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# On the Cusp: A School District and Two Communities Respond to an Oil Pre-Boom

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# ON THE CUSP: A SCHOOL DISTRICT AND TWO COMMUNITIES RESPOND TO AN OIL PRE-BOOM

by

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Vincent Genareo
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The more I live and learn, the more I realize how
intelligent and wonderful these people are.

## ABSTRACT

This case study is an investigation of the attitudes, perceptions, and reactions of school staff and community members in a rural pre-boom school district. In the early stage of an oil boom, real and perceived disruptions commonly occur in the schools and communities that are affected. The preparations and responses that residents make to the changes may determine the community's future success, so understanding the impacts in the initial pre-boom growth stage is vital. Using qualitative methods of interviews, participant observations, and document analyses, this study researched 41 participants in a rural school district and two communities. The literature review and data investigation were framed partly around the Social Disruption Hypothesis, and the analysis suggests that the oil pre-boom stage impacts space, teaching and learning, and causes social disruptions. These three affected areas contribute to and are influenced by the uncertain future that accompanies boom cycles. Individual variables seem to determine community member responses to a boom, and these participants responded to change by supporting, resisting, or deserting their communities. The school district was challenged with transient students, changes to funding, teacher workload, and teacher paradigm shifts in the way they viewed their future instruction. Community support for the schools, as well as peer acceptance of new students, remained strong. Community contexts, including history, physical location, and types of growth, may partially explain differences in residents' preparations and reactions. Recommendations for community planning, school teaching and administration, and university preparation of preservice teachers are provided.

*Key Words:* oil boom; pre-boom; boomtown; Social Disruption Hypothesis; community identity; community attachment; acceptance; student transience; community context

# CHAPTER I

## INTRODUCTION

With advanced drilling technologies and an ideal economic climate, oil production in North Dakota has recently skyrocketed, providing new jobs, population growth, and an enormous fiscal stimulus for the state. However, this development is not unprecedented and historically poses great benefits and risks for the areas that are directly impacted by the industry. The successful communities and schools are often those that adequately prepare for the rapid growth early on, which includes updating or building infrastructure, businesses, and educational facilities. Since rural areas face challenges from isolation, resident attitudes, traditions, and uncertain futures, planning for change and making the necessary investments can be a complex and difficult process.

In distinguishing between rural and urban areas, the United States Census Bureau (USCB, 2011) defined urban areas (UA) or urban clusters (UC) as those having a population density of over 1,000 people per square mile, although certain exceptions can be made. Rural areas were anything below 1,000 people per square mile. Nearly all of North Dakota is considered rural according to this designation (USCB, 2010). Alternatively, some define rurality in qualitative terms, including interpersonal closeness, tradition, support, and sense of community (Gjelten, 1982). Regardless of the definition, rural areas frequently face immense and impending challenges to keep the schools and communities operational.

Significant numbers of communities in the Midwestern United States, including most North Dakota rural areas, have experienced gradual population declines over the last century (McGranahan, 1999; United States Census Bureau [USCB], 2000). Nationwide trends indicate that "population loss stems from a decline in economic opportunities in traditional rural industries" (McGranahan & Beale, 2002, p. 3). Farming regions are generally remote and lack population density and amenities necessary for increased development, which makes them prone to lose residents due to out-migration or low birth-to-death-or-migration rates (McGranahan & Beale, 2002). Amenities include recreational sites and characteristic physical features such as "climate, topography, and water area" (McGranahan, 1999, p. 1). Without amenities or economic opportunities, a majority of young people is likely to leave small towns upon graduation. Typically, many academically successful rural students leave their hometowns for a college education, resulting in a rural "brain-drain" (Carr & Kefalas, 2009, p. 5). With few prospects of post-secondary education or entertainment venues for young people, there may be no reason for youth to stay, continuing the cycle of population decline and eventual rural extinction.

However, rural areas occasionally manage to stabilize or increase population. People who benefit from growth often welcome it. Community tradition and context determine growth attitudes, perceptions, and reactions (Brown, Dorius, & Krannich, 2005), and may influence the willingness of local residents to accept new people. When the growth occurs too rapidly, communities and schools may struggle with planning and supporting the newfound population, particularly if community members do not accept

the changes**.** For the purpose of this study, towns that experience rapid economic, social, or population growth will be referred to as boomtowns. Community changes resulting from boomtown growth have been studied empirically since the 1970s.

## Background

During the 1970s and 1980s, researchers began to dedicate literature to rapidly changing economies in rural areas resulting from energy resource extraction (Brookshire & D'Arge, 1980). Sociologists and economists found that South American and African countries experienced high poverty levels due to mineral mining and American researchers investigated similar effects in the United States (Frank, 1967). The Middle East oil embargo in the 1970s forced many American communities to begin developing their own sources of energy, from coal mining to oil drilling (Jorgensen, 1981). These rushed energy extractions were known as energy booms or oil booms, and towns in which they were located were referred to as boomtowns because of the "sequence of sharp increase and rapid decrease in the population of a town or region" (Olien & Olien, 1982). Boomtowns can appear due to mining, energy, tourism, agriculture, manufacturing, or other job-producing industries, but this study will focus on energy-based boomtowns, particularly oil drilling areas. Research conducted during the 1970s and 1980s indicated that rural oil boomtowns usually followed a fairly predictable cycle, regardless of the reason for the population increase (Freudenburg, 1992).

The pre-boom, or anticipatory stage, occurs prior to the most intensive boom stage and is marked by community speculation, rumors, planning, and the acquisition of large amounts of mineral land rights by oil companies (Olien & Olien, 1982). There is

much preparation and little population growth during this stage, since drilling has not yet occurred and brought with it the flood of workers. Community members' attitudes and perceptions of the boom may be their most negative during the pre-boom stage as they face new community changes (Brown, Geertsen, & Krannich, 1989). Next, oil crews rapidly appear to begin drilling wells. Once production is secured, oil companies attempt to drill wells as quickly as possible and move on. "The rapidity of drilling campaigns accounts for both the flood effect of incoming population and the relatively short duration of oil booms" (Olien & Olien, 1982, p. 6). This is known as the peak-boom stage (Smith, Krannich, and Hunter, 2001). When the drilling is completed, most oil workers are no longer needed and usually move away to their next job. Unlike mining, which needs workers to continue production, the oil industry only requires a large amount of human capital during the drilling process. Only occasional maintenance by a small number of people is needed while the wells extract oil. Once the supply has been depleted or the price of oil shifts to make drilling no longer economically feasible in an area, the production ceases and the boom often ends, or busts. This marks the beginning of the post-boom stage in which towns may face recovery and sustainability challenges (Brown, Geertsen, & Krannich, 1989).

An oil boom began in North Dakota in 2008. The state nearly quadrupled annual crude oil production between 2004 and 2010, from approximately 31 million extracted barrels to 112 million barrels, including an increase of 32 million barrels between 2009 and 2010 alone (Rathge & Olson, 2010b). In 2012, it surpassed California to become the second largest oil producing state in the United States, behind Texas. Twenty-eight oil

formations in North Dakota were active in 2012, the largest accessible one being the Bakken Shale Formation, which is nearly two miles underground in some areas. In 2010, the Bakken Shale Formation contained 2,116 wells and produced over 75% of North Dakota's total oil (North Dakota Department of Mineral Resources [ND DMR], 2011). By November 2012, there were about 4,500 wells drilled and accounted for over 90% of North Dakota's oil production (Cashman, 2012). The Three Forks Formation, which is believed to be the lowest region of the Bakken Shale Formation, may contain a significant amount of the formation's oil (ND DMR, 2011). As of 2012, Three Forks Formation drilling was increasing and many speculated it was a source of even greater oil extraction in the future (Nordeng, 2012). Figure 1 is a map of the likely boundaries of the Bakken Shale Formation (in blue) and Three Forks Formation (in yellow) in North Dakota, Montana, and South Dakota. The red line indicates the Williston Basin, the large geographic sedimentary deposit in which the Bakken Shale Formation, Three Forks Formation, and other formations exist (Demas, 2013).

This oil boom resulted in a population influx from the jobs that were available in the area. While the rest of the country suffered through up to 8% unemployment in 2012, the oil industry in North Dakota created over 30,000 energy-related jobs in the state since from 2008-2012, and even more in retail, health, education, and industrial sectors (Tyson, 2012c). Thousands of jobs remained unfilled in the western part of the state over these years as companies invested significant capital into drilling wells in the Bakken Shale Formation. Some state officials estimated that North Dakota's population could increase from 683,932 in 2011 to over a million people in subsequent decades (Tyson, 2012c).

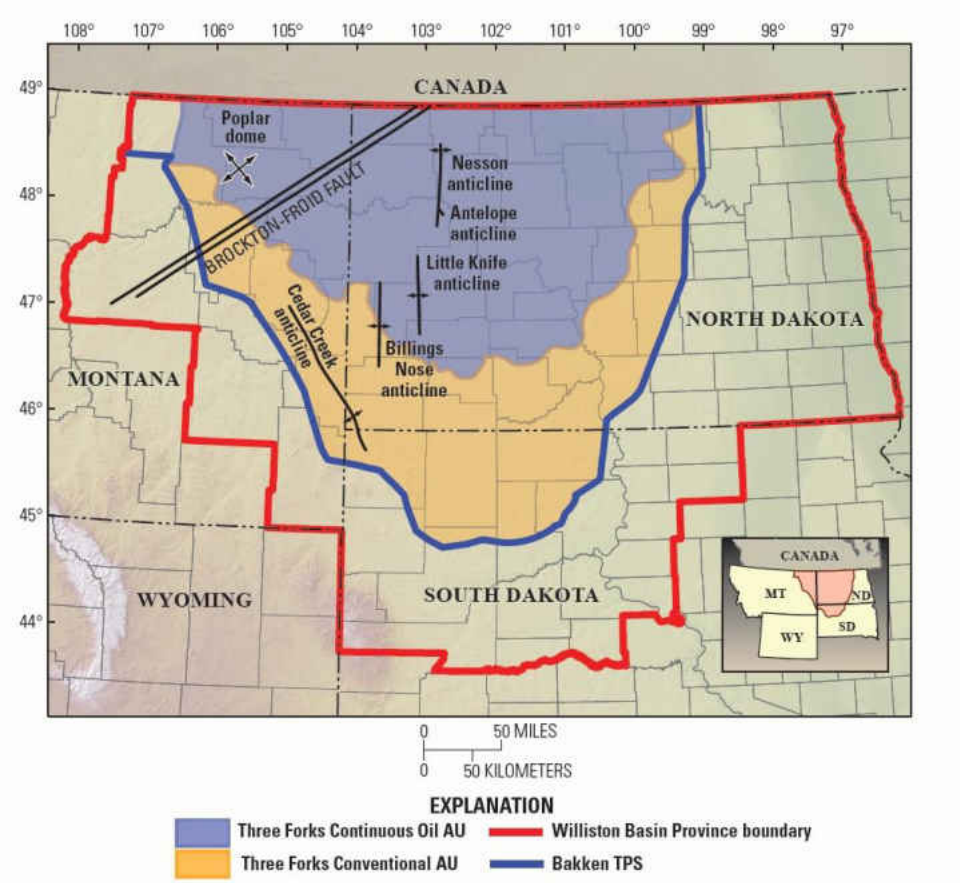



Figure 1. Bakken Shale Formation and Three Forks Formation Map (Demas, 2013)

The United States Geological Survey (2008) projected that there were "3.65 billion barrels of oil, 1.85 trillion cubic feet of associated/dissolved natural gas, and 148 million barrels of natural gas liquids in the Bakken Formation" (p. 1). Its potential was more recently assessed to be 7.4 billion barrels of recoverable oil, 6.7 trillion cubic feet of recoverable natural gas, and 500 million barrels of natural gas liquids (Demas, 2013, paras. 1 & 7). Haggerty (2012) believed that 48,000 wells will need to be drilled to recover this oil, and that "33,000 wells will be drilled in the next 15 to 25 years, with 5,000 of these coming in the next two years as companies rush to secure leases at low prices" (p. 7). Once the technology makes it economically feasible to drill the Three

Forks Formation, North Dakota may have the potential to become the largest oil producing state in the country.

