Space was provided for managers to identify and describe other types of coordination models. Each manager was asked to justify the model they selected. A map with proposed delineations of regional transit authorities was presented.[3] Transit mangers were asked to draw in alternative delineations and offer reasons for their suggestions. Finally, a question was asked about the need for incentives in order for regionalization / coordination models to be implemented. Managers were asked if incentives were necessary and if so, what incentives would be most effective.

[3]A copy of this map is presented in Chapter 4.

CHAPTER 3

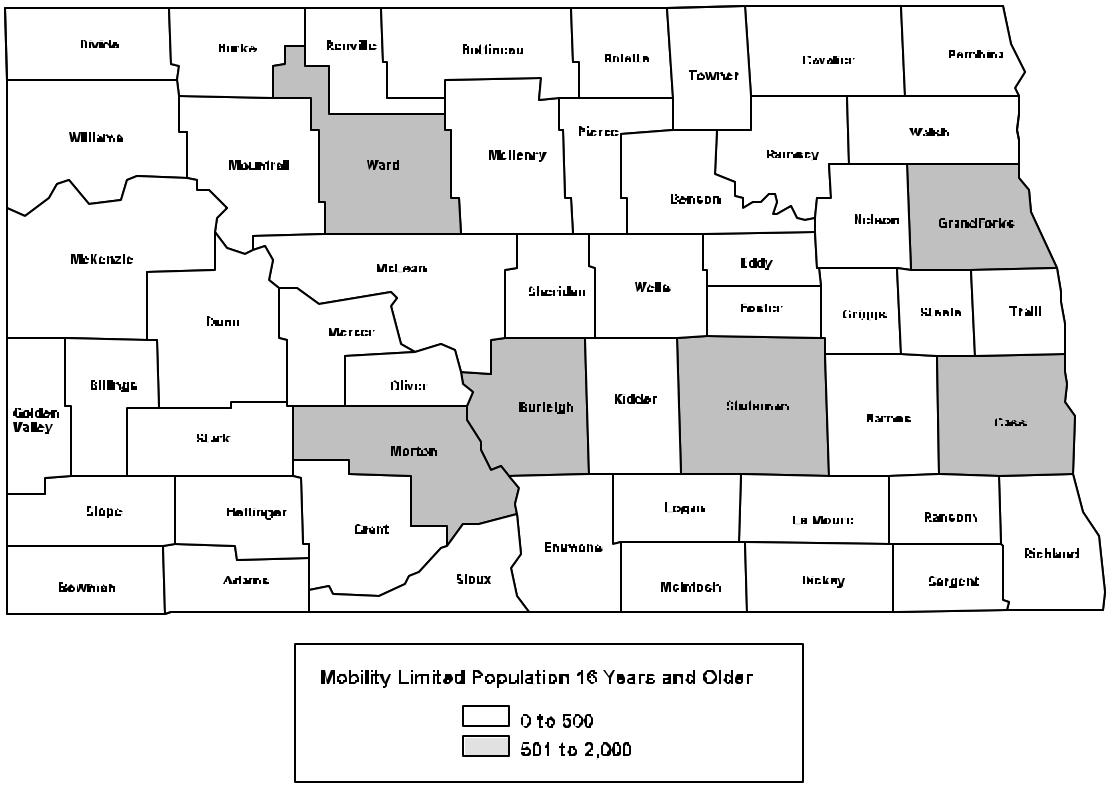
NORTH DAKOTA TRANSIT NEEDS & COORDINATION/REGIONALIZATION

The transit needs of North Dakota citizens are evaluated in this chapter. Demographic data and ridership survey responses provided the fundamental information to conduct this evaluation. Furthermore, the impact that coordination may have on meeting the transit needs within the state is addressed within this chapter.

