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Impacts Of Transportation And Population Upon Western North Dakota School Consolidation

Angela M. Kitzan

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This thesis, submitted by Angela M. Kitzan in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done, and is hereby approved.

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Dr. Justin Berg

This thesis is being submitted by the appointed advisory committee as having met all of the requirements of the Graduate School at the University of North Dakota and is hereby approved.

_________________________________
Dr. Wayne Swisher
Dean of the Graduate School

_________________________________
Date
Title  Impacts of Transportation and Population upon Western North Dakota School Consolidation

Department  Geography

Degree  Master of Arts

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Angela M. Kitzan
July 25, 2012
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To my grandmas: Shirley Kitzan, Adeline Tibor and Judy Tibor.

Thanks for all the love, support and teaching me to never give up.
ABSTRACT

Western North Dakota school district consolidations continue to be a topic of great local concern. This is apparent in the Hebron, Glen Ullin, and Richardton-Taylor school districts. A qualitative case study of these communities addressed the importance of four school district consolidation issues to the area: 1) time zones differences; 2) time on a bus; 3) identifying key stakeholders; and 4) other factors as noted by respondents. Data was collected from a mail back questionnaire sent to administrators and school board members. Major findings were: 1) time zones differences were of minimal importance; 2) time spent on a bus was to be of short duration; 3) the key decision makers were to be the school board members plus patrons; and 4) open enrollment is not so important. Similar issues exist in other rural areas experiencing energy booms, which is why this research has applicability beyond western North Dakota.
CHAPTER I

INTRODUCTION

A Vignette to Ponder

A grandmother is talking to her granddaughter about how she went to a one-room school. She starts to explain that when she was going to school, there were all these families settled across the prairie and having their many children attending all these rural schools. The mother of the daughter then breaks in, saying “Remember when I was in school? My class was the first to go to the town’s new high school. Do you remember that heartbreaking basketball game against Big Valley when I was a senior?”

The daughter is surprised. There are not that many farm and ranch families now in the area, a reflection of changes caused largely by mechanization of agriculture. Then, too, the issue of important basketball games is not with the neighboring community of Big Valley. In fact, high school students from her hometown are now on the same team as peers from Big Valley as a consequence of school district consolidation and dwindling high school enrollment.

Today in western North Dakota school consolidation is an ongoing issue, so the hypothetical conversation above has much reality within it. In the era of our grandparents, there were all those one-room school houses in the 1920s.
Gradually, the one-room schools consolidated into fewer but larger school physical plants, i.e., the early consolidated high schools. By the time our parents were graduating from those high schools, school districts of that time period slowly were starting to consolidate, resulting in some communities losing more than their physical plants in that the quality of life began to slip in the absence of what the high school provided as a focus of social interaction for these towns.

Purpose of the Research

The purpose of this study is to examine the impacts made by changes in transportation and population upon western North Dakota school consolidation, focusing on the communities of Hebron, Glen Ullin, Richardton and Taylor. In this part of Morton and Stark counties (Figure 1), there is a unique opportunity to look at what is a national issue, i.e. the consolidation of schools, is more than an ongoing problem of educational practice and an increasingly an issue of social change and community survival. Consequently, this issue is not only relevant to rural schools in North Dakota, but to rural schools across the United States because so many rural areas are seeing a decline in present school populations with projections for future population declines. Thus, this research on three school districts in western North Dakota, which is focused upon discovering what is viewed as important for decision-makers locally when considering school district consolidation, is of value beyond the communities in the case study. It can serve as a contemporary example that regional, state, and national decision-makers can use when taking into account aspects of community development as
part of the process of choosing whether to be undertaking or not undertaking a school district consolidation.

Figure 1. Setting of the case study. Source: North Dakota Department of Transportation’s 2011-2012 Road Map.

Upon reflection of the importance of this research, North Dakota’s K-12 education system historically has shifted from a large number of one room schools to many school consolidations. Then, too, there has been and continues to be subtle pressure to consolidate schools exerted in both the state legislature and North Dakota Department of Public Instruction over the past decade. Furthermore, North Dakota is part of the Great Plains; there are similarities throughout with you out migration and aging in place. However, the energy boom in the region has sufficient spin-off impact on this area causing the overall population in this area to rise ever so slightly and, in the case of in-migrants with families, to provide enough students to fill the schools such that school consolidation has been less emphasized as a response to dealing with those
Educational concerns; nothing lasts forever. Energy booms have gone to energy busts, causing people to migrate out from the Williston Basin and to look for employment elsewhere, taking their children with them. Thus, a case study from North Dakota gives a balance on this topic. Important educational research literature has come from New York as well as Iowa and Arkansas, but yet there is not much geographical literature in on school consolidation in the Great Plains which means that North Dakota contributes a missing piece in the overall puzzle of school consolidation in rural areas.

Context of the Research

School consolidation is a topic of great concern for many small rural school and districts throughout the United States. Advocates for consolidation commonly say that financial issues are the grounds for consolidation. However, opponents of school consolidation have responded with evidence against that argument, pointing out the main position of the rural school in not just the general economic and social development of the community but its importance in the continuation of those places in the school districts in question having an acceptable quality of life. Thus, there is evidence that continues to show the advantages of small schools in attaining higher levels of student achievement. Larger schools have been shown to increase transportation costs, are associated with higher dropout rates, have lower student involvement in extracurricular activities, and have the potential to harm a rural community’s sense of place. Despite this, however, the prevailing notion of consolidation of school districts and reducing expenditures still remains strong.
The rural areas in North Dakota, despite the current oil boom in the Williston Basin, are having a shift in population which causes the schools in these rural areas to shrink. If changes in population can be anticipated, such as people moving out of the rural areas and closer to the oil fields or to bigger cities on the edge of the Williston Basin or outside it, e.g., Bismarck and Fargo, for work and recreation, then school consolidation plans can be created effectively to serve the population.

However, there are constraints when wanting to consolidate schools. Small town pride can be a factor in which people have a problem with consolidating with their “rival” from fifty years ago and fear of losing the town’s identity. The town’s school is considered a hub for activity whether it is hosting a basketball game or perhaps a music recital. The local school is the main focus of the community to some people, including those who are even without children currently enrolled in it. Thus, there is a perception, and justifiably so, that without a school, a community cannot function.

Yet, most people yearning for the “good old days” seemingly forget that you truly do need sufficient students for these schools to function. It is hard for “old timers” and “almost old timers” to accept that population in many rural areas is dwindling. Many rural schools are scrambling to find a co-op (cooperative agreement) for sports. Some school districts even are starting to expand the “co-op” theme, to include the idea of consolidating school districts in order to offer a wider range of classes, a better set of extra-curricular activities, and successfully support a more diverse student population.
Thesis Research Themes

The research for this thesis has emphasized four areas of concern. The first one being if a difference in time zones plays a part in decision-making of school consolidation. The communities of Richardton and Taylor are on Mountain Standard Time, but the communities of Hebron and Glen Ullin are on Central Standard Time. There is already a sports co-op in operation with Hebron, Richardton and Taylor for football, but when consolidating schools for the purposes of sharing courses and instructors, travel across different time zones becomes more of an issue. Furthermore, anecdotal evidence exists that dealing with the temporal differences of being in adjacent, time zones seemingly has an impact on students’ performance academically, especially in the younger grades.

The second concern is how distance and time on a bus play a part for transportation routes in school consolidation. Family farms seemingly are near extinction in rural western North Dakota and although some do still exist, they are living in widely scattered locations even when in the same school district. This means that they can be even an hour away by school bus from the school being attended by the youngsters of these families. Add a new school into the mix and instead of being on a bus for an hour to school, they could easily be on the bus for two hours or more, possibly affecting academic performance regardless of grade and age and/or causing participation for extra-curricular activities to shrink because fewer and fewer people want to make the long drive to the nearby town which is not so close as desired when going to practices for sports or other activity, e.g., a high school theatrical production rehearsal, take place.
Making the decision to consolidate schools is tough, but who has the main say in consolidating is even tougher to decide, and this is the third concern of this study. Consolidation has an impact on everyone and the stakeholders include the entire community plus the teachers and support staff (as well as other employees of the school), the parents, and the students themselves. Everyone has their own idea on who should make the “final decision”.

Finally, there are many other factors that encourage and discourage consolidation. But what exactly are they? Some stakeholders say the ever-increasingly complex and somewhat nearly overwhelming problems of handling financial issues encourage it, while anecdotal evidence also exists that a lack of participation in sports encourages it even more. Yet that “small town” pride and the idea of consolidating with your rival from the 1970s also can discourage it.

Summary and Transition

Therefore, the overlying purpose of this study is to try to determine what it takes to push a school(s) to make that decision, often a “bite the bullet” nature, and undertake efforts for consolidation. This research will be a presentation of what factors encourage consolidation as well as discourage it, how transportation and time change play a subtle role in consolidation, and who should be the one making the decision. As will be seen later in the thesis, there is the handling of the analysis of school enrollment trends, in combination with surveys as the means to examine this issue in these North Dakota communities. Furthermore, this investigation includes the assessment of the topic’s historical and spatial significance through trend lines and maps. This study has important
economical, educational and social implications for the future of rural North Dakota schools and is intended to give an insight on what some issues that schools may run into and what are some of the concerns. Consequently, it important to note that literature review, Chapter II, is focused upon an examination of the history of school consolidation in America, the significance of it, and implications of school consolidation. It also contains reasons for consolidations and the effects it, as well as an insight to how other states handled school consolidation. Transportation costs and travel distance, as well as a small section on other schools in North Dakota and the issue are given in the final section of the literature review. Thus, the next chapter provides the conceptual framework for the later chapters.
CHAPTER II
LITERATURE REVIEW

Overview

This literature review is in ten parts. Following this overview, the second section of the chapter is an examination the history of school consolidation in America. It then continues with a review of consolidation’s significance in rural America and moves on to topics such as implications of school size, effectiveness of small class size, and a benchmark study done in Arkansas. Then there are the sections on transportation-travel distance and transportation costs. Section nine of this chapter presents a background on North Dakota school consolidation. The chapter ends with a summary and transition so that the reader can see how this chapter leads to the chapter on methods.

History of School Consolidation in America

America has been consolidating its school districts since the early part of this century. In 1931, there were 127,531 school districts in the United States; fast-forward 55 years later to 1986 and the number had dropped to 15,577 (Snyder, 1990). This vast decline, however, was no accident.