Energy booms were not new to the state. According to the North Dakota Historical Society (2008):

> An influx of workers and capital caused population explosions in western cities, such as Williston, Dickinson, and Watford City, and some municipalities went deeply into debt to provide local services to the new residents. However, when world-wide oil prices declined in 1981, many oil workers moved on, and some localities found themselves without the means to pay off large debts incurred for municipal improvements. (para. 3)

The present oil boom was again impacting this same area.

To ensure future developmental and educational success for rural boomtowns, the communities must take into account the available human and financial capital and develop a plan of maximizing infrastructure, economics, and affordable housing. The challenge is doing this while keeping costs low enough to maintain during and after the population increase (Reeder, 2009). Infrastructure includes the community resources related to "transportation, telecommunications, water, and energy" (p. 1) and is often a costly investment for small communities. Determining the impact of development and population influx is important for community and school growth and survival.

Schools are the core of rural towns. Communities usually do anything necessary to keep the school operating because "the final death knell sounds when there are no longer enough children to keep the doors of the area school open" (Carr & Kefalas, 2009, p. 2). Community members' attitudes about the changes to their towns are an indicator of the success of schools during population booms, and the decisions they make in the pre-boom can affect their successful growth (Ross & Green, 1979). Therefore, it is important

to understand the attitudes, perceptions, and reactions of rural community and school members during a time of new change (Brown, Dorius, & Krannich, 2005; England & Albrecht, 1984). Two such schools and communities exist in North Dakota.

Dorian County is a quiet, rural farming county in North Dakota that is home to a consolidated school district. Major-Minor (M-M) School District includes two consolidated schools in two separate communities: Major School (K-12), located in Major, ND, had 332 students in 2011, and Minor Elementary School (K-6), located in Minor, ND, had 42 students in 2011. There was very little racial diversity within the schools. As of 2010, all Minor Elementary School students were Caucasian, and Major School had only a total of nine students who were African American, Hispanic, or Native American, the rest being Caucasian (North Dakota Department of Public Instruction [ND DPI], 2010).

Dorian County historically declined in population, from 7,840 people in 1910 to only 2,227 people in 2000 (USCB, 2000 & 2009). However, between July 2008 and July 2009, Dorian County was only one of 16 counties in the state that experienced a positive net in-migration, which is the difference between population moving into an area and those moving out (Rathge & Olson, 2010a). This was exciting news for a county that had traditionally suffered net out-migration, up to 20 percent a decade, which followed the state's overall trend (USCB, 2000). Due to its location in the Bakken Shale Formation and on a busy oil transport highway, Dorian County is in the beginning of a boomtown cycle, or the pre-boom stage.

It is sometimes difficult to classify the exact boundaries of boomtown stages until longitudinal analyses have been performed after the boom cycle is well underway or complete (Brown, Dorius, & Krannich, 2005). Although it has experienced some residential, commercial, and industrial growth, there is not yet rapid Bakken Formation drilling occurring in Dorian County, which brings large numbers of oil workers and pushes communities into full, peak-booms (Olien & Olien, 1982). The county also has not desperately needed to build a large number of homes, hotels, and apartments to respond to extreme housing shortages, like other peak-boomtowns in the state have (Petersen-Klein & Borjon, 2011). Additionally, the county's growth data estimates the peak population will occur in 2025, with approximately 40% more permanent residents. Therefore, Dorian County is not quite yet in a peak-boom (but simply a growth stage), and is classified in this study within the late pre-boom stage, but on the verge of booming in population and economics (according to all estimates). Two communities and schools in Dorian County are responding to early stages of growth and preparing for a potential future peak-boom.

### *Minor, ND*

Minor is a town of less than 300 residents. It is remotely isolated from shopping districts, the closest being almost 70 miles away. It was founded in 1904 and the first school was organized that year. At that time, there were three banks, five bakeries, eight restaurants, three drug stores, and two furniture stores. Many other businesses and recreational activities appeared in the city to accommodate the new population of railroad workers. The population growth occurred due to the availability of farmland, and

happened more rapidly than most towns in the area. Additionally, oil was discovered, drilled, and extracted near the town early in its history. In 1965, the last school was built in Minor, which is still used today. The following year, the community added a gymnasium on the school that could seat nearly 1,000 people.

Today, "rural" best describes this community. It is truly small. Minor is surrounded completely by fields of grain crops, such as wheat, barley, and durum. In the winter, Minor's roads get snowed over and packed down by vehicles since the city does not own a plow. One community volunteer owns a pickup truck with a plow attachment and may clear the main roads if there is substantial snow accumulation. There are few cars on the roads of Minor during the day, except for morning and afternoon when parents drop off and pick up their children at the school.

The community is comprised mainly of elderly residents and farm families with children. However, local residents have seen new, oil industry-related residents buying Minor homes, walking streets, and frequenting local businesses. Minor industries and businesses include an agricultural equipment manufacturing facility, a hardware store, a bank, an insurance office, a post office, a bar, and a restaurant. The elementary school is located at the edge of the town.

### *Minor Elementary School*

Minor Elementary School is the smaller of the two schools in the rural M-M School District. Although previously a K-12 school, Minor students, beginning in grade seven, now get transported 19 miles to Major for classes. Minor Elementary School is a K-6 school with about 42 students and six teachers. The Kindergarten class had only five

students until the start of the 2011 school year, when three more classmates joined. That year, the school began with eight new students. Four students moved to Minor because of the oil industry, and the other four came because of a flood that displaced students from nearby towns.

For a school the size of Minor, this is a welcome change, and represented about a 20% growth. Since the consolidation, the district's plan had been to close Minor Elementary School and educate all of the students in Major School. The declining student population seemed to be making that a reality until the recent pre-boom growth. Residents realized that an already declining community would surely not recover from the school closing.

The school, however, is in dire need of updates such as a new boiler. If the student enrollment decline had continued, it would be more economically advantageous if the M-M School District shut down Minor Elementary School and bussed all of the students 20 miles to Major School. The administration was presently faced with a difficult decision resulting from community growth and increasing student numbers in Minor Elementary School. The superintendent felt the decision to close Minor Elementary School was complex and the variables were immense: fuel costs, salary costs, bus purchases, renovation and updates for both schools, and student numbers, among others. It is known, however, that bussing costs are enormous. Of the 183 school districts in North Dakota, M-M School District ranks in the top 20 for student transportation costs, at well over $400,000 a year (ND DPI, 2012). The unknown future can make planning extremely difficult in pre-boom and boomtown districts.

The school plays a vital role in the community life of Minor residents. As a show of the school and community support, in 2012, the Parent-Teacher Organization (PTO) hosted a silent auction fundraiser for a past graduate of the former Minor High School who was diagnosed with cancer. Many residents felt as though they shared a strong bond resulting from their experiences in Minor. Twenty miles from Minor is the community of Major, ND.

### *Major, ND*

Founded in 1901, Major, ND is a rural agricultural community in North Dakota with a population of about 850 people. Major initially experienced rapid growth due to the desired farmland in the area. Within a year of its establishment, there was a post office, bank, restaurant, and pioneer store. Until 2009, Major continuously declined in population from its founding size, with few brief exceptions. Oil growth is not new in the region.

Major experienced oil booms in the past that did not end well for the community. In the 1950s, and again in the late 1970s, a boom affected the same area that was impacted during this study (Blumle, 2000). Young workers flooded the town and filled up the trailer parks, the motel, and the bars, and built new houses. Crime and oil traffic increased. In 1982, the boom busted and workers left in a rush (Blumle, 2000). Homes and businesses were left empty, which crashed the housing market. It did not recover for fifteen years, according to several community members. Investments made by the city, businesses, or individuals were paid for years to come.

In September 2010, the first license was granted to an oil company to drill the Bakken Shale Formation on private land near Major. At the time of this study, three Bakken Shale Formation wells were operating in Dorian County, each run by a different oil company. There was a probability of a very high oil output in the near future in this area, because in February 2011, an oil drilling company obtained mineral rights to 15,000 net acres of land in Dorian County. The Bakken Shale Formation and Three Forks Formation are directly below Dorian County, and the oil is available to companies that want to invest in extracting it. Major planners are waiting to see if this happens. Once oil companies drill the wells on the western side of the state, they may begin to drill in Dorian County, likely by 2014, according to state officials at the North Dakota oil impact planning meetings. This did not mean that growth had not yet begun in Major. The town's location was a factor in its growth.

Major is within an hour drive from Big City, a large boomtown, which has many government and retail jobs, oilfield jobs, cultural events, and a university. Major had long been a bedroom community to Big City. Prior to the last five years, Major was a welcome respite from city life for parents who wanted to raise their children in a small town. In the last five years, new residents moved into the community, most who could not find places to live in the now-overpriced peak-boomtown Big City. In addition, some of the fastest growing boomtown communities in the country are located within a 60-mile radius of Major in other directions.

The growth that Major experienced from 2010 to 2012 was not because of new oil drilling, but due to the spillover from the region's incessant and aggressive growth. The

high wage potentials lured workers from across the country. "The average annual wage for North Dakota oilfield service workers was over $76,000 in 2010" (Davies, 2012, p. 4). When workers moved to North Dakota with nothing but a bus ticket and hope, many, if they had families, did not bring them since the housing shortage was critical. A highway that oil trucks use as a main transportation route runs through the heart of Major. Major accommodated the oil industry by opening up hydraulic equipment maintenance shops and providing industrial areas for oil businesses.

There are six apartment buildings and a few duplexes in Major, but most of the residential facilities are single-family homes. New houses are being built in Major and there is consistently some sort of construction happening on preexisting buildings in the town, whether commercial, industrial, or residential. A recently zoned residential area has seven new, single-family homes located on gravel roads within the newly expanded town limits. These homes are selling for higher than state average, particularly in a rural, isolated area, averaging $240,000 for three bedrooms, two bathrooms, and no basement. The median home price in North Dakota is about $112,000 (North Dakota Statewide Housing Needs Assessment, 2012). According to a local real estate agent, housing costs, which include both rent prices and home prices, have doubled, tripled, or even quadrupled in and around Major since the oil boom began.

Four churches operate within the town limits. Downtown Major is located on Broadway, which is also the intersecting highway. There are about 20 businesses that line the road, including a flower shop, several banks, a post office, bars, and restaurants. Traffic on Broadway is traditionally sparse, but has steadily increased with oil truck

traffic over the past year. There is a billboard along a highway outside of Major city limits that, until 2011, contained only the word, "Smile." In 2011, however, the billboard was changed to a picture of an oil truck and oil company logo that read, "Now Hiring Drivers" and supplied a phone number.

A large gas station on the edge of the community is commonly lined with oil trucks waiting for fuel or supplies. Behind the gas station are hundreds of large bags of hydraulic fracturing (frack) sand ready to be picked up by semi trucks. A chemical spill by one of the trucks was noticeable next to the frack sand bags because of the large, grassless spot in a grass field. A 10-foot tall model oil rig is on the lawn of a business on the edge of town near a Major School state basketball championship sign. The city motel is often lined with cars, campers and recreational vehicles (RVs) parked in the lot, and nearby a trailer park is full of about 15 trailers of all shapes and sizes, placed very closely together, with large pickup trucks and oil trucks parked in and around the park. It is common in this area for RV parks to break fire and health codes due to the overcrowded conditions and human waste disposal issues (Petersen-Klein & Borjon, 2011).