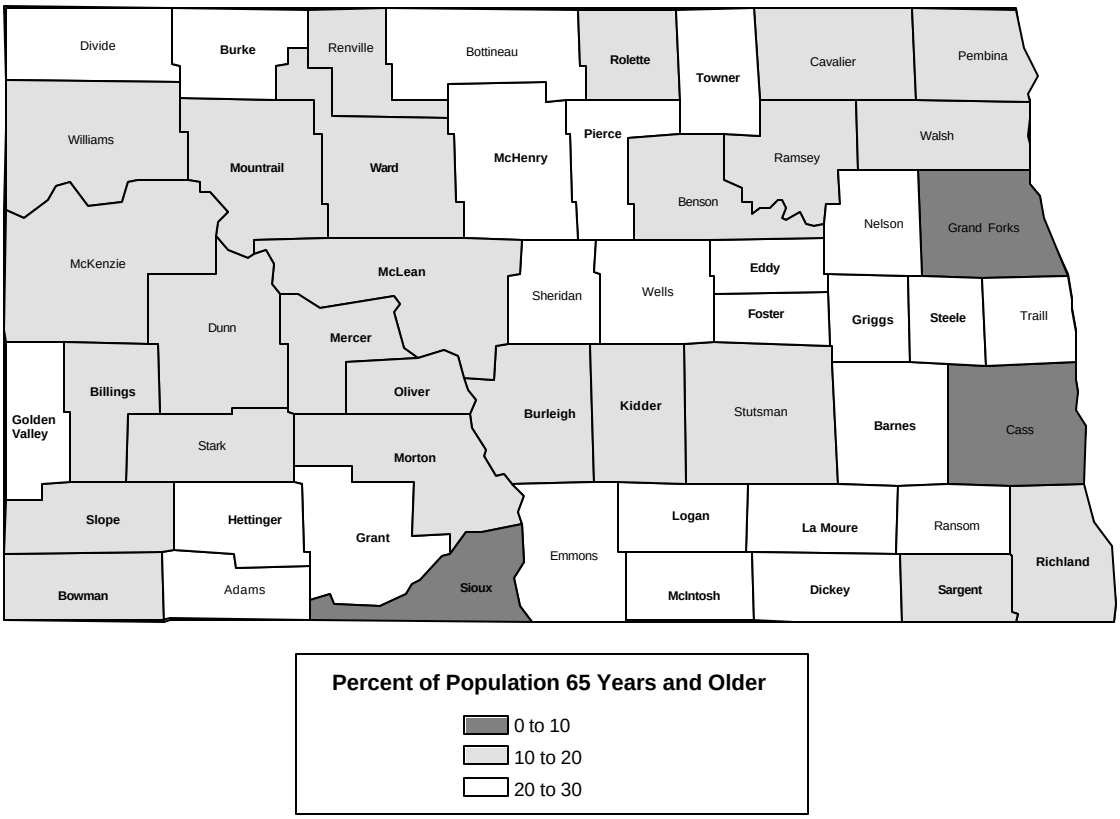
Select North Dakota Demographics

Individuals with mobility limitations and seniors (over age 65) rely on transit for mobility purposes more often than the general population. Currently, North Dakota has 13,460 people, or about 2.1 percent of the population ages 16 and older, with mobility limitations. The largest percentage of these individuals live within the larger, more urbanized counties of the state (Map 3.1). Therefore, most individuals with mobility limitations appear to have access to transit services.

Further census data reveals that North Dakota's senior population comprises 90,990, or 14.2 percent of the state's population. These seniors are dispersed throughout the state. Map 3.2 illustrates that urban counties such as Cass county and Grand Forks county have the lowest senior population base per capita within the state. This is actually quite surprising since many of the services demanded by seniors would be available within these counties, e.g., primary health



Map 3.1 North Dakota Mobility Limited Population 16 Years and Older, by County



Map 3.2 North Dakota Percent of Population 65 Years and Older, by County

care. The diverse locations of seniors increases the importance and need of transit throughout the state.

Ridership Survey

To further identify the transit needs within the state, a ridership survey was administered to individuals who most frequently use transit. The majority of transit riders (73 percent) responding to the survey were over age 55 (Table 3.1). Thirty-seven percent of riders earn under $10,000 annually and are more transit dependant than other riders that may be better able to afford a car (Table 3.1).

Table 3.1. Age and Income Level of Transit Rider Survey Respondents

Age	Percent	Income Level	Percent
18-24	2	Less than $6,000	22
25-34	4	6,000-9,999	15
35-44	9	10,000-17,999	24
45-54	8	18,000-24,999	6
55-64	6	25,000-34,999	4
65 plus	67		
Total	96	Total	71

Fifty percent of the riders take between one and four one-way trips per week (Table 3.2). Whereas, about 18 percent of the riders use the system more than nine times a week (Table 3.2). The

more frequent riders probably use the transit system to reach their place of employment (Table 3.3). However, the individuals who take fewer one-way trips use the services for equally important purposes such as shopping (56 percent), medical appointments (50 percent), or going to the senior center (23 percent) (Table 3.3).

Table 3.2. Number of one-way trips taken per week, percentage response

Number of Trips	Percentage Response
None	9.0
1-4	50.0
5-8	17.0
9-10	7.4
More than 10	10.4
Total	93.8*

*Not all respondents answered this question; therefore, the total does not equal 100 percent.

Overall, passenger time spent riding on the bus was less than expected, given North Dakota's vast distances between cities and service centers. Nearly 60 percent of the transit riders spend less than 30 minutes on one-way trips (Table 3.4). Approximately 16 percent of the respondents indicated that they would find an alternative route if travel time was increased. Keeping travel time to a minimum, while providing the best possible services, is an important factor when evaluating regionalization of rural transit systems.

Table 3.3. Purposes for Most Frequent Transit Rides in North Dakota

Purpose	Percentage Response
Shopping	56
Medical	50
Senior center	23
Employment	17
Recreation	14
Education	7
Other	14

Table 3.4. North Dakota Transit Riders' Approximate time spent traveling on one-way trips, Percentage Response

Travel Time	Percentage Response
Less than 15 minutes	26
15-30 minutes	33
30-45 minutes	10
46-60 minutes	13
over one hour	19
TOTAL	101*

* Total equals over 100 percent due to rounding.

Transit riders were asked to identify what changes or additions would be needed in transit services to increase ridership. The top responses illustrated the need for more services. The want or need most frequently identified was for buses to run on weekends (25 percent) (Table 3.5). The need for evening services and more destinations wase also mentioned frequently (Table 3.5). Each of these suggestions may be better met through regionalization and coordination of transit services.

Table 3.5. Changes or Additions Needed to Increase Transit Ridership

Change Needed	Percentage Response
Buses should run on weekends	25
Buses should run in the evening	18
More destinations	15
More frequent schedules	13
Improve on-time service	10
Bus stop closer to area	6
Shorter routes	5

Overall, transit riders did indicate that they believed the transit systems they were currently utilizing were doing a good job offering services. Passengers were most pleased with the courtesy of system employees and the ease of boarding or getting off the vehicles (Table 3.6).

Table 3.6. Ratings of Specific Services offered by Rural Transit Systems

Services	Poor	Fair	Good
	----------Percentage----------		
Courtesy of system employees	0	8	92
Ease of boarding or getting off vehicle	2	7	91
Organization providing bus service	2	11	87
Fare structure	2	12	86
On-time service	3	13	84
Condition of transit vehicles	3	14	83
Operating hours	3	17	80
Availability of information	3	17	80
Waiting time	3	18	79
Frequency of service	1	21	78

Performance of Coordinated and Non-coordinated Transit Systems

Would coordinated transit systems better meet the needs of transit riders? A study conducted by the Upper Great Plains Transportation Institute examined the difference in select performance measures between coordinated and non-coordinated transit systems in six states. The states included in the study were Colorado, Minnesota, North Dakota, South Dakota, Utah, and Wyoming. The performance of coordinated and non-coordinated transit systems was evaluated to determine if coordination efforts impacted the effectiveness of transit services provided.