Between 1939 and 1980, the local administrative units of American education were transformed from small, informal community arrangements into large, professionally run bureaucracies. The expanding role of state
bureaucracies stimulated the growth and formalization of school district organizations through consolidation (Strang, 1987). The importance of the administrative transformation occurring through district consolidation should not be overstated; consolidation can preserve the formal autonomy of local school districts. At the same time, however, it acts to concentrate local administration in organizations that attend to state and national policy much more than those they replace (Williams, 1990).

When school districts are consolidated or reorganized, small schools frequently are consolidated or are merged with larger schools. Public education has become bureaucratized and centralized; and even though the pace of consolidation has slowed, there is a strong support for the principle that can be traced in particular to the last part of the 20th century (Camp, 1989). There have been and continue to be many special interest arguments for large school districts such as they have more total resources, the curriculum can be standardized, and students may perform better on achievements (Barley and Beesley, 2007; Howley, Johnson, and Petrie, 2011). Sometimes, too, administrators may command larger salaries when supervising larger professional staffs. Teachers sometimes may receive better pay and improved fringe benefits; members of larger school boards may exercise a greater power base in matters of educational policy and financial management. Larger districts can gain economies of scale in busing and purchasing power, and they can attract more grant money (Howley, 1988; Williams, 1990).
School Consolidation’s Significance to Rural America

The most successfully implemented educational policy of the past fifty years has been the consolidation of rural schools and school districts. The idea to consolidate rural schools almost always came from outside the rural community—it is very rare to find a local group within the community that is leading the way or pushing for a school consolidation (Sher and Tompkins, 1977; Barley and Beesley, 2007; Howley, Johnson, and Petrie, 2011). The values of smallness—local control, the close relations possible among professionals, parents, students and community and the opportunity for many students to participate in school activities at a more meaningful level were discussed but seemed overshadowed by the promise of new buildings, more courses, and more sophisticated equipment. Yes, the benefits of consolidation seem overwhelmingly positive and the costs minimal in comparison as noted in the last quarter of the 20th century (Sher and Tompkins, 1977). What is not taken into account, however, is the impact a consolidation will have on a community whether it is transportation issues, population issues, or infrastructure issues. These intertwined but distinct facets of a school’s relationship to its community and its students generally are never really recognized until it is too late to change it, particularly if key stakeholders are too far vested in how the consolidation process is already in stages of implementation in particular places.

It often seems that the research in this area is so focused upon being “pro-consolidation” that dissenting viewpoints are missing, i.e., many authors are reluctant to acknowledge the presence of new and enlarged costs attributable to
increased size of operations. The bulk of relevant research starting in the final
decade of the 20th century particularly seems to ignore the additional capital
expenditures, salaries, and especially operating costs associated with the greatly
increased transportation that is required by consolidation (Williams, 1990; Barley
either walked to school, carpooled, or drove themselves must now be bused and
those who would only ride four or five miles a day now must frequently ride
twenty or more miles to reach the “centrally located” school, but this was already
a “hidden cost” noted by more thoughtful authors of the 1970s (Sher and
Tompkins, 1977) and later (Barley and Beesley, 2007; Howley, Johnson, and
Petrie, 2011). It continues to need to be said that consolidation does not equal a
budding economy.

It also is crucial to remember that cuts in funding for public schools have
seeming resulted in precipitating efforts in recent school districts consolidating.
When school districts merge, the number of students within the new district
increases, while certain fixed costs such as salaries for administrators and
utilities usually decrease or remain the same (Hanley, 2007). However, the
projected cost saving relies on forming bigger school districts that can spread
their fixed costs over a larger student base, resulting in decreasing the total cost
per student, the most important total cost savings is controlling the increase in
services, such as busing (Hanley, 2007).
Implications of the School Size

When it comes to national debates on public education, the question of optimal school size has never captured the intense momentum that other national debates on public education has been because educators do not agree on what is the appropriate and optimal size for K-12 public schools (Williams, 1990). There are those who call for smaller schools, declaring that the quality of education and achievement academically are attained in schools of modest size, having strong ties to the community and parents (Coladarci, 1983; Williams, 1990).

One line of research emphasizes that the optimal size for an elementary school in order to perform effectively ranges in the area of 300-400 students, and as for a secondary school, 400-800 students is appropriate. Larger schools with enrollments that exceed 1200 students have yet to produce expected economies of scale and that sufficient numbers of students do not enroll in enhanced curricular offerings to justify their availability (Williams, 1990; Bard, Gardener, and Wieland, 2005).

America has been consolidating its school districts for most of the current century. As the process continues, smaller school districts are consolidated or merged with larger school districts which results in larger school, continuing a trend started in the last century (Coladarci, 1983). If there are limits when it comes to class size and if public policy mandates the consolidation of school districts, then school size decisions become a result of factors other than the
academic merits of relative size (Williams, 1990; Bard, Gardener, and Wieland, 2005).

The implications of the school size debate take on a special significance in rural America (Howley, Johnson, and Petrie, 2011). Unfortunately for their stakeholders and patrons, there are some rural schools that are too small to be educationally effective. There are others while educationally effective may have operating expenses, most notably transportation, that are more than the local taxpayer can afford. The state may address the problem by encouraging the consolidation of small school districts and schools or by providing special funding to support the rural areas (Hanley, 2007). No matter what case, either one can provide ground for the application, testing, and finally evaluation of the research findings on the effectiveness of small schools.

The school size debate in rural America, where some schools are too small to be educationally effective and the others, while educationally effective, may not be effective in terms of cost (Williams, 1990). The only choice left is consolidation or allocating additional funds to rural areas. Starting in the mid-20th century, it was not unusual for states to address the problem through school district consolidation policies (McLure, 1953). One could argue that if small classes are the most educationally productive, should it not follow those small schools should be comparably productive (Coladaci, 1983; Barley and Beesley, 2007)?

Research also states that small schools can be highly effective improving the equality of education. School size tends to be a dependent variable in the
educational equation; it becomes a result of the influence of independent variables such as district and class size. Large schools may not provide the economies of scale nor the quality of education. School district size is the most significant factor in determining school size with consolidation/reorganization plans resulting in larger schools. Finally, school size is of the most concern in rural areas where small schools historically are prevalent and where proposals for consolidation should be weighed in the context of research findings on the effectiveness of small versus large schools.

There are three numerical dimensions of the education system to be considered here: school size, class size, and school district size. These three dimensions have an overlapping relationship and are viewed from different angles, having different priorities by the people involved in the education system. When it comes to school size, however, there are a few agreements. A school can be too small to be effective, but a school can also be too large in order for it to be effective (Williams, 1990).

Goodlad (1984) stated that it is not impossible to have a good large school, it is simply more difficult. There are no defensible reasons for operating an elementary school of more than a dozen teachers and 300 boys and girls, having the burden of proof set only on large size. Justifying a senior or junior high of more than 500 to 600 students is a challenge and not always readily operationalized. However, no school size should exceed 800 at the secondary level and at the junior high level, 400 in a “best practices” mindset. Yet, the ideal
amount is 600 and 300 respectively; and with primary schools having only 150 boys and girls. These three numbers can be beneficial as well as satisfactory.

However, one can advocate that larger schools are good because they are able to provide more diverse instructional offerings to meet the different needs and interests of students. Courses that might not be reasonable because they are too different and do not attract many students can be offered in schools with larger enrollments. The opportunities that exist in large schools for student participation are in many different extracurricular and sports activities. Yet the most frequent argument in favor for large schools is that large schools are more efficient to operate and are therefore more responsive to community financial interests; most stakeholders supposedly do not realize that it is cheaper to operate a school with 1,000 students than two schools with 500 students each (Daresh, 1984).

For those who favor small schools, while it may be that some instructional diversity might be sacrificed, instruction is strong in the basics of a curriculum. Having fewer elective courses that could be distracting to instruction, schools can focus more attention on improving instruction in critical skill areas (Daresh, 1984). While the number of extracurricular activities might be increased in large schools, there is still no guarantee that a higher percentage of students will participate (Daresh, 1984). Small schools still provide many opportunities for students to become involved and receive recognition as “stars”, and the strongest argument that is made in favor of maintaining smaller schools is that they are much more "personal" places where students are less likely to feel lost
in the crowd. Students in small schools are not a number or a statistic; they are part of a “family” (Daresh, 1984; Sell and Leistritz, 1997; Lyson, 2002).

A 1986 study on how curricular offerings of large secondary schools compare with offerings of small secondary schools is of relevance to this researcher’s thesis and needs to be considered. That study, which was motivated by theories of production, hold that economies are available in large compared to small schools; to say that such scale or size economies exist is to say it is possible for larger schools to operate more efficiently than smaller schools (Monk 1986).

Monk (1988) criticizes the traditional view on the school size that bigger is better, citing three policy options. First, there is a traditional approach which considers low levels of enrollment as contributing to inadequate program offerings. Second, there is a modified traditional approach similar to the traditional approach, but tolerant with local means of increasing enrollment even when it conflicts with the state’s view of the ideal. Finally, there is a nontraditional approach which differs substantially from the others by placing less emphasis on low enrollment as the primary source of problems in rural schools. However, each approach does have advantages and disadvantages—it is not a question of one approach or policy being right and the others wrong. It is not a matter of choosing one policy to the exclusion of all others. States typically have the opportunity to pursue a combination of polices; the challenge is to create a desirable mix.
Some say small schools will disappear in the future; however, this is not the case in some studies. The idea of a desirable school size is not only studied here in the United States, but internationally as well. Around the world, small schools are ideal especially in rural areas. Rural populations served by small schools are substantial, distinctions between “small” and “rural” not only vary from country to country, but also within each nation (Monk, 1988). Policies in these areas are to support small schools must consider the way in which a given local or regional context can be used to support the needs of small schools while preserving and strengthen their advantages (Cole, 1989).

Effectiveness of Small Class Size

There is a lot of debate as to the educational effectiveness of small schools, but there is little debate as to the effectiveness of small class size (Williams, 1990). Small class size has become one in the same with conventional wisdom that students learn the best in small classes; however, there is not a universal agreement on this idea (Barley and Beesley, 2007).