Next to the trailer park is the industrial park, which has a new sign indicating the companies operating there. Oil companies such as hydraulic construction and maintenance services have purchased nearly all of the industrial buildings. Outside of the town limit is the county airport that once provided farmers access to crop spraying airplanes, and is sometimes used to offer workers access in and out of the oil fields. The county recently upgraded the airport from three to seven hangars, storing three airplanes apiece, and, in late 2012, began widening and lengthening the runway to allow corporate

jets to land. Airport updates are a distinctive element of infrastructure development in boomtowns in this region (Petersen-Klein & Borjon, 2011).

In 2010, the city repaved Broadway and updated the sewer and water system as a response to the new growth in the community and surrounding area. Around this time, oil truck traffic through the town increased. Oil trucks, which were uncommon around Major, even with its past oil drilling activity, moved out of the isolated Bakken Shale Formation region and passed through. They carried oil and chemicals through the region, and transported oil to the nearest refinery in Canada. Large oil industry-related trucks were common in this region and averaged "26,000 times more damage to the road surface than a passenger vehicle" (Petersen-Klein & Borjon, 2011, p. 2).

In 2011, Major leaders, including business owners, the city council, county commissioners, and citizens conducted meetings every month for four months to develop a comprehensive plan for the future. The City of Major Comprehensive Plan was compiled by an outside consulting agency of engineers and helped the city rezone for growth and plan for necessary resources. This plan included strategies for commercial growth, business recruitment, tourism development, zoning, and budgeting. It was a response to the possibility that the oil growth was going to impact the community to the extent of the surrounding boomtowns.

In 2012, 19 oil-producing counties in the state joined Forward Thinking, a consortium to allow for planning and collaboration. County planners, including job developers, city leaders, and county commissioners, met every four to six weeks with state officials to discuss their situations and the future. Forward Thinking, as part of the

paid membership in the consortium, provided counties with a strategic plan for development. During the Dorian County Strategic Planning Committee meeting in September 2012, the county addressed its needs for growth. The consortium, with the help of the state Department of Mineral Resources, estimated that over the next 10 years, Dorian County and two neighboring counties could expect 2,000 to 2,500 new oil wells as the drilling moved east. This was a much higher estimate than what was presented at the two previous planning events and would cause an enormous amount of population and economic growth in this rural county. The state has offered financial assistance to Dorian County to update its infrastructure and Major School.

### *Major School*

Major School is the larger of the two schools in the M-M School District and educates 160 students in grades K-6, and 172 students in grades 7-12. In North Dakota, schools define their size by their athletic programs. Major School is a Class B school, which is the smallest district class in North Dakota. According to the North Dakota High School Activities Association (2012), Class B schools have a combined high school (grades 9-12) enrollment of 324 or less students. Teachers in Major School educate all K-12 students in one building.

In 1903, the first school was established in a small shack in Major to teach 23 students. According to a county historical document in the Dorian County Museum, the largest class graduated from Major School in 1934, with 41 students, and the school had gradually lost population since. The current school has 54 classrooms and offices. Major School is still the hub of the community, and nearly all of the M-M School District

extracurricular events take place at the school's facilities, with the exception of Minor School elementary basketball games. Major School also hosts most other large events that take place in the community, including an annual regional farming implement show, concerts, regional music festivals, and large funerals.

Major School has seven elementary teachers, two special education teachers, a speech coach, an instructional coach, two Title teachers, and a music teacher (who is shared with Minor Elementary School). There are ten middle and high school teachers in the high school wing, which is a single hallway. In 2010, the administration updated Major School's heating system to include an electric boiler, as well as an energy efficient lighting system throughout the school (personal communication, M-M School District Superintendent).

The Major School student enrollment increased in 2011 as a result of both the oil growth and a nearby flood that displaced students throughout the area. There were 40 new students at the start of the 2011-2012 school year. By the end of the school year, the student population had increased by 35 from the beginning of the year as the rotation of a transient student population cycled through. With this increase in enrollment, the administration had to split the kindergarten classroom to lower the student-teacher ratio.

Although the school initially had money in the general fund to spend on required updates, oil impact grants and loans from the state were available to the regional schools. Oil drilling and retrieval is often taxed at the federal, state, and local levels. These taxes bring in tremendous revenue to the state. The new students that flood into an area during an oil boom can cause stress on teachers, school infrastructure, and space. In an attempt

to help schools and communities on the west side of the state, North Dakota Governor Jack Dalrymple (2011):

> submitted a two-year, $9.3 billion spending bill that includes a $1 billion surplus, cuts property and income taxes by $500 million, replaces $265 million of federal assistance on human services, adds $55 million to the higher education budget and $82 million to the public schools budget, and sends $958 million back to the state's 17 oil-producing counties for infrastructure improvements in order to avoid local indebtedness on necessary construction projects (as cited in Petersen-Klein & Borjon, 2011, p. 2).

The M-M School District has annually received a portion of state impact funding since the oil boom began in North Dakota in 2008. The administration applied for and received several substantial oil impact grants to help them build and update their buildings and buy busses. They obtained over $100,000 in energy impact grants from the state fund to purchase new school busses required for the added transportation of new students and about $150,000 a year in oil appropriations in 2010 and 2011 (Schramm, 2011).

Since the oil boom hit western North Dakota in 2008, the towns of Major and Minor needed to respond to the population, economic, and industrial expansion that were beginning to occur. The growth in these two communities increased steadily over the previous four years, impacting Major more than Minor, but placing both towns firmly in a pre-boom stage, waiting to see what the future held. A timeline of all oil-related growth impacts for the Dorian County, Major, and Minor is following. The data from the growth-related events came from local newspapers, documents, and interviews. Table 1 indicates growth events that occurred in the area of this case from 2008-2011. Table 2 lists the monthly growth-related events in 2012.

Table 1. Timeline of Oil Pre-Boom Growth, 2008-2011

| Year | Description of Event |
|---|---|
| 2008 | The oil boom began in Western North Dakota. |
| 2009 | Major convenience store owner purchased Major Motel because of the growing market and extra land to store frack sand.<br>Dorian County officials planned for road repaving due to oil traffic and surrounding growth. |
| 2010 | Personal investor built sixty storage units in Major as a response to the oil boom.<br>Major convenience store owner purchased frack sand for trucks to use and transport to well sites.<br>City of Major Comprehensive Plan meeting held to plan and prepare for the oil boom growth.<br>City of Major made contact with landowners on the edge of the city to rezone outward.<br>Major repaved Broadway (the highway) due to heavy oil truck traffic.<br>Major Beautification Committee established to maintain aesthetics through the growth.<br>Dorian County repaved all roads wider and thicker to accommodate more weight.<br>Dorian County added extra gravel to all county roads. |
| 2011 | Major medical clinic added space for additional providers, including a women's health provider.<br>Oil business opened in Minor specializing in mineral leasing.<br>Major convenience store added another line of diesel fuel pumps without an overhang to allow for larger oil trucks to fuel.<br>Major rebuilt a new fire station and emergency medical services station to accommodate the increased traffic in the county.<br>Six new homes constructed in Major.<br>Major and Minor both added noise ordinances to ban engine breaking within city limits in response to the oil truck noise within the communities.<br>Major School bought a four-plex apartment for teachers who could not find housing.<br>Major School hired three additional teachers.<br>Major School began with nearly forty new students.<br>Minor convenience store owner added an extra fuel pump to accommodate oil traffic.<br>Minor Elementary School began the year with eight new students.<br>Dorian County passed an 18-month moratorium on crew lodges, or man camps.<br>Dorian County paid for a specialist to be certified as a nurse practitioner due to surging patient numbers at the Major medical clinic. |

Table 2. Timeline of Oil Pre-Boom Growth, 2012

| Month | Description of Event |
|---|---|
| February | City of Major rezoned the city to add residential areas and make available industrial areas as a response to a housing shortage.<br>Three new houses began construction in Major; construction company created the policy of building an additional house for every new house sold in Major to stay ahead of the demand.<br>City of Minor got infrastructure evaluated by a planning committee; $5.8 million in updates were needed. |
| April | New restaurant and bar opened in Major.<br>Major clinic began the process of hiring a third physician's assistant and sending a specialist once a week to Major medical clinic, since it recently became the busiest clinic in regional hospital system. |
| June | Forward Thinking monthly planning meetings for the counties, including Dorian County, offered across the state. |
| July | Highway between Major and Minor got resurfaced to accommodate heavy oil traffic.<br>Major School hired two additional teachers. |
| August | New restaurant and club opened in Major.<br>Dorian County approved another trained nurse practitioner for the clinic due to its increased business. |
| September | Additional hangars at the Major Airport began construction.<br>Major School began construction on an addition with more classrooms.<br>Forward Thinking county planning meeting was held to evaluate community needs for the oil boom and create a county plan. |
| October | City of Major began construction on an apartment building to address housing shortage.<br>At least five oil-related businesses opened in Major as of October 2012.<br>Minor gas station constructed additional pavement for oil truck parking<br>Minor gas station began construction on a water tank station for water trucks.<br>Dorian County Forward Thinking county planning committee met to evaluate progress on the plan. |
| November | City of Major began construction on ten new camper spots at the city RV Park. |

While potentially economically advantageous, the oil industry caused environmental and social disruptions in the region of the drilling. A saltwater pipeline,

which was used to fracture shale and initiate oil flow, burst and flooded 40 acres of farmland near Minor. There was also concern among farmers across the state that truck dust from the oil traffic may harm livestock (AP, 2011). Whether or not Minor and Major ever become peak-boomtowns is still unclear, yet the communities and schools are reacting to and preparing for change.

## Statement of the Problem

With available Bakken Shale Formation oil and increased technology to obtain it, the oil growth could determine whether Major and Minor become peak-boomtowns like other North Dakota communities in the area. Changes were occurring within the M-M School District, and the schools and communities tried to prepare for an uncertain future. The preparations that schools make during the pre-boom can determine their level of success through the growth transition (Ross & Green, 1979). The district would potentially continue to see dramatic transformations within the schools and communities, since Dorian County is expected to increase population by over 45% in the next decade (North Dakota Statewide Housing Needs Assessment, 2012).

Teachers, administrators, and staff members may be faced with challenges related to accommodating and educating new waves of students. The way the community members view the changes during the pre-boom may impact the success of the schools and the communities during the oil boom stages and beyond (Brown, Bankston, Forsyth, & Berthelot, 2011). Attitudes and perceptions of community members in a pre-boom stage can also determine their acceptance of new residents (Brown, Dorius, & Krannich, 2005). Both schools are in the same district, yet each has different stakes. Minor

Elementary School, being the smaller school in the consolidation, is underutilized and growth might justify keeping the school operational. The community of Minor would feel the effects of the school shutting its doors. Major School, like its surrounding community, is filled to capacity and does not have the space teachers and students need. Since Major School and community are growing, planners face challenges of keeping up with the changes. This study described how the M-M School District staff members and community members were experiencing and reacting to the growth.

## Purpose of the Study

The purpose of this case study was to understand and interpret the attitudes, perceptions, and reactions of school staff members and community members in a rural school district and two communities as they experienced an oil pre-boom.

## Research Questions

One central question framed this study, and eight subquestions guided the research and analyses. The central research question was: How do participants in a rural oil pre-boom area perceive and experience the changes to their communities and lives? The research subquestions were:

1. How do community members perceive the impact of an oil pre-boom in their town?
2. How do school staff members perceive the impact of an oil pre-boom in their school?
3. How have the changes affected education?
4. What steps do school staff members take in response to the oil pre-boom in their school?