Three levels of coordination were compared to detect if coordination made a difference in the performance of transit systems. The transit systems which participated in the study were categorized

into three coordination groups including: 1) Systems that participate in minimal efforts of coordination referred to as cooperation; 2) Systems in a joint/consolidated agreement with other transit systems; and 3) Those systems that do not participate in any coordination or cooperation efforts. The study found that coordinated transit systems did perform with greater social, service, and cost effectiveness than non-coordinated systems (Hough, Tolliver, and Bitzan).

More specifically, social effectiveness as well as cost and service effectiveness measures were evaluated in the study. Social effectiveness measurements indicate how effectively the transit services are being delivered and utilized. Vehicle miles per capita (VMC) reflects the level of service provided to the service area population. The joint/consolidated transit systems traveled more vehicle miles per capita than the transit systems that had cooperative agreements, and also further than transit systems with no coordination (Table 3.7). Passengers per capita (PC) indicate the extent to which the service area population utilizes the services. Results also indicated that passengers better utilized the joint/consolidated transit systems by nearly 10 times more than the systems that only cooperated.

Cost and service effectiveness measures indicate how effectively the resources are utilized in providing service and what level of subsidy is required. Total expense per passenger (TEP) indicates the overall resources consumed in providing service per capita. In this case, the transit systems that merely cooperated had lower expenses per passenger ($5.17) than the joint/consolidated ($6.14) or non-coordinated systems ($8.22) (Table 3.7). Subsidies per passenger (SP) reflect customers' willingness to pay, pricing practices and resource efficiency. Subsidies were highest for those systems with no coordination ($7.88) while they were the lowest for consolidated systems ($3.80) (Table 3.7).

Table 3.7. Mean Value of Social Effectiveness Measures for Transit System Classes

Performance Measures	*Cooperation*	*Joint/Consolidated*	*No Coordination*
Vehicle Miles per Capita	6.83	10.01	4.86
Passengers per Capita	3.90	44.27	2.11
Total Expense per Passenger	$5.17	$ 6.14	$ 8.22
Subsidy per Passenger	$4.50	$ 3.80	$ 7.88

ADAPTED FROM: Hough, Jill, Denver Tolliver, and John Bitzan. *Performance of Coordinated and Non-Coordinated Rural Transit Systems in the Mountain-Plains Region.* Mountain Plains Consortium Report 97-76 , North Dakota State University, 1997.

Coordinated systems may have performed better than non-coordinated systems because of economies of size. Typically, when a firm is small, expansion usually increases efficiency and average costs per unit of output will fall. When these costs fall, it is said that the firm is experiencing economies of size. Costs will decrease to a certain point; however, if a firm expands past a certain level, costs will begin to rise again, resulting in diseconomies of size. In relation to transit, providers may experience lower costs as they cover more service area and provide more rides. Larger transit systems are the result of multiple systems pooling resources, covering more area, and offering better services to customers. An added benefit is that better services may increase ridership by drawing individuals who were not previously using transit.

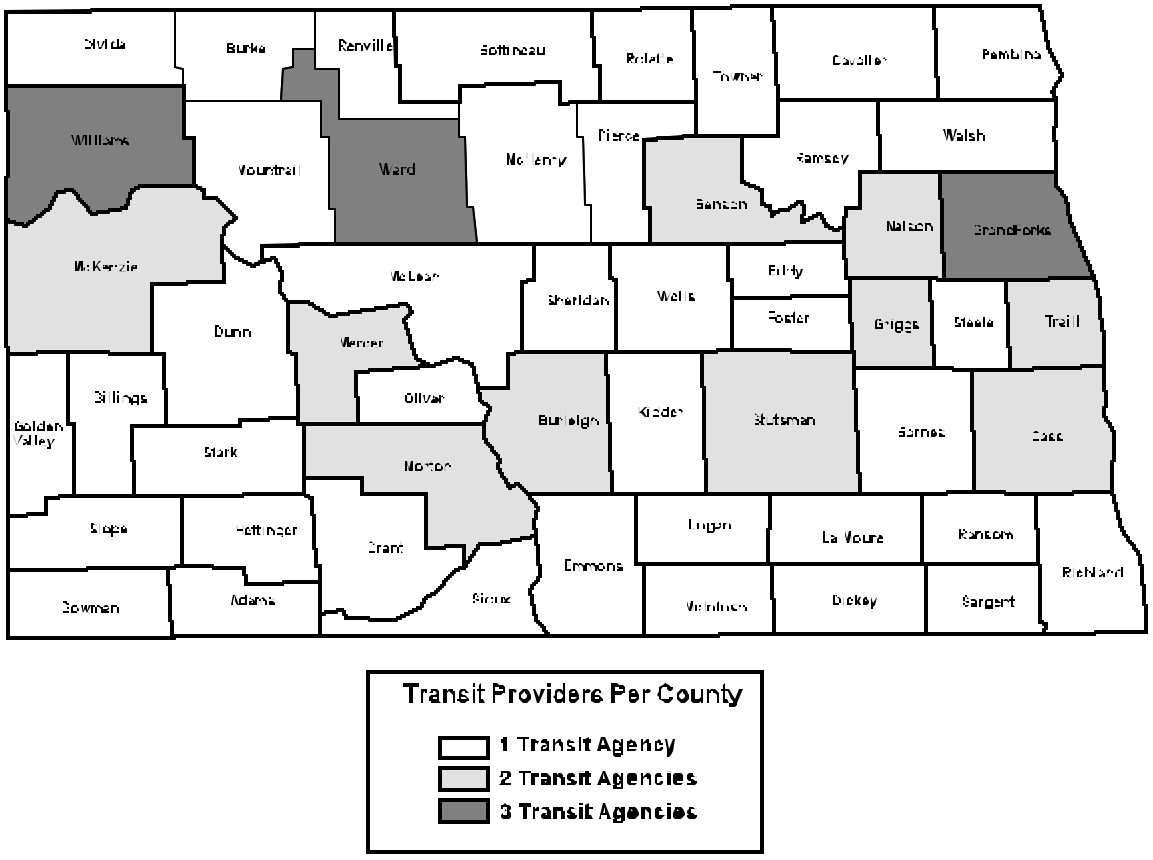
Transit Coordination and North Dakota?