Some researchers have documented a positive relationship between smaller class sizes and increases in student achievement yet other researchers have concluded that class size was of little importance in determining student achievement (Daresh, 1984). Regardless of statistics and studies, the prevailing perception is that small classes are best. States may mandate the maximum size for classes, accreditation agencies may prescribe the limits of size, and parents across the nation will demand small class sizes. Teachers know the impact of 13 students compared to 27 students in a class room. In some large classes,
discipline and control suffer, teachers are stressed, the administrative burden escalates, and expectations for student learning diminish (Williams, 1990; Bard, Gardener, and Wieland, 2006; Bard Gardener and Wieland, 2007; Howley, Johnson, and Petrie, 2011).

Arkansas Case Study

A study was conducted in Arkansas focusing on four consolidated high schools. Twenty-three interviews were conducted with the interviewees being high school administrators, teachers and students that were forced to change schools as a result of consolidation as well as educators and students that were joined by new teachers and students (Nitta, Holley, and Wrobel, 2010). The study was limited to those most directly affected by consolidation. Granted, community members and parents are also affected by consolidation, however, the researchers wanted to keep their focus limited for three very important reasons. First, the students and teachers/school administrators had their lives transformed by consolidation. The main effect to this group is everyday life; their lives are turned upside down by either being transported into a new place to study/work or else by the arrival of newcomers. Second, few studies have shown the lives of the students, teachers, and administrators who have experienced consolidation. Third, there are advocates supporting as well as opposing school consolidation. The premise of the arguments of those within the schools, particularly students, that it is important to understand from the educators and students themselves how the consolidation has affected them (Nitta, Holley, and Wrobel, 2010).
The interviews occurred in four rural locations within the state of Arkansas, categorized by formal type of school consolidation: two were merger consolidations and two experienced annexation. The mergers created new districts: Walnut and Pine in northern Arkansas; Field and Creek in southern Arkansas were combined. With the Walnut and Pine school districts, the Pine district had fallen below the 350 student threshold, with the smaller Pine High School closing and the larger Walnut High School remaining open and receiving the former Pine students. With the Field and Creek school districts, both high schools were equal in size, and the decision to close the Field location and keep the high school at Creek open came out of much discussion and negotiation. Neither district had an enrollment below 350, but state officials made it known that it was only a matter of time before the enrollment dropped below the threshold for closing a district. Consequently, district leaders decided to do something before the state had to intervene (Nitta, Holley, and Wrobel, 2010). Both of these mergers involved districts with similar racial and socioeconomic student populations as well as similar enrollments. However, one school did close and the other one kept their students and received the new ones. The new consolidated high schools were given new names with new school colors and sport team names (Nitta, Holley, and Wrobel, 2010).

Experiencing annexation in central Arkansas was the Oak district which annexed the Hill district and in eastern Arkansas the Rice district annexed the Cherry district with both cases such that the annexed district was closed and all high school students were moved to the annexing district’s high school (Nitta,
Holley, and Wrobel, 2010). The students and educators from Oak transferred to Hill, and the students and educators from Rice transferred to Cherry. Both were smaller in terms of numbers when it came to students and educators than that of their counterparts, joining a much larger district. The annexed Cherry and Hill student populations not only differed socioeconomically but culturally as from the much larger Rice and Oak student populations. Unlike the two mergers, which stated previously resulted in two new high schools, Oak and Rice High experienced no changes except for receiving Hill and Cherry students and educators (Nitta, Holley, and Wrobel, 2010).

The twenty-three interviews in four consolidated high schools describe a complicated picture with many unique individual stories that sometimes contradict one another. However, commonalities did emerge and it was shown that students adapted better than teachers to the social disruption caused by consolidating; students formed relationships and seemed to enjoy more diverse social opportunities while even veteran teachers who stayed in the same school struggled to form new relationships with the new teachers from the consolidated school (Nitta, Holley, and Wrobel, 2010). Another theme was that students and teachers generally experienced academic and professional benefits after consolidation. Teachers experienced improved working conditions as well as professional development opportunities after consolidation. Students both moving and receiving had broader course offerings that offered more AP and vocational courses (Nitta, Holley, and Wrobel, 2010).
Transportation and Travel Distance

The topic of transportation, aka school busing costs, has not received a lot of attention in the school district consolidation studies. Transportation is a secondary service that complicates the forecasting of savings from consolidation. Rural school districts are often targeted for consolidation. Low student densities are distributed over large geographic areas; resulting in more students that qualify for busing considering they live farther away from the remaining schools (Hanley, 2007). This condition is central to forcing the district to add more busing and longer routes (Bard, Gardener, and Wieland, 2006).

Research on school district planning problems has mainly focused on minimizing travel distance. Travel distance, according to research, is considered the distance between the geographic centroids of groups of students and the school to which each group was assigned, however, bus routes were not taken into account for and generated (Hanley, 2007).

Hanley (2007) viewed the generation of bus routes in order to allow a realistic comparison between the changes in busing costs and the administrative cost savings estimated by others. His study presented a mathematical formula of a combined consolidation and bus routing model as well as a heuristic-solution method based on the formula using a Monte Carlo simulation. This study focuses on the state of Iowa.

Estimating changes in transportation costs caused by the implementation of a statewide district consolidation plan can be formulated as a mathematical problem. When consolidated, student enrollments can be of sizes that are equal
to or less than the statewide target district enrollment (Hanley, 2007). Creating compact school districts is important. The more compact a district is, the shorter the busing will be. The goal is to minimize busing costs. In the Iowa study, this was done by measuring total student miles traveled within the new districts, while serving all eligible students.

Three comparisons were done in the school bus routing study: a times savings study, the ROUTER computer program, and a manual sweep method. In the comparison study, the ROUTER program was found to be too limiting for a district-wide scheduling because it is restricted to solving routes for just only one school. The software fails to account simultaneously for the objectives of minimal costs, satisfaction of demand, and balanced travel time among rides below a given threshold.

The discussion of relevance of the three objects that Spasovic, Chien, Kelnhofer-Seeley, Wang and Hu, (2001) observed for school bus transportation was studied even further by Bowerman, Hall and Calamai, (1995), modeling the provision of school bus transportation in urban areas, formulating a multi-objective non-linear integer program for an urban school bus routing problem and proposed a heuristic solution. Stating that it would be best to assign students to the nearest street intersection, connecting the intersections using a vehicle routing program that satisfies a bus capacity constraint and select that solution with the fewest number of routes, and shortest length of routes.

Clustering the students from the individual intersections into bus stops along the initial school busing routes is based on a maximum walking distance
from home and generates the final bus routes connecting the designated bus stops. However, Bowerman, Hall and Calamai, (1995) method would not be applicable to rural areas because differences in settlement patterns in different school districts call for consideration of other solution methods. Spasovic, Chien, Kelhnofer-Feeley, Wang and Hu, (2001) suggested a time savings heuristic considering it could include efficiency, effectiveness and equity objects while allowing for multiple schools and producing solutions close to optimal in terms of acceptable time.

Hanley (2007) used the principles of efficiency, effectiveness and equity to develop the heuristic approach that was used in his study. This work included the generation of compact consolidation districts that met student enrollment targets, bus routes that minimized total miles traveled while meeting the demand for busing all eligible students, and prevention unacceptably long trips for students. Hanley (2007) tried to apply a more rural approach since Iowa, despite having a few large cities, is mostly rural; with rural areas, there is a lower density of students.

Equity was heavily considered because of the negative impact of excessively long bus rides, developing it for application in states like Arizona, South Dakota, Nebraska and Idaho (Hanley, 2007), which also have the need to consolidate school districts. Hanley used a simulation called “Monte Carlo” to solve a combined model which was chosen for a few reasons. One, Hanley was not able to find a solution using the exact same methods that Bowerman, Hall and Calamai (1995) and. Spasovic, Chien, Kelhnofer-Feeley, Wang and Hu
(2001) had used considering that both scale models were too large. Two, the study produced a range of possible district consolidations as well as bus route solutions for use in the debate on the general topic of school consolidation. If a statewide policy of school consolidation is the outcome that Iowa eventually would adopt, it will have to be done in a result of multiple and negotiated steps.

An estimate on the impacts of school consolidation with student transportation was done in four steps. Step 1 involved generating school bus routes using the existing district boundaries while Step 2 involved consolidating existing school districts using an enrollment target. Step 3 was used to generate school bus routes using existing district boundaries and finally, Step 4 was to compare bus routes prior to consolidation and following consolidation (Hanley, 2007).

Bus stops were located at the centroids of the census blocks and straight-line distances between census blocks were used to facilitate the generating of the bus routes (Hanley, 2007). Using the assumptions generated, a result in an under-estimation of total miles traveled could happen; in order to correct it, estimated distances were inflated using a correction factor; obtaining the factor by averaging the ratio of the network and straight-line distances between all school pairs within the state.

The cost of student transportation, specifically how it relates to the provision of a quality instruction program has been understudied; stating that rural schools are now too impersonal and require lengthy bus rides for children (Killeen and Sipple, 2000). Transportation costs remain higher in rural districts
and lower in suburban and urban areas. The financial observation is important in that it appears to constrain opportunities to fund quality instruction to rural areas (Rincones, 1988; Bard, Gardener, and Wieland, 2006; Howley, Johnson and Petrie, 2011).

Communities that are experiencing school consolidation often say that their number one concern is dealing with problems caused by increased bus ride time. Children in rural school districts are among the most affected; when two school districts either merge or otherwise fuse together their boundaries, the geographic center of that area also moves (Killeen and Sipple, 2000). Children living at the edges of the newly made boundaries must travel further to attend their original school because of the interplay between low population density and wider school attendance boundaries (Monk, 1984). Evidence suggests that ride time for some rural school children can reach as high as two hours each way.