5. What are the attitudes of school staff members regarding the oil pre-boom in their school?

6. What are the attitudes of community members regarding the oil pre-boom in their town?

7. What reactions do community members have in response to an oil pre-boom in their town?

8. What role does context play in the participant responses?

## Definition of Terms

To enhance clarity and gain a common vocabulary, common terms used in this study are defined below.

*Attitude.* Participants' feelings, emotions, or dispositions regarding the oil pre-boom.

*Boomtown.* A town that experiences "rapid economic, demographic, and social changes" as a result of community developments from an oil boom (Smith, Krannich, & Hunter, 2001, pp. 425-426). This study focuses on changes resulting from energy-related drilling and mining.

*Big City.* This is the largest community in the area. It is a shopping hub in this region of the state, and is also a boomtown.

*Community Members.* These are the "local residents of towns that existed before oil was discovered" (Olien & Olien, 1982, p. 42). Within the scope of this study, they are the residents of the M-M School District in and around the towns of Major, ND and Minor, ND.

*Dorian County.* This is the county that includes the communities of Major and Minor. Major is the largest town in the county and is the county seat.

*Fracking.* This is the colloquial shortening of the term *hydraulic fracturing*, which is the method of extracting oil and natural gas contained in shale formations.

*Impact.* In boomtowns, "impact" is "the phenomena of rapid change in established economic, demographic, and social structures, usually geographically localized, caused by large-scale, precipitous growth" in population and economics (Murdock, 1991, p. 144).

*Major.* This is the larger community in this study that is experiencing pre-boom growth.

*Major School.* This is the larger of the two schools in consolidated M-M School District. The school is K-12 and located in the community of Major.

*Minor.* This is the smaller community in this study that is experiencing pre-boom growth.

*Minor Elementary School.* This is the smaller of the two schools in the consolidated M-M School District. The school is K-6 and located in the community of Minor.

*M-M School District.* This is the consolidated district in this study that includes Minor Elementary School and Major School.

*Oil Boom.* The rapid economic, social, and population growth that occurs in a region as a result of oil drilling and other associated activities. The cycle of an oil boom typically contains three stages:

*1) Pre-Boom.* The initial stage in the boomtown cycle, which is marked by community preparation, some population and economic growth, and attitude formation.

*2) Peak-Boom.* The stage in which the oil activity and population are highest, and the market is conducive to continued oil extraction.

*3) Post-Boom.* The final stage of the oil boom cycle, after many oil workers leave and the drilling industry slows or ceases. Production may or may not continue, but the community is faced with recovering from the rapid population decline.

*Perception.* Participants' understanding, awareness, or interpretation of the oil pre-boom.

*Reactions.* The ways the participants respond to the oil pre-boom, including preparation, participation, education, and/or socialization.

*School Staff Members.* These are the administrators, classroom teachers, and special education teachers in Major School and Minor Elementary School.

## Organization of the Study

Chapter I presented the background of the study, including a brief history and impacts of boomtowns, descriptions of the schools and communities within the case, and the statement of the problem. The study's questions and subquestions were included, as well as the definition of relevant terms.

Chapter II offers a review of literature related to boomtown research. The purposes of this chapter are to provide a theoretical basis for performing the study, critically review and organize literature related to social and educational impacts of boomtown growth, examine research on community variables of change responses, and investigate evidence of the study's significance. The Social Disruption Hypothesis, around which this study is partially framed, is defined and presented in relation to social

impacts of boomtown growth. Additionally, community attachment and community identity are explored, as well as the social impacts of space changes and risk perceptions. Additional research related to boomtown changes is presented, including social impacts, teaching and learning, community variables, and uncertain futures. The discussion of the need for the study concludes Chapter II.

Chapter III outlines the embedded single-case study design and research methods, which include participant selection and data used in the study. Data analysis, validity, and ethical considerations are discussed.

Chapter IV delineates the findings of the study as a result of participant interviews, observations, and document investigations. It is organized around the four themes, and findings for each theme are presented at the Minor and Major levels.

Chapter V presents a case synopsis. The assertion and two sub-assertions are discussed and findings are interpreted for comparison of the Minor and Major levels. Chapter V includes recommendations for future study, implications for practice, and the conclusion.

# CHAPTER II

# REVIEW OF SELECTED LITERATURE AND RESEARCH

This research was framed around England and Albrecht's (1984) Social Disruption Hypothesis, which is a social impact assessment model that describes the disruptions in a community that may occur during a population boom, resulting in weaker social ties and community attachments among residents. As the literature suggests, though, specific community variables determine how residents respond to perceived changes. School staff members may welcome opportunities that come with growth, or may feel they are not prepared to teach a new population of students. Community members may also perceive changes as either positive opportunities for growth or threats to community values, traditions, and identity.

## Social Disruption Hypothesis

During oil booms in the 1980s, researchers began to formulate community impact models that described direct and indirect effects of population, residential, industrial, and commercial growth on communities. Summers and Branch (1982) offered an extensive model to indicate common boomtown trends, including population and crime increases, economic and tax changes, poverty, resource conflicts, infrastructure stresses, and labor demands. Freudenburg (1986) later proposed a social impact assessment (SIA) model of rural boomtown communities in which rapid population growth led to overcrowding, inadequate infrastructures, and a breakdown of community relationships. These

assessments have been explored in a variety of disciplines, including sociology, geography, anthropology, and public planning. McKay and Nides (2005) may have best simplified a boomtown model when they posited, "Jobs = People = Effects" (p. 105). They later elaborated on their model of boomtown effects when they proposed stages of change, including: demographic changes; large economic impacts; infrastructure changes; and fiscal changes, which were "social and cultural impacts" (p. 106).

Although other models exist in the boomtown literature, England and Albrecht's (1984) Social Disruption Hypothesis is the theory often cited when studying boomtown contexts in relation to attitudes, perceptions, and reactions of residents (Brown, Dorius, & Krannich, 2005). It works as a framework in the context of this study because it posits that social disruptions can occur at a variety of social dimensions and during every stage of the boomtown cycle, and are most prevalent during the late pre-boom or early peak-boom stages (Smith, Krannich, & Hunter, 2009), yet leaves open the possibility that community variables account for differences in types and degrees of disruptions. Since this research studies two communities and schools within one case, community variables are vital to understand why differences may exist. The central research question of this study asked how participants in a rural oil pre-boom area perceive and experience the changes to their communities and lives, and the Social Disruption Hypothesis postulates that residents in an early boomtown may have negative attitudes as their social ties, traditions, and infrastructure become strained.

England and Albrecht (1984) developed the Social Disruption Hypothesis by studying past boomtown models as well as researching several boomtown communities.

Communities enter an initial stage of economic prosperity and infrastructure development, potentially followed by a "period of generalized crisis and loss of traditional routines and attitudes" (p. 231), which may erode the residents' quality of life as their community changes around them. The community areas that are most impacted by rapid growth are community services, crime control, role structure, values, and social ties (pp. 231-232).

The Social Disruption Hypothesis is structured as an input-output model. The outputs are the changes resulting from development, including community attachment and community satisfaction. These outputs depend on two input variables: boomtown development and individual life circumstances. The boomtown development is contextual and varies according to the reason for the boom and conditions surrounding it. The individual life circumstances are the variables of affected individuals, which include values, attitudes, and demographics. England and Albrecht (1984) found disruption occurred at nearly all levels in the community, and the disruption "diminish[ed] the effectiveness of facilities that support informal ties such as friendliness and community spirit" (p. 245).

England and Albrecht (1984) also believed that a rural resident's "attachment to the community… [is] assumed to be affected by the development of boomtown conditions" (p. 234). While other boomtown theories exist, the Social Disruption Hypothesis maintains that community ties can be reestablished after the pre-boom stage, and the role of context is vital to understand residents' attitudes about, perceptions of, and reactions to the changes (Brown, Dorius, & Krannich, 2005; England & Albrecht, 1984).

Context includes community members' length of residence, economic stake, home or land ownership, and the energy extraction history of the community, among others. Communities may rebound from this disruption period and thrive later in the boom, depending upon the adaptive proficiency of residents, or the ability to cope with changes to their community (Perdue, Long, & Kang, 1999,). Research regarding the real and perceived disruptions that communities and schools experience during population booms will be explored next.

## *Social Disruptions*

Social disruptions in the form of community perceptions and real changes are frequently studied in boomtown literature. As population increases, community social and emergency services become strained. Traffic, housing costs, and crime increase, and infrastructure often needs assessed and updated. Although oil booms can provide great benefits for communities, the disruptions come at a cost.

### *Social Services*

Social services may become burdened in rural boomtown communities that do not have an adequate supply of trained social workers or medical personnel to keep pace with the needs (Cortese & Jones, 1977). In boomtowns, social workers face challenges resulting from the rapid growth and social disruption. Not only are there more people who require social services, but also issues related to boomtown growth lend themselves to social service needs. The community changes may contribute to substance abuse, divorce, homelessness, and mental and medical health issues (Kohrs, 1974). Rural social workers in some boomtowns face high rates of child abuse and neglect (Camasso, 1990).

Parkins and Angell (2011) discovered that social disruption occurred in boomtowns because of the nature of the energy industry work. Transience was more common, and significantly contributed to substance abuse because the temporary workers did not establish strong social ties, and the permanent residents experienced stress from the change, resulting in further substance abuse. The workers' erratic, long hours on and off work and high wages led to increased substance abuse and they had less time to spend with family and friends, and their social and familial relationships suffered. Also, since many went to work directly out of high school, some felt unfulfilled, which may have contributed to alcohol and drug use later in life. The authors posited, "Periods of economic boom simply exacerbate conditions such as transience and social inequality" (p. 51).

Recruiting social workers in rural areas is difficult. While many communities anticipate being able to fill open positions in the future, there is a shortage of social workers in some areas of North Dakota, including rural communities and Western North Dakota (the area of the oil boom) (Quinn, Phillips, & Heitkamp, 2011). Some North Dakota homeless shelters in the area of the boom are overwhelmed. Homelessness sometimes has a different definition in the area. Residents may have oil-related jobs, but housing is so difficult to come by that some newcomers live in their cars or trucks, even during the harsh North Dakota winters (Sulzberger, 2011). "Homelessness becomes a problem, even for people making six-figure incomes" (Petersen-Klein & Borjon, 2011, p. 2). In addition, the booming region of the state experienced greater demands in food pantry services and some older residents on fixed incomes were forced from their homes

due to escalating rent prices (Overstake, 2012). The region also experienced struggles related to their emergency service needs.

*Emergency Services*

Emergency services also feel the effects of rapid population booms. It can be difficult to hire hospital workers to keep pace with the increased patient load (Haefele & Morton, 2009) and is especially challenging to hire physicians in rural boomtowns (Jacquet, 2009). As the population increases, ambulance services receive more calls, putting a strain on the health sector (Ecosystem Research Group, 2007). In rural areas, where health workers may be difficult to hire or keep, or who might be unpaid volunteers, a boom adds the extra obstacle of increased demand. Hazards related to the crowded housing conditions can increase ambulance and fire calls in boomtowns as well (Petersen-Klein & Borjon, 2011).

Goldenberg, Shoveller, Ostry, and Koehoorn (2008) found that rates of sexual activities, sexually transmitted infections [STIs], and binge drinking increased in some boomtowns as a result of the higher disposable incomes of young people. "The transience of oil/gas workers…contributed to the spread of STIs" (p. 221). They were also involved in binge partying, or drinking large quantities of alcohol at one sitting. Going to the bar was "a way of 'blowing off steam' after a long time 'in the patch'" (p. 221). New residents also contribute to new crime in the areas they inhabit.