Will coordination better meet the transit needs of North Dakota's transit dependent? The answer appears to be yes. Currently all counties within North Dakota receive some type of transit service. Transit systems serve several cities within a single county or multiple counties. Presently, there is overlap of services in 14 counties (Map 3.3). Some of these counties have two or three transit service providers. Coordination would eliminate any overlap or duplication of services and allow a more efficient transit system within the state. Duplication of services results in poor utilization of the available resources for transit. Coordination among these service providers could result in spreading administrative responsibilities and costs over greater output and more efficient resource allocation. In addition to eliminating the duplication of services, coordination has several benefits as described in the next section.

Benefits of Coordination

The Community Transportation Association of America (CTAA) identified several aspects of coordination which result in benefits for the consumer, the community, and the providers. Consumers benefit greatly from coordination. Typically, coordination results in additional hours and days of transit service. Rather than one community having vehicles sitting idle, another community nearby could make use of the vehicles during different hours of the day or the service area could be increased by including passengers from both communities. The increased transit service increases the mobility of customers.

Furthermore, increased ridership reduces the costs of the system and may reduce the fare charged per ride.



Map 3.3 North Dakota Counties, by Number of Transit Providers

Communities greatly benefit from transit services. Transit services provided to a community result in mobilizing and enabling more individuals to shop and spend dollars within the community, which supports the local businesses. Also, communities with transit service can provide rides to places of employment for residents that may not have an alternative ride to work. The increased access to employment helps the economic development of smaller communities. In addition, as communities work together to provide transit services, a higher quality of transportation services can be provided. Longer transit hours, more days of service, and newer equipment can be beneficial to a community.

Providers may not initially recognize the benefits of coordination, however, several benefits do exist. The pooling of resources frequently translates into a more efficient use of resources, both human and capital. Not only are vehicles used more efficiently, but employees can have a greater level of specialization. Rather than several transit managers keeping abreast of the regulations and mandates, one of the managers can focus on these while the other managers can concentrate on bookkeeping or marketing the services. Transit providers can also take advantage of volume purchasing power. Buying products, e.g., tires, insurance, etc., in larger quantities often results in purchase discounts. Although there are several benefits of coordination, transit managers may not be first in line to take the necessary steps to implement a coordination plan.

Transit Managers' Perceptions on Coordination

Meetings held with transit providers clearly indicated that coordination is a controversial topic. To better understand North Dakota transit managers' perceptions on how coordination/regionalization would impact their transit system, their community, and their customers, a questionnaire concerning the subject was mailed to them. Fifty-three percent of the managers returned the questionnaire and their perceptions on coordination are presented below.

Coordination and Customers

Fifty-two percent of the transit managers were neutral or did believe that coordination would result in a greater service area covered (Table 3.8). Furthermore, 41 percent of managers were neutral or believed that coordination would result in increased mobility for the customers (Table 3.8). Nearly 40 percent of the transit managers responding to the survey were neutral or thought that it would be very likely that consumers would receive more hours of service and more days of service as a result of coordination (Table 3.8). Only 26 percent of the managers were neutral or believed that coordination would minimize fare increases (Table 3.8).

Coordination and the Community

Thirty-nine of the transit managers responding to the survey believed (or they were neutral) that their communities would receive a higher quality transportation service as a result of coordination (Table 3.9).

Thirty percent of the respondents are neutral or believe that coordination would increase the reliability of transportation services for their community (Table 3.9). Likewise, 34 percent are neutral or believe that coordination would result in increased access to jobs (Table 3.9).

Table 3.8. Transit Manager Perceptions on Coordination Impacting Consumers

Consumer	Not very likely	Neutral	Very likely	Neutral & Very Likely
	----------*Percentage*----------			
Greater service area	48	9	43	52
Increased mobility	59	23	18	41
More days of service	61	22	17	39
More hours of service	61	17	22	39
Minimize fare increases	74	17	9	26

Table 3.9. Transit Managers' Perceptions of Coordination's Impact upon the Community

Community	Not Very Likely	Neutral	Very Likely	Neutral & Very Likely
	----------*Percentage*----------			
Higher quality transportation service	61	9	30	39
More reliable transportation service	70	13	17	30
Access to jobs/accommodate job trips	65	17	17	30

Coordination and Providers

Sixty-five percent of transit managers are neutral or believe that coordination would result in specialization of management, and 57 percent are neutral or believe that coordination would result in specialization of services (Table 3.10). About one-half of transit managers responding to the survey are either neutral or believe that coordination would result in more efficient use of resources, volume purchasing power, or greater marketing potential (Table 3.10). However, only 31 percent of the managers are neutral or believe that coordination would result in lower transportation costs (Table 3.10). Indeed, it is not conclusive whether overall total costs would decrease as a result of coordination. Studies have indicated that total costs may increase but that services provided also increase (McKnight; Burkhardt; and Rosenbloom).

Table 3.10. Transit Managers' Perceptions of Coordination's Impact upon their Transit System

Provider	Not Very Likely	Neutral	Very Likely	Neutral & Very Likely
	----------*Percentage*----------			
Specialization of management	35	30	35	65
Specialization of services	43	22	35	57
Volume purchasing power	52	22	26	48
Greater marketing potential	52	26	22	48
Efficient use of resources	52	17	30	47
Lower transportation costs	70	22	9	31

Maintaining local control is a major concern of transit managers. Eighty-four percent of transit managers are neutral or believe that coordination would result in a reduction in local control (Table 3.11). Interviews with transit managers from Iowa revealed that local control can still exist with coordination. Regionalized/coordinated systems can be organized using different models in different ways which still allow local identity and a local voice. The different coordination models or methods are discussed later in this chapter.