The topic of bus ride time and associated equity issues are typical in the discussion of public school desegregation. Many large school districts retain and analyze bus times in order to weigh the impacts of busing policies. On a national level though, there are no consistent statistics or data that exist which account for total bus ride time for children (Bard, Gardener, and Wieland 2005). The decision not to collect such data in national datasets such as the National Educational Longitudinal Study comes from the political dynamics surrounding desegregation (Killeen and Sipple, 2000). Fiscal data on the costs of providing adequate transportation over time offer proximate indicators of school of school busing and transportation policy.
Transportation Costs

Research into the costs of providing transportation services by school districts show that districts have experienced a dramatic rise in their total expenditures for transportation services and that research finds that the transportation expenditures for small and rural schools vary significantly from non-rural school districts across the nation (Killeen and Sipple, 2000). The number of children transported to school by bus has grown on annual basis in a 50 year span (1930-1980). Growth between these years was fairly constant and by 1980, growth had subsided and a plateau was reached. During the early 1990s, a fewer than 60% of all school children are bused to school (Howley, 1993). Transportation costs have increased every year since 1929. Even up until the 1950s, transportation costs across the US were only accounted for less than 2 billion dollars annually. By 1980, the amount had quadrupled to 8 billion dollars and spending finally started to level off. However, by 1985, transportation costs started to rise and by 1995, US school districts were starting to spend 10 billion dollars annually on transportation services (Kannapel and DeYoung, 1999).

Spending on transportation appears to be related to trends in the rate of students actually bused or serviced by transportation services. Transportation costs are related to the total volume of students entering school (Killeen and Sipple, 2000; Howley, Johnson, and Petrie, 2011). The costs are closely related to the total number of students being bused to school. Unfortunately, growth in transportation spending often exceeds the growth rates for overall enrollment and the number of students being bused.
Data from the early 1990s states that transportation costs per child are greater in rural rather than urban school districts due to the distance to bus children to and from school (Howley, 1993, Killeen and Sipple, 2000). It is ideal that per pupil, transportation costs should be compared before a school consolidation and after, however, such data seldom exists to do that.

School consolidation does not improve school economies and transportation costs increased when schools are consolidated. As transportation costs increased per pupil, more and more children were served. The economies of scale arguments fail rural school districts when it comes to transportation policy; the costs of providing transportation services coupled with the costs of bus ride time increased with consolidation in rural school districts (Bard, Gardener, and Wieland, 2005; Bard Gardener and Wieland, 2006).

For years, schools served their local community first and the district second. The earliest schools were organized around a single teacher serving the desires of the local parents and community leaders; around the turn of the 20th century, the model of school organization started to change dramatically (Kastle, 1983). It was argued that schools must be larger, bureaucratically organized and be assessed on the efficiency measures rather than student experiences or learning (Callahan, 1962). School districts have been organized around professional management standards emphasizing efficient organizational structure and process (Callahan, 1962).
North Dakota

In 1970, there were 256 public high schools in North Dakota and 25 years later in 1995, the number of public high school districts had dropped by 27% with 186 public high school districts (Sell and Lestriz, 1997). Ten percent of the decline occurred from 1990-1995 (208 districts in 1990, 186 in 1995). In both 1970 and 1990, nearly one-third of students attended a school that ranged in size from 100-499 (Sell and Lestriz, 1997). Nearly 70% of the 208 high school districts in North Dakota had between 100 and 499 students in 1990.

The inability of individual school districts to maintain accreditation has been a factor in the decline of the number of school districts in North Dakota (Sell and Lestriz, 1997). 78% of the 256 districts in North Dakota were accredited in 1970 while 20 years later in 1990, 96% of the 208 districts were accredited (North Dakota Department of Public Instruction, 1994). In 1995, all 186 public high school districts were accredited.

Summary and Transition

This second chapter of this thesis has looked at seven different sub-topics of the general topic of school consolidation. The underlying themes of the literature reviewed have been focused upon the debates over school size and transportation issues. Having considered this general literature, the situation for North Dakota was presented briefly. Consequently, Chapter II has been the part of the thesis in which the researcher has provided the underpinnings for the methodology of the study which is presented in the next chapter.
CHAPTER III

METHODS

Overview

There are six parts to this chapter, including this overview, which is the part of the thesis that highlights the overall explanation of the rationale as well as what methods of research were used by the researcher. The second section of this chapter is a clarification of the selection of the particular case study area. Then, there is the section which includes the explanation of why a case study approach is valid for this research. The next part of this chapter is focused upon the value of a qualitative methodology and its connection to the survey approach. The fifth part of the chapter is an explanation of how the survey was undertaken and utilized a questionnaire that specifically focused on the schools districts covering the North Dakota towns of Hebron, Glen Ullin, Richardton, and Taylor. Contacts were made through the members of the each of the district’s school boards as well as their respective superintendents and principals. The importance of the four research questions is presented in that next-to-the-last section of this chapter in terms of the overall methodology and operational approaches. The final part of Chapter III is a summary and transition section, a brief review of the contents of the chapter and a connection made to Chapter IV, the case study. Having finished the overview to this chapter, it is appropriate now
to provide a brief statement about the selection of the specific school districts for this case study.

Groundwork

These sites were chosen due to the author growing up and attending school in Hebron, North Dakota where she was a member of the senior class of 2005. During her years in middle school, the school experienced a sharp decline in sports participation. This also was happening in the schools of Richardton-Taylor and Glen Ullin. Special meetings during the year of 2001 were called to make the decision on whether or not to engage in cooperative agreements (co-op) for sports or to consolidate altogether. After much discussion, it was decided to undertake the co-op option for sports with Glen-Ullin, although the issue of consolidation of the schools was viewed as something that could happen in the near distant future.

Case Study

This research is a case study. A case study is a method of studying elements of the social through comprehensive description and analysis of a single situation or a case (O’Leary, 2004). It is detailed and the emphasis is often placed on understanding the unity and wholeness of the particular case.

A case study is way of organizing social data so as to preserve the unitary of character of the social object being studied (Goode and Hatt, 1952). Case studies allow for in-depth exploration and investigate the context and setting of a situation (O’Leary, 2004). The situation being the impacts school consolidation
has on the issues of transportation and population and the North Dakota communities of Hebron, Glen Ullin, Taylor, and Richardton, as the settings.

Qualitative Research

Qualitative research is done to understand populations. The goal is often a richer understanding that may come from the few, rather than the many. Applicability comes from the “lessons learned” that might be applicable in alternative or broader populations (O’Leary, 2004). Researchers working with qualitative data can follow size guidelines required for minimal statistical analysis. It is important to note that the qualitative nature of this research does rely upon pertinent statistical background. Archival data, notably from the United States Census, provided basic information on the demographics of the cities involved in this thesis’s case study. Archival data from the North Dakota Department of Public Instruction was the essential source for obtaining the information regarding the changes of numbers of school district numbers and specific school enrollment populations.

Surveys

The primary component of the methodology for this research is surveys. Surveys are defined as “information gathered by asking a range of individuals the same questions” (O’Leary, 2004). The type of survey used was an explanatory one, meaning it went beyond description and attempted to establish why things might be the way they are (O’Leary, 2004). The questionnaires for the particular survey also were self-administered which allowed the participants to maintain confidentially and anonymity.
Participants were selected on the criteria of being part of the school districts’ school boards or being the principal and/or superintendent of said school districts or residents of the communities involved.

The sampling method used for this study does not follow the procedures of a random or probability sample technique. The technique that this study used is what O’Leary (2004) calls “handpicked” sampling. Handpicked sampling involves the selection of a sample with a particular purpose in mind.

The survey (Appendix A) was designed with the target population in mind as they are the main decision-makers when it comes to deciding whether or not to consolidate a school. Ten questions were structured with specific answer choices while five were open-ended. Five questions inquired about who should be involved in the discussion and other questions addressed the maximum amount of time students in various grades should be traveling to/from school on the school buses. One question was used to ask the respondents to rank the factors of school consolidation from important to least important. Two questions were included to allow the participants to provide comments on this topic: those conditions that either would encourage school consolidation or would discourage it. Two questions were written so to elicit comments on the role(s) played by transportation in school consolidation, and one question asked respondents to comment on how different time zones are a concern to decision-makers in considering the pros/cons of a school consolidation.

The survey was approved by the Institutional Review Board (IRB) at the University of North Dakota which oversees research. When one studies human
subjects, the IRB weighs any risks and benefits the proposed research may have on the study group. Additionally, the study goals and purposes were explained thoroughly to the IRB. Furthermore, the study procedures, study sites, data storage and subject population were all disclosed to and evaluated by the IRB.

The surveys were distributed through the United States Postal Service in the mailings done in April of 2012. Questionnaires were prepared for 30 citizens as the sample size. The surveys were designed to answer the following main research questions:

Question 1: When deciding on consolidation, does a difference in time zones play a part with which school to consolidate?

Question 2: Does distance and time play a part for transportation routes in school consolidation?

Question 3: Who should be the stakeholders to be making the decision for school consolidation?

Question 4: What factors play a part in school consolidation?

Summary and Transition

Chapter III is that part of the thesis that has provided the underlying rationale and explanation of the methods employed in this research. The four main sections of the chapter have highlighted the following: 1) the groundwork for the selection of the case study; 2) the importance of taking a case study approach; 3) the value of the qualitative methods as the overarching methodology; and 4) the use of the survey approach as the operational means of engaging in the research for undertaking a means to answer the four research
questions of this survey. By utilizing such a set of methods, it allows the researcher to obtain the data that is analyzed and presented in Chapter IV. This is the penultimate chapter of the thesis and follows next so that the reader can learn what are the results of the survey and the analysis of those results as they relate to the decision-making process of potential school district consolidation involving the three school districts of the case study.
CHAPTER IV
RESULTS/DISCUSSION

Overview

This chapter is the penultimate part of the thesis in which there is the presentation of the research results as well as the discussion of said results. Following this opening section, there is a part of Chapter IV which includes a brief historical geography of the case study area plus short vignettes regarding the four communities in the case study. The third section of Chapter IV is the clarification of the limitations for this qualitative study’s data collection. The fourth part of this chapter is the presentation of the data in its analyzed form. It must be remembered that this part of the chapter is where the researcher has included the discussion of those results according to findings for each of the four research questions. It should be noted that the four key research questions are addressed according to the protocols of this qualitative oriented human geography research. The final section of Chapter IV is a summary and transition in which the reader will find a brief synopsis of the chapter coupled to an introduction to Chapter V. Now that this overview has been provided, it is useful to consider the historical geography of the case study area and to focus part of the text within this next part upon the four particular communities being researched. Because this thesis is more a case study of the modern time period of issues of school consolidation,
the reader should not be surprised that there are only the highlights of the region’s historical geography which is based upon Appendix C.