*Crime*

Increased criminal activity typically accompanies new people. In the case of boomtowns, crime rates can surge. To exacerbate the problem, hiring and maintaining

police can be difficult due to the workload and the salary competition in the area. Workloads become substantial for boomtown police officers since the larger population means a higher ratio of citizen per officer in a rural boomtown, especially if they cannot hire officers to keep pace with the community's growing needs (Ruddell, 2011).

Sublette County, Wyoming rapidly grew due to natural gas drilling in 2001 and crime increased considerably. Jacquet (2005) found criminal activity had increased by 270% from 1995-2004, while the population had grown only 21%. Although the county hired officers to keep pace with the crime, the rates of arrests per officer increased 150%. Arrests for outstanding warrants, simple assault, and Driving Under the Influence (DUI) were the most common offenses. Jacquet attributed most of the increase to the energy extraction workers, concluding, "rig activity has so far predicted about 90% of the increases in reported index crimes" (p. 5). Between 2007 (the year prior to the oil boom) and 2011, the number of reported crimes in North Dakota had increased from 12,531 (Weltz, 2008, p. v) to 13,778 (Weltz, 2012, p. v). As the state grew by about 45,000 people during this time, the number of reported violent crimes increased from 885 to 1,353, and the value of total stolen property grew from $10.7 million to $16.2 million (Weltz, 2008 & 2012). As a result, officers in some areas of the oil boom were retrained to learn how to deal with the spiking rates of assaults, drug trafficking, and gun offenses (Ragsdale, 2012).

*Housing*

Housing prices also soar in boomtowns. As booms bring workers without places to live, the demand far exceeds the supply of lodging. In the region of the Bakken Shale

Formation, housing was critical, which caused rent prices to quadruple overnight in some towns (Sulzburger, 2011). Many North Dakota oil boom areas allowed crew lodges, colloquially referred to as man camps, to be built to address the needs of a large group of temporary oil workers (Petersen-Klein & Borjon, 2011). These lodges varied greatly in size and amenities; some were spacious and offered free meals, workout facilities, and shopping areas, while others were simply long rows of trailer-like temporary dormitories.

Housing was nearly impossible to come by, whether residents rented or bought (Petersen-Klein & Borjon, 2011). The housing market could not keep up with the increasing population in most rural boomtown cases (Jacquet, 2009). The great demand and low supply often causes prices to soar. In fact, a small booming county in Wyoming that Jacquet researched was considered the most expensive county in the United States to live due to its housing crisis.

Collins, Schecter, and Carroll (2008) assessed housing conditions in a booming natural gas drilling county. They explained that housing needs are determined by the rate of growth followed by the housing market's reaction time, and "the former happens rapidly; the latter lags behind several years" (p. 2). Three housing challenges existed for their county: short-term, or housing newcomers immediately; medium-term, or finding housing for newcomers and permanent residents whose incomes do not keep up with the expensive housing; and long-term, or keeping the housing market from crashing after the boom ends. The demand for housing made the cost to buy or rent a home substantially higher than many residents could afford, and exceeded their "affordability ratio by more than three times" (p. 15). North Dakota appeared to follow this trend, as Macke and

Gardner (2012) wrote, "The higher cost of living creates hardships for those most vulnerable in the area…seniors…low income residents, [and] those with limited capacity to relocate and/or earn higher incomes" (p. 7).

*Traffic*

The number of vehicles on the roads in boomtown areas also increases and adds costs to governments to fund construction and constant updates (Jacquet, 2009). Heavy oil industry trucks damage local roads, many of which were not constructed for such weighty and constant vehicle traffic. To further complicate the problem, "most of the expenditures occur early in the boom, while revenues are received in later years" (Haefele & Morton, 2009, p. 4). In North Dakota,

> State officials report that the need for infrastructure improvements in those counties is dire. Western North Dakota is generally the least populated area of the state, and drilling sites are primarily accessed by county highways and local roads which were only designed for local and 'farm-to-market' travel. (Petersen-Klein & Borjon, 2011, p. 2)

The road updates are one of several substantial expenses to booming communities.

*Costs*

While energy booms are usually advantageous to governments because of high tax revenue and low unemployment, the costs to the impacted regions can be tremendous. Jacquet (2009) generalized that boomtowns cost governments and businesses more as they have to pay higher wages to compete with oil field wages. In North Dakota, policymakers called for a long-term focus to prevent what has been documented in other boomtowns: the crowding out effect. The crowding out effect results from cost increases to labor and land as a boom forces prices up and draws workers away from other

industries (Macke & Gardner, 2012). Retail, agriculture, and manufacturing get crowded out of the market as the energy industry uses up the available money, labor, and infrastructure while it grows.

Rural communities that cannot accommodate a high volume of people and traffic must invest significantly in updating infrastructure. One such community, Pinedale, Wyoming, received $20 million in oil revenues in eight years, yet "has spent all of this revenue on water, sewer, and roadway infrastructure, and has identified over $30 million of additionally needed infrastructure projects (including items such as sewer and water transmission lines, flood mitigation, etc.)" (Macke & Gardner, 2012, p. 41). Community costs are variable and dependent upon existing infrastructure, population growth, revenue, economic conditions, and educational facilities.

### *Boomtown Teaching and Learning*

Schools in boomtowns are also usually strained as a result of the rapid growth. Facilities may no longer be adequate with the addition of new students. The new, transient students may challenge teachers' instructional and planning strategies. Macke and Gardner (2012) found in North Dakota that the housing market "makes recruiting key professionals such as teachers and health care providers difficult" (p. 7). This is due to the competition with high paying jobs in the region and the shortage of housing in the community (Myler, 1982). Schools require support from community members for success and growth, but some residents in boomtowns may not be willing to support the change that is disrupting their lives.

The way communities perceive and respond to potential threats to tradition can affect schools. Ross and Green (1979) studied K-12 schools in rural boomtown communities in the American South. The communities were remotely located and fairly homogeneously Caucasian, had a history of population decline, and then experienced rapid population influx. They proposed a boomtown school stage model that included: 1) Initial rapid student population growth resulting in school overcrowding; 2) Increased financial resources, possible loss of community support, and changing newcomer values; 3) Short-range administrative impacts; and 4) Rise in social problems in and outside of the school (pp. 22-26).

In an examination of rural school enrollments during the 1970s oil booms, Thompson (1978) found that "a moderate, one-time growth spurt, followed by a period of sustained higher enrollment, seems the most common pattern" (p. 81). Increased enrollment may cause social and attitude disruptions within the schools, similar to the surrounding community. Ross and Green's (1979) findings indicated that community members' attitudes contributed to the success of the school before and during the boom. Negative attitudes about the boom in one community hindered the school's development since residents voted against tax increases to fund necessary school renovations even though the schools did not have the facilities to educate all of the new students adequately. Since the community would not let the school build permanent structures to educate new students, the school leaders were forced to try a variety of unsuccessful temporary solutions, which made residents more upset: "a vicious cycle set-in-motion" (p. 20).

The schools in communities with more progressive attitudes about growth flourished and were able to quickly respond to rapidly changing problems (Ross & Green, 1979). They built an alternative school for struggling students and were able to make renovations to existing schools to accommodate new students. While the shortage of housing made it more difficult to hire teachers, the available financial capital allowed more funding to hire good teachers. At the school-wide level, an enrollment boom dramatically affects administrators, students, and teachers.

Administrative duties during a boom are immense, particularly with the added paperwork from student arrivals and turnovers (Ross & Green, 1979). Leistritz and Sell (2000) interviewed community leaders to research population booms in several North Dakota towns experiencing growth as a result of a new agricultural plant. The interviewees indicated that the population influx created:

> a substantial increase in special education costs over the past 10 years. They feel that a lot of the increase in special education needs is tied to the influx of manufacturing workers, who seem to have a high percentage of dysfunctional families. (p. 27)

These changes may impact students and teachers in boomtowns.

Hedland's (1993) research indicated that adolescents were generally satisfied with life in a rural community. Although most wanted more privacy, they were content with relationships they had formed with peers and adults in the town. However, rapid rural growth can cause some adolescents to feel more alienated and display generally negative attitudes about their communities. This alienation can produce increased student violence, less school satisfaction, a strained sense of belonging, and less willingness to study (Freudenburg, 1994; Seyfrit & Sadler-Hammer, 1988). Some of the students

whose parents had followed the energy boom in Ross and Green's (1979) study had attended up to thirteen different schools. As people migrate to new locations, they bring customs, religions, and languages with them (Dalla, et al., 2004).

*Transience*

Transient students, or students who move frequently to and from schools, can present challenges for teachers who often receive little advanced notice of new students and, thus, cannot plan for necessary instructional adaptations (Lash & Kirkpatrick, 1990). Transient students are more likely to have behavioral and academic problems and fail a grade (Wood, Halfon, Scarlata, Newacheck, & Nessim, 1993). They may be below academic achievement levels of their peers and are more likely to be diagnosed with a special need (Alexander, Entwisle, & Dauber, 1996). Rural schools may not have the administrative or staff supports to address the requirements of the new students. Students' lower academic levels may also contribute to lower standardized test scores in the school (Rhodes, 2005). These students can also negatively impact the school's budget because of the "high percentage of high-need students among the most mobile populations" (Schafft, 2005, p. 11).

An influx of students into a rural area typically brings new diversity, threatens to dismantle social cliques, and results in socially constructed value conflicts (Hedland, 1993; Freudenburg, 1994). Students in Ross and Green's (1979) study dropped out of high school at high rates, "about 50 a month" (p. 17) to work in the energy industry. The population growth accounted for "increased truancy, rise in dropouts, increase in alcoholism and drug use among students, and a host of family-related problems including

a dramatic rise in child abuse" (p. 17). Some attribute this phenomenon to Gillette Syndrome, in which, as a result of living in temporary housing, familial and emotional bonds can break down and may lead to increased alcoholism, divorce, and criminal issues among parents and children (Kohrs, 1974). The name came from Kohrs' study of Gillette, Wyoming, a coal mining boomtown in the 1960s and 1970s. In addition, students in a boomtown can be more prone to drug, criminal, and emotional issues (Myler, 1982).

*Instruction*

Class size can determine the type and depth of instructional methods that teachers can provide. In a study of 6,500 students at 80 schools, research for the Tennessee Project STAR (Student-Teacher Achievement Ratio) found evidence that several areas of student performance were improved through small class sizes, and teachers were impacted by class size. In smaller class sizes, teachers could devote more time to individuals, and student distractions were lower (Mosteller, 1995). Through over 1,000 teacher interviews, one study also showed that teachers in smaller classes provider a faster paced instruction, used more enrichment materials, taught the content in deeper ways, provided students with hands-on activities more often, and were more likely to use learning centers (Pate-Bain, Achilles, Boyd-Zacharias, & McKenna, 1992).

Smaller classes can also improve teacher attitudes about their jobs and boost their morale (Glass & Smith, 1979). As school enrollment increases, the small classes that rural teachers are accustomed to teaching grow and can disrupt their instructional style. Bruno and Iksen (1996), in a study of Los Angeles schools, found that transient students

caused an interruption in instructional continuity. Teachers needed to modify their instruction to adapt to new students and their overall instructional program suffered.