Fifty-seven percent of the transit managers showed concern that coordination would result in a loss of management jobs (Table 3.11). A loss of management positions may occur with coordination, but this will not necessarily be the case. Two of the three transit managers from Iowa interviewed said that regionalization did not result in a loss of management positions.[4] The manager from Great River Bend Services Inc. in Davenport, Iowa, did indicate that over a period of a few years, some management positions were phased out. According to Peter Hallock, of the Iowa Department of Transportation, each of these three transit managers operate a "model" transit system within the state of Iowa.[5]

[4]Kevin Kramer, North Iowa Area Council of Governments, Mason City, Iowa; and Rose Lee, manager of "Rides", Spencer Iowa, personal interview, May 1997.

[5]Phone interview, April 1997.

Table 3.11. Provider Perceptions of Likelihood of Potential Coordination Drawbacks Impacting Their Transit System.

Possible Drawback	Not Very Likely	Neutral	Very Likely	Neutral & Very Likely
	----------*Percentage*----------			
Reduction in local control	17	21	63	84
Loss of management jobs	30	13	57	70

Issues in Regionalization/Coordination

Implementing a regionalized or coordinated approach to transit may have some real barriers or perceived barriers to overcome before it can be effective. Perceived barriers may exist because of a lack of knowledge. Real barriers may exist, but with time and effort they can be removed. For example, institutional barriers are real and may exist between two transit systems because of different accounting practices. Unifying accounting practices would not be difficult, however, it would require cooperation and time to select the best method for everyone involved.

Turf issues are another common barrier to coordination/regionalization. Many transit managers have years of experience in transit and believe that they know the needs of the customers best. They have their own vehicles and their own territory and do not want to give any of them up. However, if systems work together, they can expand and improve services by offering additional services or more hours of service.

There is a perceived barrier that there is a lack of information on coordination. Some transit providers may not be aware of the abundant amount of information available on the topic.

Coordination studies have been conducted since the 1970s and several studies are available for review. Most importantly, for states or communities contemplating coordination, the Community Transportation Association of America is an excellent source for information. The organization supports coordination and has a hotline available (1-800-527-8279) for transit managers to call and ask questions on a variety of topics including coordination. They have also developed a handbook, *Coordinating Community Transportation Services: A Planning and Implementation Handbook*, which clearly lays out the coordination process and addresses challenges which transit systems may encounter while implementing coordination.

Several states and communities have made efforts to move toward coordination and have documented their procedures. Iowa Department of Transportation developed a Transit Managers Handbook which answers many questions transit managers may have about their system once it is coordinated.

Coordination/Regionalization Models

If North Dakota transit systems coordinate, what model would they follow? There are different levels of coordination, ranging from simply sharing information to complete consolidation of resources among systems. Widely accepted coordination models include: a regional transit authority, a lead agency, or a brokerage.

Regional Transit Authority

This model generally requires state legislation, but can be accomplished through aggressive policies by a state's department of transportation (CTAA).[6] In this model, an entire state is divided into regions, and agencies are created in each region that are charged with meeting the region's entire public transportation needs. Regional transit authorities often are given the authority to levy taxes or issue bonds; they also have the authority to approve or disapprove all vehicles purchased with state-administered funds within their region. Some RTA's operate all their transportation services directly. Others contract out a portion of their services to private operators. Still, other RTA's provide no service directly, and simply monitor the transportation activities of local governments, private non profit agencies, and private taxi, van and bus operators which are providing transportation with public financial assistance.

Lead Agency

Under this model a single provider assumes a central role in the coordinated system. The lead agency is responsible for designing the service, negotiating contracts with other transportation providers, and overseeing tasks such as training, vehicle selection, maintenance, dispatching, and carrying some passengers. The lead agency also functions as a monitoring system, often relying on

---

[6]Iowa's and Sweetwater County, Wyoming's legislation mandating the development of regional transit authorities is located in the Appendix B.

other contractors to provide all or part of the transportation. It may also be the designated agency of funding from the various participating providers. Funding for the provision of transportation rides may come directly as operating grants or subsidies from public funding sources, or indirectly through the purchase of contracts with the agencies whose clients are being served.

Brokerage

In this model, the overall management of the system is consolidated, but the vehicle fleets remain separate. The broker is the sole point of contact that passengers or agencies receiving transportation services have with the coordinated transportation system. The broker does not own or operate any vehicles directly. Instead, the broker relies on a pool of transportation providers. The broker allocates individual trips or blocks of trips to each provider, based on the provider's availability to provide transportation. The broker is primarily responsible for setting up and administering the system on behalf of other programs. The actual operation of the system and vehicles would be dispersed among the participating carriers. A variation of the pure transportation brokerage model is a partial brokerage system, in which the transportation system provides some transportation directly and also contracts for some services.

North Dakota has a population base of seniors and individuals with mobility limitations which are dependent upon transit. Some of these transit dependent riders would like or need more hours, more days of service, and coverage of a greater service area. Given transit providers limited resources, current budgets will not allow the necessary resources to meet these requests. Coordination among

multiple rural transit systems is one solution to improve the transit services provided. Furthermore, better coordination would reduce the current overlap of services occurring in counties within the state. Transit providers are not necessarily in favor of coordination but all respondents did believe that coordination would result in a higher level of transportation services. The next chapter contains the recommendations which would enable North Dakota to move toward a regionalized or coordinated rural transit system.

CHAPTER 4

RECOMMENDATIONS

Based upon the transit needs of the state and the current services provided, it is recommended that North Dakota develop a regionalized approach to their transit systems. There are two scenarios recommended in which the regionalized systems coordinate services to better meet the needs of transit dependent citizens of the state. There are some slight differences between the two proposed scenarios.