Case Study Locations

*Brief Historical Geography of Western North Dakota*

The case study is situated within what is known as Western North Dakota, i.e., it is west of the Missouri River plus is truly within the Great Plains physiographic region of North America. Instead of providing the reader a thorough historical geography of the case study back to the Paleo-Indians of 10,000 BCE, the timeline is limited to only the mid-19th century through early 21st century. Appendix B provides a more detailed perspective on this topic.

Prior to the 1880s, the area was in a pre-pioneer phase. That is because between the creation of Dakota Territory in 1861 and the completion of the Northern Pacific Railroad to what is now the North Dakota-Montana border, most inhabitants either were nomadic indigenous tribal members, mainly Siouan, or transient Euro-Americans and European immigrants headed to the Montana gold fields.

The 1880s to 1920s were decades of “normal” cycles of “wet” and “dry” years which helped influence whether or not a farmer or rancher had a “good” or “bad” year respectively. Many Euro-Americans and European immigrants were recruited specifically to come to the region. As a consequence of this migration, many one-room school houses were established. Gradually there were consolidations of some of these single building, small elementary school districts into multi-room buildings and somewhat larger school districts that included high
schools. The major forms of transportation to/from these school sites was by walking, horseback riding or using some form of horse-drawn transportation; automobiles and early school buses were the exception between 1900 and 1920 or so anecdotal evidence indicates.

Ecological catastrophe during the 1930s for the region as part of the Great American Dust Bowl was hard to survive for many farming and ranching families. Still, however, there were numerous school districts operating in the area.

The 1940s, 1950s, and 1960s were the time of return to “normal” boom and bust cycles of economic activity which continued to be influenced by “wet years” and “dry years”. The local post-World War Two baby boom helped to justify upgraded and expanded school physical plants.

The 1970s, 1980s, and 1990s were the decades that “normal” boom and bust cycles continued, but these times also are associated with youth out-migration and aging-in-place. Declining school enrollment meant the need to consider reducing the number of school physical plants and increasing areal coverage of school districts to operate with sufficient enrollments in response to pressures of “best practices” nationally and incentives from the various governmental entities at the state level in North Dakota.

By the early 21st century, the case study area is just enough east of the current oil boom in the Williston Basin to be in a marginally-affected zone when it comes to population expansion in response to the employment opportunities in the greater region. Now there is a serious need to rethink how to develop
Hebron in an agricultural and manufacturing community located approximately 62 miles west of Bismarck. It is right on the border of Stark and Morton counties in Western North Dakota. Nicknamed “The Brick City” in part due to now having the only brick factory operating within North Dakota, Hebron was founded in the spring of 1885 adjacent to the Northern Pacific Railroad’s transcontinental rail line. Hebron was named after the Biblical vale of Hebron in Palestine by Rev. John L. Kling and Rev. J.G. Koch (Skwork, 1984).

One consequence of having the Northern Pacific Railroad running right through the town, it was easy for settlers to arrive and make Hebron their home. On August 6th, 1904 the Hebron Fire & Pressed Brick Company was organized, making it one of the oldest manufacturing concerns in North Dakota (Skwork, 1984). Demand for building supplies was flourishing, and by 1905 Hebron Brick hit full production, competing with 18 similar brick businesses. Today, Hebron Brick Company is the only manufacturer of brick in North Dakota and one of the most successful brick companies in the Upper Midwest.

Hebron Public Schools

The history of Hebron Public Schools began in the fall of 1886 when arrangements were made for the opening of a public school. Since there was no building, the school board secured the use of the St. John Evangelical and Reformed church building. It was 1909 that school enrollment data first was
recorded; it stood then at 175 students and growth continued to climb steadily, with the enrollment for the 1916-1917 school year at 371. However, the enrollment declined during the 1917-1918 school year to 313 (Skwork, 1984). Such a fluctuation over two academic years is surprising and is not readily explained because 1917-1918 is just before the impact of the global flu pandemic which was more likely to cause death among those in the age cohorts between 20 and 40, not among school-aged children. Future research might be appropriate to determine whether this is wide difference in numbers, particularly when enrollments bumped-up it to over 400 after 1918-1919, is simply a recording error or the consequence of local out-migration and/or some local outbreak of a deadly childhood disease.

Through 1920-1935, the school enrollment stayed in the 400s, with 1920 having 475 students, dipping down to 409 students in 1930 and climbing back up to 433 in 1935. The last years of the Great Depression saw high enrollment with 477 students in 1937, however, by 1941 this had dropped to 433 (Skwork, 1984). After WWII, the enrollment started to grow again and 1950 was a census year in which 436 students enrolled. The highest enrollment ever recorded at Hebron Public School was in 1953 with 520, but after that school year, the enrollment slowly started to drop (Figure 2).

The Glen Ullin Colony was organized in Morton County, North Dakota. It was situated on the main line of the Northern Pacific Railroad, sixty miles west of Bismarck. A local land agent, Major Alvin E. Bovay was one of the founders of
Glen Ullin

Glen Ullin. He chose the name from one of his favorite pieces of literature, “Lord Ullin’s Daughter.” The word Glen is a Gaelic word meaning valley, decided because of the location, in a beautiful valley or a glen (The Glen Ullin Historical Society, 1983). On August 6, 1883, the townsite was platted. School enrollments for the Glen Ullin district are illustrated in Figure 2.

Richardton

Way stations were normally established by the Northern Pacific Railroad Company for their convenience. During the summer of 1881, what is now Richardton was established and called Spring Valley Station. In 1882, there was growing interest about this area and the agents of the enterprising firm, The Hamburg-American Steamship Co. of New York, picked this area to be the
“Richardton” after the head of the firm, Oscar L. Richards (Richardton 75th Anniversary Committee, 1958). Part of an already combined school district, the school enrollments for Richardton are combined with Taylor and illustrated by Figure 3.

Taylor

Founded as a Northern Pacific Railroad station in 1881, Taylor originally was named Antelope (Wick, 1988). However, as Wick (1988) has explained, the name was changed in 1882 in honor of David Russell Taylor, an official with the railway passing through this community who also established a drug store in the community. During its heyday prior to the Terrible Twenties and the Dirty Thirties (the agriculture recession and economic depression respectively of the 1920s
and 1930s), Wick (1988) has noted the total community population was at 285 in 1920. This is considerably larger than the current community population of 148, cited in the Census of 2010.

Figure 4. School enrollment at Richardton-Taylor Public Schools.

Limitations

Although 30 respondents were sought in the original research plan, it was necessary to scale-back the sample size when it was learned just how many actual school board members and school officials would be available for the pool of respondents; it is interesting to note, however, how many total students have been overseen by these school board members and school officials over the past 12 years (Figure 4). Consequently, only 25 surveys were mailed out with 8 responding back, giving a 32% response rate. The surveys were mailed specifically to the school board members of the three schools as well as the superintendents and principals of those schools.
Question 1: When deciding on consolidation, does a difference in time zones play a part with which school to consolidate?

Only one respondent said that a difference in time zones was a “deal breaker” while others said it played a difference but it was not necessarily a deal breaker as Hebron is co-oped with Richardton-Taylor for wrestling and football but both are on different time zones with Hebron on Central Standard Time and Richardton-Taylor being on Mountain Standard Time.

Respondent 2 stated that “we have experienced this in our football and wrestling programs. It takes a toll on students and parents. It causes some delayed practices from some students and late evenings for other students. This affects sleep routines and time for homework which also effects the classroom. The concern in(sic) mostly noticed by elementary and Jr. High students and their
parents.” Respondents 5 and 7 supported what Respondent 2 noted by saying respectively “anything that deals with time factors has a huge impact—especially on K-3 grades” and “waking up time, going to bed time and starting practices later” are some issues parents do not want. Respondent 1 said something similar regarding this matter: “huge factor for how early one town has to start their day, trying to decide which time zone will the school start on”, both should be on the same time zone in order for a consolidation to work.

While the responses above all seem to say different things, the overall gist of the comments from all respondents is that they agreed that a time zone difference does have an effect on student academic performance based upon what they are witnessing with the co-op with Richardton-Taylor for two sports. If there were to be a consolidation between these two schools, there would be a need for one time zone and potential push for Richardton-Taylor to go on Central Standard Time considering Hebron is part of Morton County which, along with the county seat of Mandan as well as the rest of the county, is on Central Time.

For a future study, it would be interesting to further investigate the time zone influence, to see if a change in time zones is a make or break deal in school consolidation. North Dakota is unique in the sense that it has two time zones. An overview to the historical geography dimensions of the time zone circumstances in North Dakota is presented in Appendix B.

**Question 2: Does distance and time play a part for transportation route in school consolidation?**

There were three questions on the survey that asked about the maximum time that various grades should be on a school bus either to or from school. The
categorization of school grades was subdivided to reflect the elementary, middle school, and high school groupings respectively of K-4, 5-8, and 9-12.

Thirty-eight percent of the respondents said that 45 minutes was the maximum time students in K-4 should be on a school bus either to or from school while two respondents (25%) said 30 minutes, another two respondents (25%) said 60 minutes and one respondent (12%) said 90 minutes when asked to select the time limits. Fifty percent said that 45 minutes was the maximum time students in grades 5-8 should be on a school bus either to or from school, while 25 percent (two respondents) said 60 minutes, 12.5% (one respondent) said 30 minutes and 12.5% (one respondent) said 90 minutes. For the grades of 9-12, fifty percent said that 45 minutes was the maximum time students in those grades should be on a school bus either to or from school, while 25 percent (two respondents) said 60 minutes, 12.5% (one respondent) said 30 minutes and 12.5% (one respondent) said 90 minutes.

Going into this study, the preconceived notion of the researcher was that 30 minutes would be the ideal time for all students to be on a bus. It also was thought by the researcher that perhaps 60 minutes might be possible as the “ideal bussing time” for the students that are in grades 5-8 or 9-12 as they are older and theoretically can handle being on a bus for a longer period of time. It is also interesting to see that one respondent said 90 minutes was the maximum amount of time for every grade, which would mean the student(s) would be on
Table 1. Responses to questions regarding length of time on a school bus.