The diversity of the new students can provide new challenges for teachers. Rural educators are typically less effective than their urban counterparts in their understanding of the role diversity can play in teaching and learning (Beckman, 2012). This is because rural areas are typically ethnically homogeneous and isolated rural schools do not provide or have access to diversity-based professional development (Beckman, 2012). Increased population shifts can bring students who do not speak English fluently (Murry & Herrera, 1998). Rural communities who do not have a certified English Language Learners (ELL) teacher may be faced with the challenge of hiring one or getting one certified in the school, yet hiring special education teachers in rural areas is notoriously difficult (Yellin, Bull, & Warner, 1988; Murry & Herrera, 1998).

Howley and Howley (1999) employed qualitative methods to study an elementary school, middle school, and high school that were traditionally rural but were growing due to in-migration. The schools became a place of social dissonance for the new children, who learned values at their new schools that conflicted with those coming from home. Educators employed a variety of strategies to deal with the dynamics of a changing school, including "molding the children's behavior to middle-class norms" (pp. 44-45).

Gjelten (1982) studied rural schools in a variety of population settings, which included those in declining, stable, and growing communities. He found social and value conflicts emerged between the old and new citizens. Teachers were caught in crossfire of change:

> For teachers who are not accustomed to such problems, it will be a time of great frustration. The economic changes in the community will mean that new skills and knowledge will need to be taught in the school. But with the changes occurring as rapidly as they do, the school may find it difficult to keep pace. Old familiar ways will no longer prove adequate. (p. 7)

Although some degree of social or physical disruption is typical in towns experiencing rapid growth, the way community members perceive and respond to risks can affect the length and intensity of the disruption (Brown, Geertsen, & Krannich, 1989).

### *Risk Perceptions*

While no single definition of "risk" exists, most agree that risks are the "distinction between reality and possibility" (Renn, 1998, p. 50). Kasperson et al. (1988) created a comprehensive model of public risk assessment that explained how and why the public responds to potential risks. In their risk model, the Social Amplification of Risk, they posited that real events, or the potential for events, could be perceived as risks and be amplified or exaggerated as the message travels. The concept of amplification was initially a communication theory proposed by DeFleur (1966). The way an event or perceived event has an effect on a community, region, or individuals is dependent upon how information flows through communication channels and the responses of members within them.

Two main sources may account for unwarranted risk assessment: the media and personal networks (Kasperson et al., 1988). Boomtown literature is full of community perceptions of risks, particularly social disruption, crime, and ecological risk perceptions. For example, residents of energy boomtowns often report a high fear of rising crime rates

regardless of whether or not they actually experience new crime (Hunter, Krannich, & Smith, 2009; Krannich, Greider, & Little, 1985).

Residents who perceive positive benefits of social change may be more likely to support their schools (Miller, 1995), yet the addition of new residents can create social strain. In an investigation of a boom period for Deadwood, South Dakota, Wielgosz, Brown, and Lategola (2000) found that a rift formed between the poor, native residents and the more affluent newcomers. Large cultural disruptions occurred in the community and developmental concerns were not heard because "local residents had no idea that there were community meetings being held for public input…where activists were occasionally rebuffed" (p. 36).

There is a substantial interest in ecological risk perceptions and reactions of energy boomtown residents. Although there are significant government regulations regarding ecological conservation, there is an inherent environmental risk in energy extraction. Evans and Garvin (2009) researched residents in a growing Canadian energy extraction community and found that some community members felt the incoming drilling was a violation of their natural rights to a good life in a quiet, clean area. Their beliefs about their rights to clean living and slow lifestyles caused disputes among community members and activism against the oil companies. Baxter, Eyles, and Elliot's (1999) findings explain that some people react strongly when they feel their values and community expectations are threatened by perceived risks. The type and severity of the community and school disruptions, as well as the resident responses, depend upon community variables.

## Community

Hillery (1955) uncovered over 90 unique descriptions of a community and discovered a common thread embedded throughout each: communities contained members acting in socially connected ways within a geographic region. Further, Allen and Schlereth (1990) defined a region as a place where people operate and are affected by both historical context and relationships in a distinct way from those outside the region. They wrote that regions were distinct in "economic and social structure and systems, in historical development and experiences, in cultural patterns, or all three" (p. 2). These distinct, complex attachments that people form with their spatial locations were referred to as place attachments.

Places have distinct physical and social boundaries (Lee, 1972). Studying place has been a relatively recent, multidisciplinary development in the literature. Sarason (1977) first defined community attachments from a psychological perspective as:

> the perception of similarity with others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, the feeling that one is part of a larger dependable and stable structure. (p. 157)

Since this definition emerged, researchers across disciplines have sought to define the sense of attachment and identity of individuals operating within their communities.

### *Place Attachment*

Recreational researchers often identify Williams and Roggenbuck's (1989) constructs of regional attachment: place dependence and place identity. Low and Altman (1992) described the social, emotional, and physical dependence of people to their environment as "place attachment" (p. 4). The intimate levels of connections were

largely undeveloped until Canter (1997), a cognitive theorist, provided a more detailed theory of how people interact with their physical environments. He proposed that action, cognition, and emotion should be integrated within the definition of place attachment. Jorgenson and Stedman (2001) tested this theory with questionnaires measuring place identity, attachment, and dependence. They found that personal attitudes may explain social, behavioral, and descriptive feelings of attachment and advocated for future attitude-based place models.

People define their attachment subjectively and with their own personal significance. Hummon (1992) believed place attachment was dualistic and involved both attachment *to* the environment and attachment *within* the environment. He explained that individuals perceive place differently, depending upon their values, emotions, and meanings. Often, these meanings are exposed in research through people's symbolic representations of their community, engagement in community activities, interactions in social structures, and their evaluations of the community (Amsden, Stedman, & Kruger, 2011). Emotions and opinions of a place can indicate a person's attachment to it (Cross, 2003). Hay (1998) recommended performing qualitative research to bring out the depth of place attachment, but suggested data should be analyzed in comparison to geographic region, culture, and ancestry to make sense of the complex place attachments.

Relph (1976) found that people experience levels of insidedness within their place attachment, which referred to the feeling of local connection and identification. Tuan (1980) offered the concept of "rootedness" as the unconscious attachment to a place (p. 4). Hay (1998) studied geographic mobility and sense of place in New Zealand. He

found that "insider status and local ancestry are important toward the development of a more rooted sense of place" (p. 5). The time in which residents and their ancestors resided in a community often impacted their attachment level, and also their willingness to accept outsiders. After researching a community that was experiencing energy-related growth, Devine-Wright (2009) believed that a strong sense of place attachment caused residents to react using "place-protective action" as a response to the perceived attack on their community (p. 426). These actions can be explicit or tacit, from active protests to simply an unwillingness to accept newcomers into social networks.

### *Place Identity*

Place identity is a deep, symbolic relationship to others in a physical area, often due to historic or familial connections (Williams & Roggenbuck, 1989). "Identity and continuity are rooted in local events, relationships, and history" (Reimer, 2010). People who share similar characteristics or have experienced a common phenomenon are more likely to develop a sense of cohesion, belonging, and identity (Hogg, 1992). Residents who feel a strong sense of community identity may be more emotionally stable when faced with social change (Riger, Lebailly, & Gordon, 1981). Community identity can develop early, and the school itself can aide in establishing a sense of identity in young students.

Students' place identification can occur in the boundaries of a classroom. "They are identified as being from that school and take pride in this fact…The students want the school to be proud of them and they want to be proud of the school" (Hutto, 1990, p. 7). The acculturation of ideals at a young age within rural schools may explain the formation

of embedded community place-based identities later on (Gamradt & Avery, 1992). "Rural schools are characterized not only by a strong sense of community within the school itself, but also by a sense of being a part of the larger community and an extension of the family" (Lomotey & Swanson, 1989, p. 441). Johnson (1980) researched school culture and found that artifacts and decorations in classrooms were generally representative of the schools' community place contexts. This indicated that schools may serve the function of transferring community values to students. The cognitive, affective, and physiological traits of students can be fashioned by the community and region in which the school is located, helping students to strengthen their personal meaning and identity in the community (Semken & Freeman, 2008).

McMillan and Chavis (1986) explained that an established sense of community requires membership, influence, integration and fulfillment of needs, and shared emotional connections. Membership in rural towns is usually a deeply entrenched and exclusive barrier of "us" versus "them" when community members are faced with incoming residents. Reid (2008) studied attitudes of rural residents to local events and found that "this divide is based upon whether an individual is a 'local' (born within the community) or a 'nonlocal' (moved to the community)" (p. 96). Insiders may react to outsiders as a threat to their sense of established identity (Anderson, 1983).

Some community members perceive risks to tradition, safety, economics, society, and residential life when their town changes (Chang, 2010). Residents may be emotionally invested in protecting their identity and become more cautious of those outside their identity constructs (Hogg, 1992). During times of social change, some

groups may respond to perceived risks by strengthening their sense of identity (Devine-Wright, 2009). Bachrach and Zautra (1985) studied coping mechanisms of rural residents who felt community stressors as a result of a perceived negative change, which was a proposed hazardous waste facility. They found that the community members with strong attachment and identity were most likely to take action against the community stressor that was invading their space.

## *Space*

Place and space can be related. Space is an abstract concept that can represent either a physical space or a space in the mind. Although place can be marked off with borders, space is cognitively conceptualized and has meaning to the individual. Culture determines how people attach meaning to space and place (Tuan, 2001). As people create social connections to others within their established place, they begin to create a sense of community in their minds where cultures are strongly bonded, known as an imagined community. The more threatened people feel by others who bring new cultures into their spaces, the stronger their traditional bonds become as they seek to reaffirm this imagined community (Anderson, 1983, p. 6).

### *Emotional Space*

When population density increases, individuals may feel their personal space is violated. Personal space is "the bubble of space surrounding a person" (Hayduk, 1983, p. 293). It can also describe a person's feeling of density. Increasing social density is an increase of population within a fixed space, while increasing spatial density is a decreasing space with a fixed population (Hayduk, 1983). People react to increased

density in an emotional way, and it is either positive or negative (Worchel & Teddlie, 1976). People possess different levels of permeability when they feel their personal space is being intruded.

Individuals frequently respond to a violation of their personal space in a negative way, as "spatial intrusion produces discomfort" (Hayduk, 1980, p. 274). Hayduk studied 40 participants and found that the subjects tended to feel uneasy when a stranger approached them, and became increasing uncomfortable the closer the stranger came. As density increases, people feel a sense of crowding and react. Their response to crowding is determined by individual variables, their beliefs about crowding, and their expectations of the results of the crowding (Baum & Greenberg, 1975). Perception seems to be a predictor of reactions. Baum and Greenburg found through their research that "subjects anticipating crowding chose more socially isolated seat positions, avoided contact with others, experienced crowding and discomfort, and rated others in the setting as well as the room in ways generally consistent with definitions of crowding" (p. 671). In addition, the researchers concluded the sense of crowding was an interaction of social and spatial factors, and it affected not only behavior, but mood as well, which they called "high-density response" (p. 535).

The physicality of schools can convey expectations in the way teachers and students perceive and conceptualize their space. Three dimensions of space in a classroom include the physical space itself, the student relationships, and the movements within the classroom (Montgomery, 2011). Montgomery posited that the space plays a vital role in pedagogical considerations and students who perceive an active space will be

more likely to be engaged actively in the material, and vice versa. Space can "encourage exploration, collaboration, and discussion. Or, space can carry an unspoken message of silence and disconnectedness" (Oblinger, 2006, p. 1.4). Students and teachers need space to think, explore, and reflect.

*Physical Space*

As school enrollment increases, the available physical space diminishes. Crowding occurs when there are more students in the building than it is designed to hold. Schools that experience crowding are faced with several challenges. While class size is only one variable in overall academic efficiency, teachers and students both benefit from having an adequate physical space in which to teach and learn. Students in primary grades can benefit substantially in their reading development in smaller class sizes, and teachers are more likely to struggle teaching and managing a classroom with more students (Blatchford, Bassett, Goldstein, & Martin, 2003).