Regionalization/Coordination Scenarios

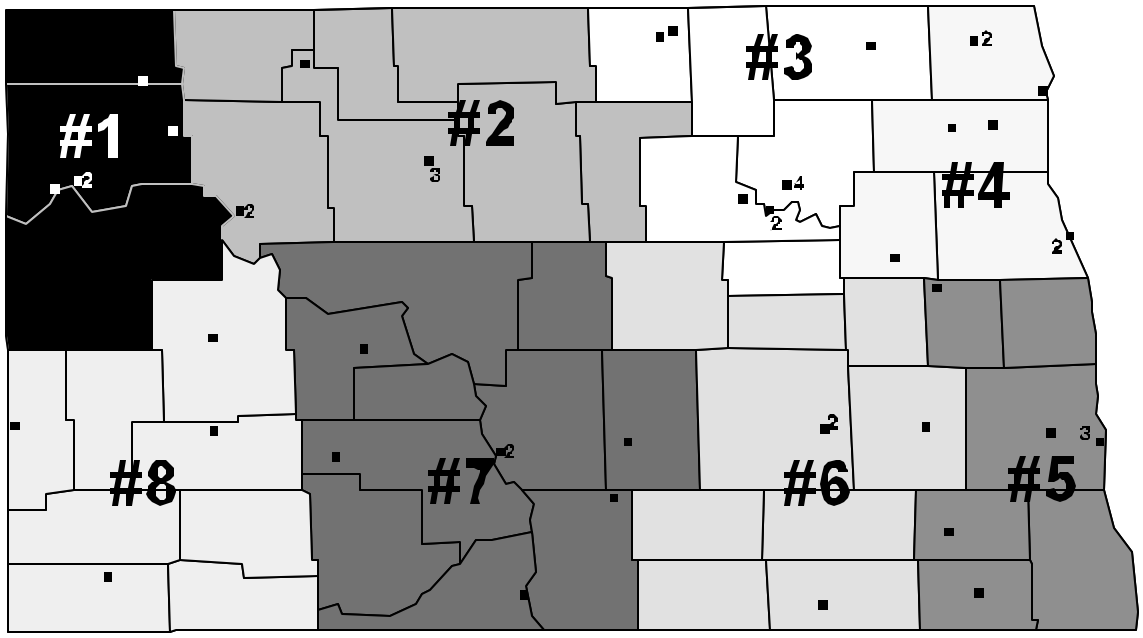
Scenario #1 North Dakota adopt a regionalized approach to transit with eight regional systems.

The first scenario is for North Dakota to develop eight transit authorities with regions consistent with the eight economic development regions currently used for state planning (Map 4.1). Map 4.2 illustrates that North Dakota transit systems that are already coordinated (Map 1.1) fit within the proposed transit regions (Map 4.1) with only a few modifications. For example, Divide county which is in the far north west corner of the state is coordinated with Souris Basin (Map 1.1) rather than with the proposed Region 1 including the counties Williams, Mckenzie, and Divide. The proposed regions could easily be modified to accommodate the needs of each county. It is recognized that these regions were developed about 30 years ago for planning purposes and the demographics of each county and region have changed since this time. There may be justification for consolidation or shifts within regions. Transit managers were given the opportunity to suggest alternative delineations for the regions and only a few minor suggestions were made.

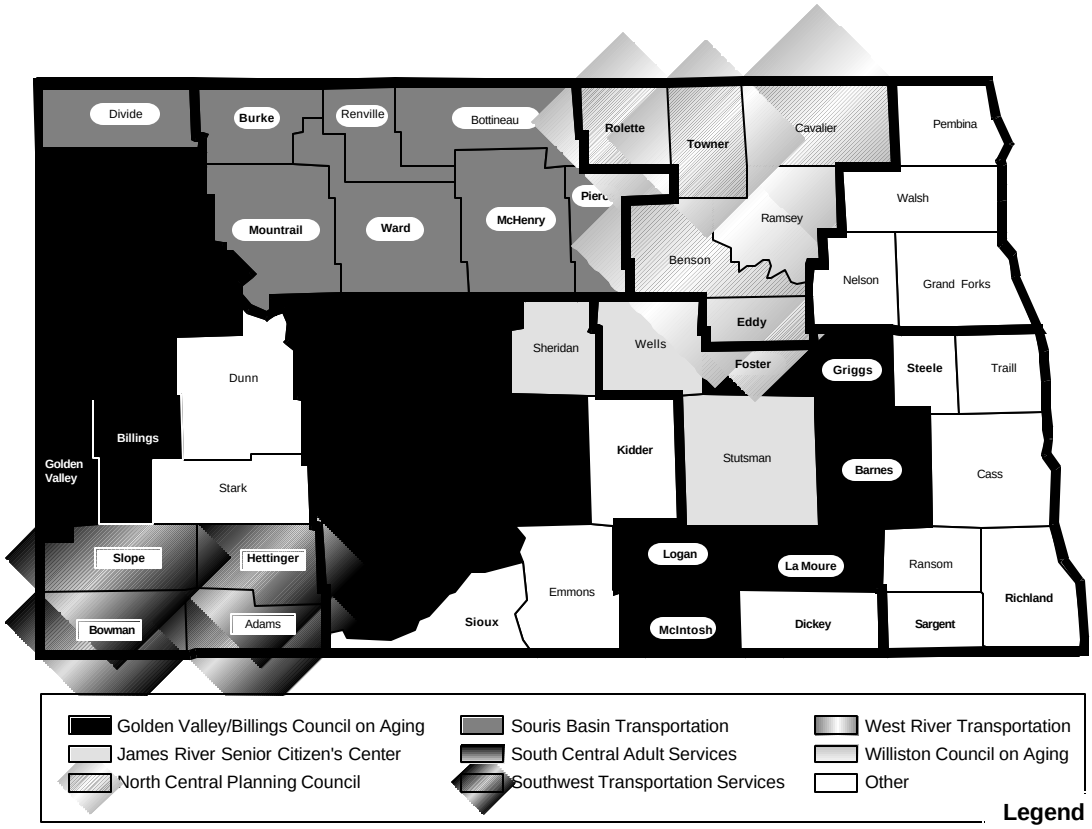
In this scenario, state and federal dollars would be distributed to the transit authority within each region. The funds would then be allocated to the transit providers within each region based on predetermined criteria. One such criteria may be based on performance measures. Systems that perform at higher standards would receive additional revenues to further increase performance. Transit systems within each region would be required to coordinate services. Each of the eight regions would select a model or method (brokerage, lead agency) for coordination that best fit their transit needs and requirements.[7] These models can be modified to meet the requirements and needs of each region. North Dakota transit providers were asked which model they would prefer for their region and the preferences were mixed. Mixed responses were expected since each region and transit system is unique.