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<th>Responses (N=8)</th>
<th>Percentages</th>
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<td><strong>The maximum amount of time that Grades K-4 should be on a bus either to or from school is:</strong></td>
<td></td>
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<td>15 minutes</td>
<td>0</td>
<td>0%</td>
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<td>30 minutes</td>
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<td>45 minutes</td>
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<td>60 minutes</td>
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<td>25%</td>
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<tr>
<td>75 minutes</td>
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<td>0%</td>
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<tr>
<td>90 minutes</td>
<td>1</td>
<td>12%</td>
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<table>
<thead>
<tr>
<th></th>
<th>Responses (N=8)</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The maximum amount of time that Grades 5-8 should be on a bus either to or from school is:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 minutes</td>
<td>0</td>
<td>0%</td>
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<tr>
<td>30 minutes</td>
<td>1</td>
<td>12.5%</td>
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<tr>
<td>45 minutes</td>
<td>4</td>
<td>50%</td>
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<tr>
<td>60 minutes</td>
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<td>25%</td>
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<tr>
<td>75 minutes</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>90 minutes</td>
<td>1</td>
<td>12.5%</td>
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<th></th>
<th>Responses (N=8)</th>
<th>Percentages</th>
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<tbody>
<tr>
<td><strong>The maximum amount of time that Grades 9-12 should be on a bus either to or from school is:</strong></td>
<td></td>
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</tr>
<tr>
<td>15 minutes</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>30 minutes</td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>45 minutes</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>60 minutes</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>75 minutes</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>90 minutes</td>
<td>1</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

the bus for three hours a day. Such a response to this question makes the researcher wonder if the person did not understand the question (meaning they thought the question related to asking for total time) or, in fact, they do not mind students being on a bus for that long period of time, regardless of grades/age.

Asking “What is the role of transportation as an element to consider in school consolidation?” was a question that was included on the survey, and fifty percent of the respondents stated that there definitely is a “role” of time and the
length of time students will be on a bus in such decision-making vis-à-vis school district consolidation. Respondents 1, 5 and 7 simply stated that the time that it takes to travel to school(s) and how long students should have to sit on a bus played a huge role while Respondent 2 said that if a student has to “ride the bus for an hour, it impacts their day, their school/activity involvement, and overall education”.

Respondent 4 gave a whole different perspective on distance and time, “It’s important, but not a primary concern. If schools are close enough to consolidate, additional time for bus students is negligible. The consolidated district might have higher transportation costs, but those are offset by overall budget savings”. Respondent 8 said it was not a huge factor, but length of time on the bus still is important to think about as a factor.

Distribution of school patrons and students apparently has an effect on transportation routing. Thirty-eight percent of the respondents said that length of time and the distance the bus will have to travel has an effect on transportation, having an effect on activities and participation. Respondent 2 went even further, saying that with “open enrollment it may be closer for some students to attend a different district”.

Another thirty-eight percent of the respondents said that existing routes will have to be changed, especially in rural areas and that the distribution of students in rural areas has the most impact. Respondent 1 said, “In the rural areas there can be a lot of driving to just pick up a couple students in the country as they can be many miles apart. When consolidating, you may not be able to
downsize in # (sic) of buses since students can live far apart” while Respondent 2 stated that “obviously, existing routes will have to be changed so that students travel in the most direct path to the new school”. Respondent 8 said that “routes will have to be changed according to population needs”. This finding is similar to research from Hanley (2007) which indicated that school district planning/consolidation problems have mainly been focused on minimizing travel distance. Rural school districts, such as the ones surveyed, have low student densities that are distributed over large areas, thus qualifying for busing as they live far away from the schools and in turn force any future consolidated school district to add more busing and longer routes.

**Question 3: Who should be the stakeholders to be making the decision for school consolidation?**

Approximately 75% of the respondents strongly agreed that it is important to have the school board members as part of the discussion and decision making. When it came to the question of the importance of students and their families being part of the discussion and decision making, 88% of the sample population strongly agreed, and when it came to the question that if the bus drivers should be part of the discussion and decision making, only 25% of the respondents strongly agreed. However, only 50% of the sample population said that it was important for the school teachers and support staff as part of the discussion.
Table 2. Response to questions regarding who should be decision makers in school consolidation.

<table>
<thead>
<tr>
<th>Response</th>
<th>Responses (N=8)</th>
<th>Percentages</th>
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</thead>
<tbody>
<tr>
<td>For a place to function as a community it must have a school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>3</td>
<td>38%</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>38%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>2</td>
<td>24%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>It is important to have school board members as part of the discussion and decision making on school consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>Agree</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>It is important to have students and their families as part of the discussion and decision making on school consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>7</td>
<td>88%</td>
</tr>
<tr>
<td>Agree</td>
<td>1</td>
<td>12%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>It is important to have bus drives as part of the discussion and decision making on school consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>Agree</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>It is important to have school teachers and support staff part of the discussion and decision making on school consolidation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
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</table>
The respondents of this survey were mostly members of the school boards of the towns surveyed. Many of the members that serve on these community school boards are also parents who have children in various grades, so it is not surprising that 75% and 88% of those individuals who were surveyed responded the way they did. However, it was interesting to see that only half said it was important for the school teachers and support staff to be part of the discussion and decision-making in school consolidation as these are the ones who may have their jobs in jeopardy.

**Question 4: What factors play a part in school consolidation?**

Approximately 75% of the respondents said that the most important factor in deciding a school consolidation was declining school enrollment and 50% of those in the sample said the least important factor in deciding a school consolidation was open enrollment.

The respondents went even further when it came to the opportunity for sharing of their thoughts on factors that encourage as well as discourage enrollment. All of the respondents mentioned that school enrollment numbers/declining enrollment encouraged school consolidation. Four respondents also said that the triple combination of money issues/budget constraints/the cost of maintaining a school also generally encourages school consolidation while four respondents said that not enough youngsters eligible for athletic opportunities encourage school consolidation.

Five respondents said that the distance between towns and travel time generally discourage consolidation, three of those same respondents as well as
another two people in the sample said that the triple factor of old rivalries, community feelings, and towns losing their identity discourage consolidation.

It was not surprising that most of the respondents said that distance between towns and travel time generally discourage school district consolidation but might be a factor in a student opting for “open enrollment” outside the assigned school district. Rural western North Dakota still has a spatial distribution of family farms and ranches that are generally widely dispersed in terms of locations of farmsteads and ranchsteads, so children have to go a long ways just to get to the school in town. Thus, consolidating with a town that might be 20 miles away definitely would add on extra mileage and time being on a bus.

Being that the areas surveyed are small towns, it was not surprising that the possibilities of a particular town losing its identity and old rivalries would be an issue in the discouragement of consolidation. Perhaps Hebron would not have to worry about losing its identity due to having the brick factory and Glen Ullin has a nursing home, so each community would still have some prominent feature in the local economy to help preserve its local “identity”.

As for factors that encourage school consolidation, before doing this study, the author did not take in account as fully the significance that would existing that money/budget constraints was a major issue. Hence, it was interesting to see how just budget constraints can play a part in deciding school consolidation for a future study.

One surprising find was that 50% of the respondents said that open enrollment was the least important factor when it comes deciding on school
consolidation. Open enrollment means that students can switch schools if they want to, whether the school is five miles away or fifty miles away and one would think that it would be one of the more important factors when it comes to deciding upon a school consolidation. If more people were surveyed (parents, teachers) it would be interesting to see if this stayed on the least important side or jump up to one of the more important factors.

Summary and Transition

Chapter IV has been that chapter which has included the researcher's findings and discussion of those findings. In order to put the findings and discussion into an appropriate context, the chapter was opened with an exceedingly brief historical geography of the region of Western North Dakota in general and of the four communities of Morton County and Stark County in which the issue of possible school consolidation is a matter of concern. Then, the analysis of the findings as well as the discussion were grouped into sub-sections contingent upon the four research questions being asked using the questionnaire that was administered to the sample population in Hebron, Glen Ullin, Richardton, and Taylor. Consequently, the next chapter, Conclusions and Recommendations, is focused upon reflections concerning these findings and related discussion. Thus, Chapter V is the other “bookend” to Chapter I and commences on the next page.
CHAPTER V
SUMMARY OF FINDINGS

Overview

This chapter is the researcher’s summation of the research and a review of the presentation of the findings per the protocols of this type of qualitative research in human geography. The underlying themes are predicated upon how the author began this study with looking at the increasing numbers of schools that are consolidating at the national, regional and local levels. Thus, following this overview of Chapter V, the results of the survey are reviewed for the communities of Hebron, Glen Ullin, Richardton, and Taylor in western North Dakota which were viewed as near-perfect case sites because of their small total populations and associated small school enrollments. Most importantly, they were also rural communities undergoing significant socio-economic pressure in part due to the latest boom in energy development, notably oil, in the Williston Basin. A set of rhetorical questions regarding the general conclusions of the researcher are provided in the section following the review of the results of the survey. The section following that is a statement concerning the study’s significance and recommendations for future research. The chapter ends with some final observations of the topic given by the researcher based upon reflections of this experience of studying her home region.
Results of Survey

The school board members, superintendents, and principals of the schools in these communities were selected as the sample for respondents of a short qualitative survey. The methodology for data collection included that questionnaire because this is a common research method used by social science researchers. The data was obtained, analyzed, presented, and evaluated to determine persisting and significant themes, providing the background in which there was a discussion that featured a more fully explained set of answers to the four research questions.

As noted earlier in this thesis, based on the responses from the survey participants, these communities are categorized as being truly rural. The majority of the respondents overwhelmingly were members of the school boards of these community schools. Based upon the overall set of responses, the issue of a difference in time zones will be a challenge if the communities of Richardton, Taylor, and possibly Hebron decide to consolidate in the future. While the comments of the respondents reveal that this situation is not a “deal breaker”, it definitely is going to be something that decision-makers will have to face. Then, too, there will be the expectation among all the stakeholders that dealing successfully with a difference of times zones will not adversely affect the students’ academic performance beyond what these communities are seeing already. It appears that currently there is a heavy toll on student academic performance of individuals involved in athletics and supporting aspects such as the cheerleading squad and marching bands due to the day-to-day stresses of
handling two different time zones in order to attain success athletically in the co-op these school districts have for football.

Distance between schools as well as time on a bus seemed to play a huge part in how to answer the part of the survey concerning how to be deciding on with which schools to consolidate, remodeling current physical plants, or even a building of one “super school”. No matter what grade of student was considered it was viewed by the respondents that 45 minutes was the ideal time for students to be on the bus TO or FROM school in addition to the school hours, i.e., a total of one hour and 30 minutes for the regular school day journey. This possibly could be one of the main factors in deciding school consolidation’s issues of which school to consolidate with or where to build a new school.