A study by the National Institute of Child Health and Human Development (NICHD) Early Child Care Research Network (2004) found that students in smaller classes had higher levels of emotional and instructional support. Teacher instructional support dropped significantly when the class size reached 26 students. Students in smaller classes also reported that they felt emotionally closer to their teachers. Additionally, in a study of nearly 5,000 students, Finn and Gerber (2005) found that those who attended smaller classes in grades K-3 were more likely to eventually graduate from high school. While small class size is not necessary for high achievement, space for teaching and learning can help improve students' achievement potential. Crowding in

schools increases the likelihood for student absenteeism and also contributes to teacher stress (Corcoran, Walker, & White, 1988).

School facilities in boomtowns may become crowded. Schools may not receive the updates they need in a boom and classrooms, restroom facilities, and septic systems may not be adequate for the higher student enrollment (Brown, Hudspeth, & Stone, 2000). Teachers in crowded boomtown classrooms are often forced to change their teaching style and parents may feel a "lowered educational quality for their own children and resources [are] simply not available to eradicate the problems" (Dalla, Villarruel, Cramer, & Gonzalez-Kruger, 2004, p. 239). Crowded classes are more likely to be noisy and teachers spend more time planning and grading, resulting in increased anxiety (Fernandez & Timpane, 1995). Noise levels can have a further negative effect on student learning, particularly for students with hyperactivity disorders (Zentall & Shaw, 1980).

*Aesthetic Space*

Boomtown residents' quality of life may become disrupted as their communities change. Anderson and Theodori (2009) interviewed 24 community members from two counties experiencing an energy boom. They found many areas of life that were disrupted, and it was noted that residents resented "changes to the aesthetic value of the landscape" (p. 123). The oil wells, lighting on the sites, road conditions, and large trucks on the roads depleted the landscape that they valued. Lakshmanan and Johansson (1985), in a large-scale analysis of boomtown cases, found that years of "heavy noise, smell, and traffic congestion" (p. 219) made a lasting impact on resident perceptions. Traditional residents become more willing to move away from a boomtown because of the aesthetic

and lifestyle changes in the towns. The building construction and eventual exodus of the work force made a permanent, intolerable aesthetic change for many residents. "Aesthetic decline is difficult to quantify, but it is one of the frequently cited causes of regret" (p. 219).

Brasier et al. (2011) studied four cases of oil boomtowns. They interviewed key informants from each county. Among several areas of disrupted life that community members described was aesthetic quality change and they saw the potential for "permanent scars" (p. 49) to be left on the face of their town due to the growth. This seemed to deeply violate their rural values. The uncertainty of the permanence of aesthetic quality was worrisome to residents. In boomtowns, some disruptions to the social, ecological, economic, or educational structure of rural boomtown areas are inevitable.

Short-term effects of the boom were evident in North Dakota. Macke and Gardner (2012) studied the booming area in Western North Dakota and put together a policy paper for the state government. The labor market in the booming area shifted to the oil fields, resulting in the need for other businesses to raise wages to hire and retain workers. Housing was difficult, if not impossible to acquire in most areas, even in rural and remote communities. Retail development slowed due to the high rent of commercial buildings. The authors believed the "short term effects slowly, but clearly erode the fabric of the community" (p. 7).

Community members' attitudes and perceptions of a boom are important in the pre-boom planning stages since they may be responsible for voting on policy changes and

measures of building expenditures which could determine how successful the community is during and after the boom (Ross & Green, 1979). Anticipating the boomtown growth is difficult for community and school planners:

> The penalty for substantial underestimation is the construction of facilities (such as schools, housing, sewage disposal plants), which are realized to be inadequate just as they are completed. On the other hand, overestimation may result in facilities which are neither needed nor utilized and debts which cannot be paid. (Ross & Green, 1979, pp. 44-45)

Planners may be reluctant to devote large investments toward required projects (Burdge & Johnson, 1994). It might be viewed as a long-term solution to a short-term problem. Strong community support and involvement are necessary for rural schools to get their agendas approved.

Residents also play an important part of the rural school system. Rural administrators may expect community members to be actively involved in decision-making processes relating to the school (Brown, Carr, Perry, & McIntire, 1996). Furthermore, the success of development initiatives depends upon community involvement and stake in the process (Blakely, 1994). Community members who perceive higher outcomes for themselves as a result of the development are more likely to support investments, particularly if the outcomes are monetary (Green, Marcouiller, Deller, Erkkila, & Sumathi, 1996). Those without stakes in growth, or those who have high levels of attachments to their community, may view growth negatively.

### *Community Variables*

People perceive risks to social norms and traditions in many different ways. Variables, such as historic conditions, regions, place attachments, and demographics,

may impact how a person interprets and reacts to risks. Malloy (2010) studied demographics and well-being perceptions of boomtown residents and found that "older residents and long-term residents tend to possess characteristics that allow them to create a buffer against the diminishing community satisfaction other residents may experience" (p. 68). Malloy believed that the current economic recession allowed residents to feel generally higher levels of well-being because of the jobs that booms brought to the towns, even though many indicated that they feared higher crime rates accompanying the new residents.

Hunter, Krannich, and Smith (2002) surveyed residents of three post-boomtown communities to determine if their fears of crime were different depending upon migration status (long-term residents, residents who migrated in during the boom, and post-boom residents). They tested the Social Disruption Hypothesis to see if fear of crime was an indicator of social health. Residents with higher incomes expressed greater fear of crime, as did homeowners. The researchers were surprised to find that "age and gender do not contribute substantially to variation in the levels of fear of crime" (p. 85). They concluded that long-term residents might have formed early coping mechanisms to deal with insecurity that came during a boom.

Brasier et al. (2011) interviewed key informants in four boomtown cases. Many respondents worried that "outsiders moving to rural Pennsylvania might not value 'their way of life'" (p. 47). They also expressed concerns of ecological impacts. The researchers believed differences in perceptions across the cases could be explained by the community isolation, population size, infrastructure development, social services, speed

of growth, and extractive history. The communities who had experienced energy extraction in the past were less likely to feel negatively about current extraction.

Anderson and Theodori (2009) studied two Texas counties, one in a pre-boom and one in a peak-boom. The leaders reported economic benefits of the boom but had concerns about human and environmental safety and quality of life, including noise and lighting anxiety, and traffic. They found, "Concerns regarding negative consequences were greater among respondents in Wise County, the site where energy development was more mature" (p. 125). They believed that their "enthusiasm…may be overshadowed by the daily presence" (p. 124) of the booming activity.

Smith, Krannich, and Hunter (2001) performed a longitudinal analysis of multiple dimensions of social disruptions during various boom periods in communities that had previously experienced energy-related booms. Due to variables in economics, growth, and demographics, differences were found in each community. Generally, perceived social integration and community friendliness fluctuated during the boom cycle. Fear of crime increased during the pre-boom stage, and peaked during the peak-boom in all four communities. Lower levels of community satisfaction were found during the pre-boom stage in all four communities. They indicated that "results derived from this longitudinal analysis are at least partially consistent with the premises of the Social Disruption Hypothesis" (p. 446), while more research was needed during all stages of a boom.

## Uncertain Future

Boomtown communities and schools may face real and perceived disruptions, yet one of the most difficult aspects of planning is the uncertainty of the boom. The energy

extraction industries have a history of volatility. Their operations depend on many conditions beyond their control, including material and labor costs, laws, government and Environmental Protection Agency (EPA) regulations, and oil prices (Tyson, 2012c). Recent examples of drilling and fracking regulations exemplify how quickly the industry can be stifled. If the energy extraction companies find conditions not conducive to profitable drilling or mining, they shut down operations and the boom can bust. While the future is uncertain and potentially harmful to some boomtown communities, it can offer hope to residents whose communities want to see economic or symbolic revitalization.

Jacquet (2009) believed, "The boom-bust cycle associated with energy development presents the local government with an uneven future path of public service demand" (p. 9). Costs, laws, and regulations influence how the energy extraction industries operate. Boomtown residents are aware of their uncertain futures and may face it with skepticism or hope. Areas of uncertainty related to the North Dakota industry include economics, fracking, and politics, such as a proposed oil pipeline.

The price of a barrel of oil dictates the extent of oil drilling. If oil drops below a price that makes it advantageous to extract, companies put their operations on hold. Oil companies are willing to take on such large operation expenses because the returns can be great. However, rising costs and falling prices of oil impact the return on investment. The price per barrel of oil is determined by increasing global demand, market speculation, and worldwide supply in hold (Alquist & Gervais, 2011). Oil economists must take into account initial costs, retrieval potential, decrease on returns over time, and

potential price forecasts in a volatile industry when they decide to drill (King & Hall, 2011).

Bakken Shale Formation oil companies "must receive from $40 to as much as $60 per barrel of oil to stay in business" (Tyson, 2012a, p. 1). This is due to high costs of drilling, production, storage, and transportation. During 2012, oil prices fell to nearly $60 per barrel, coming "dangerously close to the upper end of the…price threshold thought to be required to do business in the Bakken play" (p. 17). At the time of this study, oil was around $76 per barrel, but fluctuated constantly (Bailey, 2012). Oil taxes on production in North Dakota were 11.5 percent, and "if you throw in 20 percent royalty…you're already at 30 percent off the top line before you get anything else" (p. 17). Taxes on oil revenue varied from 5 to 6.5 percent, depending upon the well's production (Pranke, 2012). In addition, oil drilling was sharply regulated by environmental and health laws. When prices drop, any of the related expenses increase, or regulations tighten, drilling slows or ceases (Tyson, 2012a).

### *Fracking*

Hydraulic fracturing (fracking) is the method of retrieving gas or oil that is trapped in shale. This is the only way that oil can be feasibly extracted from the Bakken Shale Formation. The drill pipe is first straight drilled into the ground and then horizontally angled upon reaching the shale layer. A mix of water and sand or other materials is blasted through the pipe to fracture the shale and cause the oil to flow and "a million pounds of sand and ceramic beads are pumped with the water to hold the fractures open" (Hicks, 2011 p. 16). The water solution is then extracted (flowback

water) and often stored in pits dug into the ground before it is eventually removed, treated, and disposed of in deep injection wells far underground. This process is repeated up to forty times for each well, depending on the geography of the shale. Fracking is effective, but costly. Each North Dakota well requires over two million gallons of water and over three million pounds of sand and the Bakken Shale Formation wells in North Dakota use 20 million gallons of fresh water a day in drilling (Hicks, 2011). Although fracking is currently necessary to retrieve oil from the Bakken Shale Formation, it is irreconcilably entrenched in politics regarding environmental constraints, rules, regulations, water use, public perceptions, and potential health risks.

Oil industries watch EPA regulations on fracking very closely. Analysts believe that EPA regulations could quickly "kill this play, or be detrimental to this play" (Cashman, 2012, p. 17), or the drilling and production of oil in North Dakota. On May 6, 2012, the EPA announced that it would allow oil companies until 2015 to comply with environmental regulations. These regulations would cost drilling companies more money, and some industry analysts still feared "that EPA would impose an immediate drilling moratorium, effectively halting well completions until companies could employ the necessary technology" (Tyson, 2012b, p. 16).