Furthermore, it is recommended that the transit systems in the major cities of Bismarck, Minot, Fargo, and Grand Forks not be included in the regional concept. These city bus systems concentrate on providing transit services within these urban areas, and therefore do not lend themselves to providing service outside their jurisdictions. These transit systems should continue to be funded and continue dealing

[7]These models were described in Chapter 3.



Map 4.1 Proposed Transit Regions



Map 4.2 **Coordinated Transit Systems and Proposed Transit Regions**

Note: The colored blocks denote the coordinated systems [Map 1.1] and the thick line delineations denote the proposed transit regions [Map 4.1].

Scenario #2: Development of one state-wide transit authority and district offices within the state.

This scenario is much like the first, however only one state-wide transit authority with eight districts would be developed. These districts would operate similarly to the eight regions described in scenario #1. The district and regional approach enables sufficient local autonomy that allows customized service for the needs of each area, but broad state-wide authority which facilitates development of necessary funds and programs to build support. The state-wide authority assures coordination among districts.

The implementation of a transit authority is recommended in both scenarios because of several benefits which would result. One of the benefits of a transit authority includes statewide representation in the legislature. The voices of transit dependent citizens of North Dakota need to be heard and a transit authority could provide that voice. Another benefit of a regional transit authority is that it would bring systems and people together and develop a stronger ability to raise revenues for transit purposes. In addition, the transit authority could facilitate the purchases for several transit systems thereby increasing purchasing power. Furthermore, a regional transit authority would bring a standardization among transit systems. The standardization would be for services, equipment, record keeping, and maintenance. Standardization in bookkeeping would enable a better performance based allocation of funding.

Incentives

Due to potential opposition from transit providers, legislation may be needed to implement a transit authority. Examples of legislation used to create transit authorities are included in Appendix B. In addition, it may be beneficial for the North Dakota Department of Transportation to offer incentives to the transit providers in order to have them willingly participate in a regionalization/coordination process. This could be done in two ways: 1) Change the distribution formula of state-aid or 2) Distribution of federal grants. The state of California offered incentives to their transit managers to coordinate by reserving five percent of local sales tax receipts for the exclusive use of transportation services coordinated by consolidated providers (Community Solutions).

North Dakota transit managers were asked what incentives they would like to receive to encourage coordination. Most managers indicated that additional funds would encourage them to coordinate. Other incentives included better equipment, not limited to just vehicles. One transit manager suggested using disincentives by reducing funding from systems that have high costs and encouraging them to get more local funding.

In a time when funding is becoming increasingly uncertain, the trend toward coordination seems to be natural. Transit managers should be moving toward this direction with or without incentives and with or without requirements from the State.

SUMMARY

There appears to be a strong case for regionalizing/coordinating North Dakota transit systems. Reasons for regionalization/coordination include:

- The federal government has been encouraging coordination since the late 1970s and early 1980s.
- Past research at the Upper Great Plains Transportation Institute indicates that coordinated transit systems perform with more social, service, and cost effectiveness than non-coordinated systems.
- Several states have encouraged coordination and have had positive results, e.g., Iowa.
- Approximately 70 percent of transit systems in North Dakota are already participating in some level of coordination.
- Many transit managers reported they believed that coordination would result in a higher quality of transportation services provided to communities.

However, there appears to be some resistence from transit managers for regionalization/ coordination. They do not believe there would be significant savings from regionalizing the systems. This is to be expected given that it would be natural for them to have a concern regarding their future under a coordinated scenario. Nevertheless, the concerns for potentially providing better services for transit riders, the influence from the federal government toward more coordinated systems, the improved state administration through fewer systems, and the prospect of level or reduced funding would all seem to point to a form of a regionalized/coordinated rural transit system in North Dakota.

The North Dakota Department of Transportation (the administering agency for federal and state transit grants) should continue to push for coordination of all rural transit providers on a voluntary basis. They should also consider changes in the allocation formula(s) for distribution of grant funds to provide some incentive to transit services which are willing to cooperate to provide regional coordinated service. If voluntary compliance and financial incentives are not effective, the NDDOT should consider legislation that would establish the regional transit districts or regions as described in this report.

REFERENCES

Burkhardt, Jon. *Coordinated Transportation Demonstration Results.* United States Department of Transportation, Washington, D.C., 1980.

Community Solutions. "Pooling Community Resources Makes Accessible Transit Affordable." Community Transportation Association of America Newsletter, Washington, D.C., Fall 1996.

Community Transportation Association of America. *Coordinating Community Transportation Services: A Planning and Implementation Handbook.* Community Transportation Association of America, Washington, D.C, and Region IV Transportation Consortium, Birmingham, AL, 1992.

Greene, Michael. *Coordinating Rural Transit: Stretching State Resources for Better Service.* Council of State Governments, State Government Research Institute, Center for Agriculture and Rural Development, Lexington, Kentucky, 1987.

Hallock, Peter. "Iowa Transit Coordination Policy." *Transportation Research Record 1292*. Transportation Research Board, National Research Council, Washington, D.C., 1991.

Hallock, Peter. Iowa Department of Transportation, Des Moines, Iowa, Phone Interview, April 24, 1997.