If a need for school consolidation does arise, the majority of respondents indicated that the school board members as well as the parents and students should be part of the discussion and decision making. It is not surprising that that the majority respondents said parents and students should have input; these are the stakeholders who are affected greatest by consolidation. In particular, it can be speculated that if the students are not happy, there will not be participation in extra-curricular activities which in turn would have negative consequences to the overall quality of life of the specific communities, e.g., no high school basketball games to watch due to insufficient participation of the eligible students, both for the boy’s and the girl’s teams.

Rhetorical Questions and Observations

Many factors play a part in school consolidation and for any school in rural
America; the main factor probably will be declining enrollment. There also will be ongoing efforts to have a response to this question: Why would you want to consolidate your school if your enrollment is not declining? Indeed, there are other factors that encourage school consolidation. Schools need money to operate and usually a decline in budget makes schools look for options to keep their schools alive.

Yet, it must not be forgotten, in these small rural towns there often is not enough for entertainment. Some forms of entertainment, e.g., first-run movies, could be an hour or two away in a much larger community such as Bismarck. Therefore, having extra-curricular activities such as a football team, wrestling program, and/or music programs keeps youth involved, gives them something constructive to do, and hopefully keeps them out of trouble. It also gives the participating students a chance to earn scholarships for college and university in the future.

However, there are factors that also discourage consolidation. Distance and travel time is a huge one, as these rural towns can range from five to fifteen miles apart. Furthermore, some families still have that small town pride and do not want to consolidate with a town that was a rival thirty or more years ago.

Responses and comments from the participants clearly demonstrated the major issues with school consolidation. All stated that transportation and travel distance were one of the key issues in school consolidation, but there were no comments or replies of NEVER wanting to consolidate in the future.
Study’s Significance and Recommendations for Future Research

This thesis is a contribution to the growing body of work dedicated to research on school consolidations in rural areas. There is somewhat limited research on such school consolidation on the national, regional and local level which is why this case study from North Dakota has significance beyond the four communities in the Williston Basin.

There were problems encountered during this research process. Some advice to future researchers would be to ensure that sufficient time is set aside to gather the primary data. Also, sending out surveys to a larger group of people and sending them out to their home addresses would be a more effective way to gather the data. Going out to the schools, visiting with people of the community as well as a wide variety of students and school employees, and focusing on more face-to-face research would give a researcher a better edge when trying to obtaining a satisfactory amount of data necessary to be collected for more extensive research.

However, this study can be a starting point for future work to gain even more detailed results. The research questions, methods and questionnaire also could be changed appropriately to meet the needs of a future survey-oriented study. Emphasis should be made upon common research methods that can be used to obtain primary data necessary to expand this kind of academic study.

Meanwhile, the findings of this research also may be of use to the school board members, superintendents, and those involved in school consolidation as they continue to work to provide a better education with multiple benefits to our
youth. By knowing if a school’s enrollment is dropping and is continuing to drop, those involved can plan better for the future. Also, by being aware and understanding the concerns that people have with school consolidation, the decision-makers can make plans tailored to a specific need or issue of the particular stakeholders. As noted earlier, transportation time and distance is a major concern with school consolidation, particularly in the Williston Basin according to this study. Addressing this essential need first could help all the stakeholders prepare for a smoother transition later in a school consolidation.

Final Comments

As noted in the first chapter of this thesis, North Dakota historically has gone from educating its youth in numerous one room schools to providing learning environments in much larger schools which are the product of a series of school consolidations. Currently in the state legislature and the North Dakota Department of Public Instruction, there continues to be sometimes not so subtle pressure to consolidate school districts on the grounds of promoting increased economic and educational efficiencies. This is an outgrowth of non-local past encouragement to school districts to undertake consolidation as a process of more than cooperating in athletics. Reflecting upon earlier statements in this thesis, it cannot be forgotten that North Dakota is part of the Great Plains; there are substantial similarities throughout this region with youth out migration and aging-in-place.

Yet, there also is the Williston Basin Oil Boom having an influence upon these school districts. Thus, the energy boom in the region seemingly has an
impact on this area causing the populations in this area to rise ever so slightly. This population growth might provide enough students to fill the schools so that consolidation is not such a "hot button issue. However, nothing lasts forever and in past years, energy booms have gone to energy busts, causing people to migrate out and look for employment elsewhere, taking their children with them as noted in the first chapter of this thesis. Thus, presenting this case study on Western North Dakota gives a balancing perspective on this topic seeing as how in Chapter II the literature review was based upon studies focused upon Upstate New York as well as Iowa and Arkansas with relatively little literature on school consolidation in the Great Plains.

Unfortunately, declining school enrollments will continue to be a significant part in North Dakota’s school districts. However, given with the recent oil boom in the western part of the state, school enrollments are starting to rise and pick up. However, these schools are not growing as fast as school officials would like to see. Also, nothing lasts forever, and unfortunately there is no set time on how long this oil boom will last, making it hard to plan for the future. It is hoped that if a consolidation would happen, those involved will put the students’ academic needs first and use those needs to make the appropriate decisions on consolidation. Sports are important, yes, but knowledge is power. While it is nice to win a sports championship, excelling in academics is even greater and a more accomplished feeling. Our past rivals could just as well give us new classes and clubs that could benefit our students and we could do the same.
Perhaps, we will have younger people going off to college and making their former high schools proud!
Appendix A
Survey Form

Research Subject
and Survey Consent Information
Title: Impacts of Transportation and Population upon Western North Dakota School Consolidation
Principal Investigator:
Angela Kitzan
P.O. Box 9020
Department of Geography
University of North Dakota
Grand Forks, North Dakota 58202
Phone: 701-777-4248
E-mail: angela.kitzan@my.und.edu

My name is Angela Kitzan. I am a graduate student in the Geography Department at the University of North Dakota. As part of a research project to complete my Master’s thesis, I am conducting a survey of school administrators and school board members to assess factors that play a role when deciding to consolidate schools.

I would appreciate your participation in this survey. It should take about 10-15 minutes. Upon completion, please return this survey by using the enclosed self-addressed and stamped envelope provided to Angela Kitzan, the principal investigator. Returning this survey to the principal investigator means that you consent to participate in this survey. All responses are confidential and will not be shared in any way that can identify you. Survey participants are not required to sign a consent form. However, this page with consent information page should be retained by the participant. The completed survey forms will be kept in a locked file with only the principal investigator, the research advisor and people who audit Institutional Review Board procedures having access to the data. The survey forms will be retained for a three-year period and then be destroyed by shredding.

If you have any questions about the research, please contact Angela Kitzan at 701-777-4248 or Dr. Devon A. Hansen 701-777-4587. If you have any other questions or concerns, please call the Institutional Review Board at 701-777-4279.
1) For a place to function as a community, it must have a school.
   ____Strongly Agree   ____Agree   ____Disagree   ____Strongly Disagree

2) It is important to have the school board members as part of the
discussion and decision making on school consolidation.
   ____Strongly Agree   ____Agree   ____Disagree   ____Strongly Disagree

3) It is important to have students and their families as part of the discussion
and decision making on school consolidation.
   ____Strongly Agree   ____Agree   ____Disagree   ____Strongly Disagree

4) It is important to have bus drivers part of the discussion and decision
making on school consolidation.
   ____Strongly Agree   ____Agree   ____Disagree   ____Strongly Disagree

5) It is important to have school teachers and support staff part of the
discussion and decision making on school consolidation.
   ____Strongly Agree   ____Agree   ____Disagree   ____Strongly Disagree

6) The maximum time that Grade K-4 students should be on a school bus
either to or from school is...
   ____15 minutes ____30 minutes ____45 minutes ____60 minutes ____75
   minutes ____90 minutes

7) The maximum time that Grade 5-8 students should be on a school bus
either to and from school is...
   ____15 minutes ____30 minutes ____45 minutes ____60 minutes ____75
   minutes ____90 minutes

8) The maximum time that Grade 9-12 students should be on a school bus
either to and from school is...
   ____15 minutes ____30 minutes ____45 minutes ____60 minutes ____75
   minutes ____90 minutes

9) Students in high school with drivers’ licenses and access to their own
   vehicles make it easier to consider school consolidation.
   ____Yes ____Maybe ____No

10) This part of the survey asks you to rank factors of consolidation from most
    important to least important. The factors are: the location of patrons, co-
oping of sports, open enrollment, declining school enrollment, school site location and keeping grades all in one school/one place. Please put the factors in your chosen order below.

1______________________________________________________________ (most important)

2______________________________________________________________

3______________________________________________________________

4______________________________________________________________

5______________________________________________________________

6______________________________________________________________ (least important)

1) What are the factors that generally encourage school consolidation?

2) What are the factors that generally discourage school consolidation?

3) What is the role of transportation as an element to consider school consolidation?
4) How does the distribution of school patrons and students effect transportation routing?

5) How do extraneous conditions such as a difference of time zones have particular concern to school consolidation?
A number of counties are set within what historically has been known as Western North Dakota because they are situated west of the Missouri River and are truly within the Great Plains physiographic region of North America. In terms of the geomorphology, the area in question includes parts of the Missouri Couteau and all of the Missouri Plateau plus the Little Missouri River Badlands. The climate is semi-arid, the natural vegetation is mid-to-short grass prairie, and the soils are more so the drier and relatively less fertile mollisols. It is more so a steppe environment than people realize when contemplating the agricultural potential of the region.

While it is tempting to present to the reader a thorough historical geography of the region that begins with the earliest periods of pre-European contact, i.e., the Paleo-Indians of 10,000 BCE, the timeline is limited to only the mid-19th century. Taking into account the importance of the economic development associated with the railways and Euro-American settlement, the first year of importance is 1861 which is when the area became part of Dakota Territory. Located on one of the routes to the gold fields of Montana, what is now Morton and Stark counties of North Dakota was crossed by gold-seekers and in an area of contention between the indigenous people and the United States Army which was protecting the Euro-Americans trekking westward.

The area was on the surveyed route of the Northern Pacific Railroad, but its economic development was stymied temporarily by the Panic of 1873 which forced the railway to remain temporarily stopped at Bismarck. Construction resumed gradually in the mid-1870s and resulted in the temporary terminus for the Northern Pacific Railroad reaching what is now the North Dakota-Montana border by 1881. However, cattle ranching was become established in the late 1870s in the area.