Hough, Jill, Denver Tolliver, and John Bitzan. *Performance of Coordinated and Non-Coordinated Systems in the Midwest and Mountain-Plains States.* Mountain Plains Consortium, North Dakota State University, Fargo, forthcoming.

Kramer, Kevin. *North Iowa Area Council of Governments*, Mason City, Iowa. Personal Interview, May 1997.

Lee, Rose. *Rides*, Spencer, Iowa, Phone and personal interview, May 1997.

Ludwick, Ermadel. *Great River Bend Services Inc*. Davenport Iowa, phone and personal Interview, May 1997.

Richards, Lowell. South Dakota Department of Transportation, Office of Air, Rail, and Transit, Pierre, South Dakota.

APPENDIX A
NORTH DAKOTA TRANSIT MANAGERS

Norma Jean Neumiller
Benson County Services
P.O. Box 369
Maddock, ND 58348

Rick Thoms
Souris Basin Transportation
P.O. Box 2211
Minot, ND 58702

Pat Hansen
South Central Adult Services Council
P.O. Box 298
Valley City, ND 58072

Mary Nold
Southeast Senior Services
520-3rd Avenue South
Wahpeton, ND 58075

Donna Schaff
Southwest Transportation Services
Rt 1, Box 69
Bowman, ND 58623

Kenneth Reyerson
Steele County Transit
Rt 1, Box 11
Sharon, ND 58277

Phoebe Dixon
Three Affiliated Tribes Aging Prog
HC 3, Box 2
Newtown, ND 58763

Bonnie Jean Barton
Tioga Senior Citizens
Box 153
Tioga, ND 58852-0153

Paul Grindeland
Traill County Senior Services
P.O. Box 506
Hillsboro, ND 58045

Candace McCowan/Cynthia Lacounte
Trenton Indian Service Area
Box 210
Trenton, ND 58853

Elaine Byron
Walsh County Transportation
Box 620
Park River, ND 58270

Carol Anderson
West River Transportation
919 7th St. #306
Bismarck, ND 58504

Pauline Cain
Wildrose Senior Trans
Wildrose, ND 58795

Kathleen Smith
Williston Council for the Aging, Inc.
18 Main
Williston, ND 58801

Robin Werre
Bis-Man Transit Board
200 West Bowen Ave.

Bismarck, ND 58504

Mary Koehler
Cass County Council on Aging
P.O. Box 87
Casselton, ND 58012
Beatrice Delvo
Cavalier County Transit
211 8th Avenue
Langdon, ND 58249-2637

Marcie Mckay
Devils Lake Sioux Tribe Senior Services
P.O. Box 359
Fort Totten, ND 58335

LaMae Bergan
Devils Lake Transit (Sr. Meals & Services)
P.O. Box 713
Devils Lake, ND 58301

Cheryl Jongerius
Dickey County Senior Citizens
Box 213
Ellendale, ND 58436

Mae Booke
Dunn County Council of Aging
P.O. Box 43
Killdeer, ND 58640

Lucy Kostelecky
Elder Care
P.O. Box 629
Dickinson, ND 58061

Carol Mock
Emmons County Council on Aging
1955-56th Street, SE

Braddock, ND 58524-9210

Mark Thelen
Fargo Metro Area Transit
200 North 3rd Street
Fargo, ND 58102

Brian Arett
Fargo Senior Commission, Inc.
P.O. Box 2217
Fargo, ND 58108

Florence Kepplin
Glen Ullin Senior Transportation
Box 312
Glen Ullin, ND 58631

Patsy Maus
Golden Valley/Billings County Counicl of Aging
P.O. Box 434
Beach, ND 58621

Robert Ulland
Grand Forks Public Transportation
P.O. Box 5200
Grand Forks, ND 58206-5200

Martha Torkelson
Grand Forks Senior Citizens Assoc.
620 4th Avenue South
Grand Forks, ND 58201

Muriel Holman
Handi-Wheels Transportation Inc.
2525 Broadway, #002
Fargo, ND 58102

Corey Leintz

Hazen City Busing
P.O. Box 717
Hazen, ND 58545

Reed J. Stewert
Helping Hands Taxi
P.O. Box 578
Grafton, ND 58237

Carol Wright
James River Senior Citizens Center
P.O. Box 1092
Jamestown, ND 58402-1092

Jeff Fuchs
Jamestown Taxi Service
102 3rd Avenue SE
Jamestown, ND 58401

Linda Freeman
Kenmare Wheels & Meals, Inc.
Box 212
Kenmare, ND 58746

Pat Randall
Kidder County Senior Services
200 1st Avenue NW
Steele, ND 58482

Kelly Buechler
Mercy Medical Center
1301 15th Ave. West
Williston, ND 58801

Charlotte Zahn
Minot Commission on Aging, Inc.
21 1st Avenue SE

Minot, ND 58701

Alan Walter
City of Minot - Bus
515 2nd Ave. SW
Minot, ND 58701

Carol Joy Brandvold
Nelson County Transportation
Box 613
McVille, ND 58254

Jacqueline Senger
North Central Planning Council/Lake Region Transp.
P.O. Box 651
Devils Lake, ND 58301

Alfreda Morin
Turtel Mountain Nutrition & Supportive Services
Box 900
Belcourt, ND 58316

Larry Leonard, Jr.
Nutrition United, Inc.
P.O. Box 274
Rolla, ND 58367

Maureen Harlow
Pembina County Meals & Transportation
P.O. Box 9
Drayton, ND 58225

Mary Anderson
Ranson Co. Council for the Aged
606 Maple Street
Lisbon, ND 58054

Maria Millerhagen
Sargent Seniors Council Transportation
P.O. Box 234
Forman, ND 58032

Renee Vermillion/Keith Willy
Sitting Bull College
Fort Yates, ND 58538

APPENDIX B
TRANSIT AUTHORITY LEGISLATION