During the 1880s through 1920s, the region went through a series of booms and busts with respect to Euro-American and European immigrant settlement. The region was part of the expanding Cattle and Wheat Zone of this part of the American Great Plains. Euro-Americans and European immigrants were recruited by the Northern Pacific Railroad to be the people from whom the railway would draw its local traffic to support its transcontinental line which was completed in 1883. Meanwhile, the need for schools for the children of the pioneers was being met through the operations of numerous one-room county school houses which were within walking and horse-riding or horse-and-wagon type transportation. These small, usually white-painted frame buildings literally
dotted the landscape. Farm families and ranch families were large during this time period in part because of the need to "grow your own" labor in a pre-intensive mechanical era of agriculture. This especially was a situation for the Germans-from-Russia ethnic group which had been recruited specifically from what is now the Ukraine because of this particular set of immigrants having been successful as agricultural immigrants to the steppes of the Russian Empire.

Unfortunately, the pioneers learned the hard way that this region was not always the garden in the grassland as proclaimed by the advertising literature of the railway land developments. There were tremendous economic fluctuations that were influenced in part by the cycles of "wet years" interspersed with "dry years" that either helped or hindered agricultural development. The wet years were more so boom times because sufficient precipitation was available to result in profitable wheat production and cattle-raising. The dry years were more so bust times because insufficient precipitation meant drought with drought meaning local economic collapse coming with poor wheat harvests and feed-related problems of keeping cattle operations profitable.

The 1930s is most associated in Western North Dakota as a period of extended bust times, particularly because of the environmental degradation of the conditions best known as the Great American Dust Bowl. This was a dreadful time in which there was substantial need for an assortment of government relief programs, including the Civilian Conservation Corps and the Works Progress Administration. One consequence of this ecological catastrophe was out-migration from the region as a whole, but the one-room rural school house and the early consolidated elementary schools held-on plus in some communities there were existing high schools that were rebuilt through the Works Progress Administration throughout the Great Plains, including some in Western North Dakota.

The 1940s and 1950s are often seen as periods of return to more "normal" boom and bust cycles in terms of weather conditions influencing agricultural productivity. While located within the Williston Basin, a major geological region relative to the prospecting for oil as well as successful oil well development, this part of the Williston Basin did not experience as much shift into an energy-based economy in the early-to-mid 1950s as did counties north of the Missouri River such as Williams County. Thus, farming and ranching continued to be dominant as the drivers of the local economy. Meanwhile, the children born of the post-World War II baby boom were growing-up and were in sufficient numbers to justify shifting the educational infrastructure from the remaining one-room schools to high numbers of consolidated elementary schools and to an increasing number of upgraded high school physical plants.

Perhaps the 1960s would be considered the "Golden Age" of Western North Dakota’s agricultural-oriented settlement pattern. The number of school-aged children was sufficient to justify not only the remodeling of most of the physical plants of most K-12 school districts, but there were additions made to many school buildings. Definitely, the 1960s were a decade wherein the local high school was not just the center of the social life of its students but that of the entire community, especially when it came to the importance of athletics, notably
basketball. Indeed, this part of the state is legendary in terms of the number of championship teams for the Class B state basketball tournaments for both boys and girls over the years but notably in the 1960s.

The period of the 1970s through 1990s was one in which there was the start of a major downward slide in school-aged population as well as increased out-migration of the high school seniors to opportunities beyond Western North Dakota even though there was an oil boom between 1973 and 1982 in the counties along or close to U.S. Highway 85, notably Billings, Golden Valley, Stark, McKenzie, Williams, and Mountrail. Often, these young people did not return to their home communities after completing post-secondary education or serving stints in the armed forces. Consequently, a downward cycle of fewer and fewer school-aged children meant a decline in school enrollments which in turn triggered school consolidations. The settlement pattern shifted, too, in the rise of the number of ranching and farming families that “moved into town” so that the children of these families could benefit from being in the communities without constantly having to be commuting for education and recreation. Slowly but surely, the number of school districts decreased but the areal extent of the remaining school districts expanded. Also affected by this population shift were the distribution of rural and small town churches. Furthermore, improvements in roadways, not the least of which was Interstate 94, helped to change shopping patterns with more emphasis upon the retail opportunities in the larger communities such as Williston, Watford City, and Dickinson with more and more travel being made into Minot and Bismarck.

During the latter part of the 1990s and through the first decade of the 21st century the part of the region, e.g, Morton County, has been that part of Western North Dakota just enough to the east of the edge of the Oil Boom activity focused upon the Bakken Formation and the Three Forks Formation not to receive direct benefits, notably in rapid population growth. That county also is just enough west and south of the edge of the coal field development and related thermal electrical generation plants not to see people coming there to obtain employment and to establish families to be the future students of the local school districts. Thus, there are communities such as Hebron and, Glen Ullin that presently are better candidates for studies of aging-in-place than of in-migration and community expansion. Yet, even in Stark County there are places such as Richardton and Taylor which are having population issues even though closer to the oil fields.

There is no doubt that the cultural landscape of Western North Dakota is changing. This manuscript is simply a starting point for more extensive study of this part of the Peace Garden State. As such, it reflects the observations of the author based upon slightly more than three decades of travel through that region and numerous conversations with K-12 teachers, religious leaders, business leaders, and the “old timers” with whom he has had interaction on an assortment of field trips into Western North Dakota. Therefore, the reader is encouraged to go explore this region and learn more about what currently is a part of the Peace Garden State being in a “boon and bane” situation with respect to energy development.
Current Sources (Under Development)

http://library.ndsu.edu/exhibits/text/greatplains/text.html
http://www.worldatlas.com/webimage/countrys/namerica/usstates/ndtimeln.htm
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Note: This manuscript is a work-in-progress but may be used as a reference by undergraduates, graduate students, faculty colleagues, and the general public in this rough form. Please request that it be sent by e-mail and cited as a “Personal Communication” from the author when in the bibliography of research papers, theses, dissertations, and other scholarly works.

http://www.netstate.com/states/links/nd_links.htm
Appendix C
A Vignette on the Evolution of Time Zones in Western North Dakota

Work-in-progress to be submitted to the website journal of the UND Center for Community Engagement
A Vignette on the Evolution of Time Zones in Western North Dakota

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One of the unique elements of any research and planning for community development in North Dakota is the need to take into consideration the impact of any case study being located astride two times zones: Central Time Zone and Mountain Time Zone. While this manuscript is not a study of time zones per se, it is important to have available to potential researchers a brief examination of the historical geography of this temporal means of subdividing the earth’s surface as it relates to the Peace Garden State. Globally, the development of time zones in the modern era can be traced to the work of Sir Sandford Fleming, a key administrator of the Canadian Pacific Railway in the late 19th century. It took, however, the Meridian Conference of 1884 for there to be sufficient worldwide agreement that the demarcation of the earth to be fairly similar to the lines of the time zones as we now know.

The underlying rationale for the creation of these subdivisions was to promote safer and more efficient transportation, notably among the burgeoning network of steam-driven railways. The four most important time zones east-to-west for the United States developed as the Eastern, Central, Mountain, and Pacific. Gradually, Dakota Territory started to become crossed by railroads, most notably the Northern Pacific Railroad which pushed westward starting in 1871 from Fargo to Goose Creek (Casselton), Second Crossing of the Sheyenne (Valley City), Fort Seward (Jamestown), and Edwinton (Bismarck) by 1872. Edwinton became re-named Bismarck in 1873 by the railroad company in a bid to attract German investors as well as settlers from the newly established German Empire. Unfortunately, the Panic of 1873 caused financial disruptions such that the Northern Pacific Railroad experienced a bankruptcy and needed to slow its westward progression.

Once the Northern Pacific Railroad reorganized and recapitalized, the rail line eventually was pushed across the Missouri River. The decision to locate the railway repair shops in Mandan had some interesting ramifications in that the boundary of the time zones was such that Bismarck would be in the Central Time Zone whereas Mandan would be in the Mountain Time Zone. Eventually, the boundary of the Central Time Zone was pushed beyond Mandan and to its present location as a consequence of the need for more efficiency in the local
trade hinterland as well as the commuter shed for the places of manufacturing and service sectors of the economy. Periodically during the late 20th and early 21st centuries, there have been efforts to change the time zone boundary between the Central Time Zone and the Mountain Time Zone to even farther west of its present line of demarcation, e.g., the request in 2009-2010 for putting Mercer County into the Central Time Zone because of its increased connections eastward that have been associated with the local coal gasification facility. Unlike previous attempts, this one was successful and adopted officially on November 7, 2010.

Will North Dakota ever be entirely in the Central Time Zone? This depends in part upon what transpires in the Williston Basin relative to the current oil boom. Then, too, there are issues to consider about what would happen if the Mountain Time Zone is shifted westward from its current location in North Dakota in terms of dealing with those parts of western South Dakota which might and most likely would be remaining on Mountain Time. It must be noted that the extreme western set counties of Kansas and many counties in western Nebraska also are presently on Mountain Time. Consequently, the research for this thesis does have implications for school districts not only in the case study but in other parts of the Great Plains.

Why should this topic be of concern to people interested in community development? Because meeting planning as well as the logistics of attending events can be complicated by misunderstandings as to the “correct time”. People who live adjacent to the boundary of the Mountain Time Zone and the Central Time Zone are aware of such issues. However, individuals who live increasingly farther from that boundary line are less likely to appreciate the nuances of clarifying if the starting time for a teleconference or a face-to-face meeting is set for Central Time or for Mountain Time. It is challenging enough to discuss topics of mutual concern that require people to come together in community development, but doing so when dealing with two different time zones should not emerge from being a mildly vexing item to becoming a real complication when attempting to be engaged in cooperation. Is this issue a “tempest in a teapot”? Perhaps to some people, but until one has experienced the frustration of being either too early or too late for activities in this zone along two time zones, you do not begin to realize just how important it is to know the “correct time” in the Peace Garden State!

Current Listing of Sources
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http://www.timetemperature.com/tzus/central_and_mountain_time_zone.shtml

Note: This manuscript is a work-in-progress but may be used as a reference by undergraduates, graduate students, faculty colleagues, and the general public in this rough form. Please request that it be sent by e-mail and cited as a “Personally Communication” from the author when in the bibliography of research papers, theses, dissertations, and other scholarly works.
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