The North Dakota state legislature passed laws that regulated the storage of flowback water, handling and disposal of the water and chemicals, and levels of fracking in relation to fresh water levels (Hicks, 2011). According to the ND DMR, the frack solution may include:

> fresh water, proppant (allows for the fractures to remain open so the oil and gas can escape), acids, petroleum distillates, isoproponol, potassium chloride, guar

> gum, ethylene glycol, sodium or potassium carbonate, sodium chloride, polyacrylamide, ammonium bisulfite, borate salts, citric acid, N, n-dimethyl formamide, [and] glutaraldehyde. (Hicks, 2011, pp. 35-36)

The state and industry, which have much to gain from unregulated or lightly regulated fracking, claim to maintain the safety of the process. However, fracking has many critics and the method is presently battled in courts across the country.

Some environmental organizations claim that fracking solution leaches into the groundwater supply. "Anecdotal reports of illness related to fracking operations abound, but they aren't tracked systematically such that scientists can investigate links to specific exposures" (Schmidt, 2011, p. 513). There are also concerns related to underground pipe leaks, immense water necessities, radioactive contaminants, possible relationship of earthquakes and fracking, the focus on speed and efficiency instead of safety, and an industry that is developing quicker than the regulations (Davis, 2012). These concerns caused some areas to place a moratorium on fracking, including countries (such as France, Bulgaria, Spain, and South Africa), states (such as New York, New Jersey, Maryland, and West Virginia), and many regions or local areas (Negro, 2012).

Additionally, states such as Texas and Pennsylvania have implemented specific policies that regulate or make publically transparent the fracking processes. While there is little clear, empirical evidence of environmental and health-related fracking issues (Davies, 2011), anecdotal evidence is prevalent, such as documentaries about the health and environmental problems caused by fracking. In 2012, a movie which portrayed fracking negatively was not played at most theaters in North Dakota's oil patch cities,

even though other cities in North Dakota played the movie (Benshoof, 2013), and some believed it may have been intentionally banned.

The federal government showed that it could partially regulate energy economies when President Obama rejected a proposed eight billion dollar oil pipeline, the Keystone XL Pipeline, which would carry oil from Canada to Texas, and travel through North Dakota. While nine oil and natural gas pipelines already run through North Dakota, and another major pipeline is in proposal (Dalrymple, Stenhjem, & Goehring, 2011), this particular action was met with strong political, economic, and environmental reactions from many people in the state and nationwide. President Obama (2012) put out the following statement on the White House's official website:

> The rushed and arbitrary deadline insisted on by Congressional Republicans prevented a full assessment of the pipeline's impact, especially the health and safety of the American people, as well as our environment. As a result, the Secretary of State has recommended that the application be denied. And after reviewing the State Department's report, I agree. (para. 1)

Some saw this ban as a combination of federal oversight, environmentalism, and politics mixed into a necessary but fickle industry.

The economy of North Dakota was booming due to the oil, which would not be possible without fracking. Each new well in the state provided an average of 200 fulltime jobs (Hicks, 2011). As states began to ban fracking and the potential arose for crippling national regulations, North Dakota Senator Hoeven responded by proposing the Empower States Act in September 2012, but it had yet to pass at the time of this study. This act would allow states to regulate and oversee their own fracking laws without direct interference from the federal government and would permit states to challenge federal

regulations in court (Smith, 2012). While many forecasts of the oil industry exist, the future is uncertain. However, oil booms can offer hope to individuals and communities.

### *School Consolidation*

Rural consolidation is done for the purposes of financial and educational efficiency and centralizing curriculum and administration, but districts often make plans for the smaller school(s) to eventually close (Howley, Johnson, & Petrie, 2011). Consolidations can save money for the districts and increase educational opportunities for students from the smaller schools. However, its effects on educational improvements for students are disputed (Kauffman, 2001).

The possibility of a school closing in a rural community greatly outweighs any benefits of a consolidation for the community itself. Rural communities with operating schools have higher per-capita wealth, more businesses, higher home values, less unemployment, and a higher percentage of educated professional workers, and the smaller the community, the more exaggerated these effects are (Lyson, 2002). The money saved in consolidation "could be forfeited in lost taxes, declining property values, and lost businesses" (pp. 135-136) when the school closes. In addition, bus time increases significantly for many students in consolidated districts, particularly those at the far edge of the newly defined district borders (Killeen & Sipple, 2000).

Residents of communities whose schools are consolidated or facing closure may have less reason to be hopeful. The school is as much a symbolic importance as it is an economic importance to a community. Rural schools help define their communities, and the towns that lose their school may view the loss as a social failure and an end to their

people's way of life (DeYoung, 1995). However, oil booms can offer hope to rural schools that are facing closure due to the population and economic influx. Hope is "based on positive expectations for goal attainment" (Snyder, 2000, p. 5). In his Hope Theory, Snyder (2000) posited that hope is more than mere emotion. It can empower people to persevere through hardship.

With the rapidity and unpredictability of oil booms, compounded by transformations to education, social dynamics, and populations, we must understand boomtown effects on schools and communities. Researchers have used the Social Disruption Hypothesis to test whether boomtowns experience similar results, with varying outcomes (Hunter, Krannich, & Smith, 2002; Perdue, Long, & Kang, 1999; Seyfrit & Sadler-Hammer, 1988). Variables between communities are extensive and make study result generalization or replication inappropriate. Accordingly, the Social Disruption Hypothesis has critics. Wilkinson, Thompson, Reynolds, and Ostresh (1982) believed that most research in the area of energy development was generally "based on undocumented assertions, questionable interpretations of evidence, and superficial analysis" (p. 275). They felt that specific contextual, demographic, historic, and geographic variables must be taken into consideration in every boomtown study.

## Need for the Study

Rural communities and schools may feel hesitant to adequately prepare for a population influx during a pre-boom. The residents may be unwilling to support change if they feel their traditions, values, and identities are being attacked (Ross & Green, 1979). Very little research currently exists that studies community support for schools

during a pre-boom. Schools may suffer as a result of crowding, resource depletion, and a lack of teacher training to address the needs of new, incoming populations. If proactive measures are not taken to prepare for the boom, social and physical conditions of the area may break down and further hinder the community and school's opportunity for success through the boom (Broadway, 1999), particularly if residents' community values, attachment, and identity are eroded by the changes (Brasier et al., 2011). Rural schools and communities both have a stake in the success of one another.

Attitudes, perceptions, and reactions of community members during the early stages of a boom cycle are vitally important. Malloy's (2010) suggestion for future research was to:

> expand this study to find out who else *wins* and who else *loses.* Variables besides age, length of residence, and income should be included to help answer the research question more thoroughly. Some other variables may be sex, number of family members, occupation, religious affiliation, and many others. These variables will further help to mitigate the effects of oil and natural gas extraction on the social networks and communities who host the industry. (p. 77)

Chang (2010) advised boomtown researchers, "When conducting a community study, attitudes toward local economic circumstance are an important resource to understand the patterns of change and in what ways local residents deal with them" (p. 23). Brown, Bankston, Forsyth, and Berthelot (2011) found that some communities were able to avoid the social disruption that has been found in past literature. They believed that those who had an economic stake in the growth might overlook the negative impacts. They urged that further research investigate respondents to determine how residents form their beliefs about booms.

The oil boom in North Dakota was moving south and east as oil companies tested wells, meaning it could impact more communities. Oil companies were even buying leases in South Dakota to begin testing Bakken Shale Formation drilling there (Ragsdale, 2012). Oil booms were also occurring across the country, from Ohio to California (Lidji, 2012; Ragsdale, 2012). It is important to understand cases of schools and communities in a pre-boom to inform other areas of potential disruptions and help them prepare accordingly.

Due to the spontaneity of oil booms, there is little research regarding communities in the pre-boom stage. Smith, Krannich, and Hunter's (2001) results of their Social Disruption Hypothesis study indicated a "need to specify more carefully how social disruption may vary across the period extending from pre-boom to post-boom conditions" (p. 446). Brown, Dorius, and Krannich (2005) studied longitudinal data of a community throughout a boom cycle to determine what variables contributed to disruptions. However, they discovered that variables may be complex and it is important to get a baseline perspective of oil boom views. They wrote:

> If we envision community more as the dynamic outcome of subjective interpretations and understandings that emerge out of social interactions and less as an objective entity, we can also envision community impacts precipitated by a singular event…as people subjectively transitioning from one community context (pre-boom) to another (boom) and yet another (post-boom recovery) without ever leaving that location. Yet in this transition, the definitions of both the place and the community change to accommodate the event creating the impact. (p. 48)

After interviewing key informants in several boomtown cases, Brasier et al. (2011) also acknowledged the importance of context in boomtown research. They suggested, "Future

research should address how perceptions of development vary based on community characteristics and an individual's place within the community" (p. 55).

Much of the boomtown literature has focused on the sociological perspective rather than the educational. Studying these two schools and communities together is appropriate because, like in Ross and Green's (1979) research, "in both communities, the educational impacts of the turnaround were strongly influenced by the particular economic and social conditions operating in the larger community arena" (p. 21). No literature currently exists that focuses on rural teachers and school staff during an oil pre-boom. Additionally, little research has been done on boomtowns in the 21st century, and with advances in technology and development, it may be a "different kind of boomtown" (Malloy, 2010, p. 76) than those studied in the 1980s.

Booms will continue to occur throughout the country, and the issue of schools facing population growth deserves attention. Community planners and administrators should understand issues of growth during the pre-boom stage so they can be proactive in their planning for successful, sustainable growth. This study will help narrow some gaps in the literature by providing an understanding of community identity and perceptions during an oil pre-boom, community context in relation to growth issues during an oil pre-boom, community support for pre-boom schools, and educational conditions from the perspective of teachers and administrators during an oil pre-boom.

# CHAPTER III

# METHODOLOGY

Qualitative research can be employed to "fill a void in existing literature, establish a new line of thinking, or assess an issue with an understudied group or population" (Creswell, 2007, p. 102). The problem that emerged from the literature is that rural community and school staff members' attitudes, perceptions, and reactions during an oil pre-boom may impact whether or not a successful transition occurs during and after the population boom (Ross & Green, 1979; Brown, Dorius, & Krannich, 2005). Successful transitions include infrastructure, housing, and educational developments necessary to maintain the new population and traffic, as well as social and economic sustainability before, during, and after the peak oil boom. While a significant amount of literature exists on oil booms, research of communities in context during a pre-boom, and research with a focus on teachers in any boom cycle stage is nearly nonexistent at the present time. There was also a call for more research into disruptions in various community contexts regarding resident attitudes, perceptions, and reactions (Chang, 2010; Brown et al., 2011).

Surveys would not have given an answer to these problems. Interviews, observations, and document analyses were necessary to uncover the depth and complexity of variables and issues, as well as to contextualize the matters. The communities and schools within the M-M School District were experiencing very similar

transitions. Both of their futures seemed to be partially determined by their present and future growth, as well as their relationship to one another. Certainly the sustainability of Minor Elementary School and its surrounding community depends on the growth, while the Major school may need Minor Elementary School in the very near future if, like many boomtown schools, they run out of space.

## Case Study Design

The literature analysis, particularly the Social Disruption Hypothesis, framed this study and helped develop the purpose and questions. As Maxwell (2005) discussed, though, "no theory can illuminate everything" (p. 42). I took a constructivist perspective because individuals construct their own unique realities through their lived experiences. Creswell (2007) wrote, "Individuals develop subjective meanings of their experiences – meanings directed toward certain objects or things" (p. 20). Qualitative researchers "embrace the temporal nature of 'truth' that is context dependent" (Nolan & Talbert, 2011, p. 269). Participants shared their experiences and meanings, which were accepted as their perception of truth.

A qualitative case study approach was used, which involves exploring a case within a bounded system (Yin, 2011). The two M-M School District schools and surrounding communities were a single pre-boom case because of their connectedness due to the consolidation and their similar pre-boom growth experiences. Although there were two schools and communities within this case, it would have been inappropriate to separate them since they shared a school district (including administration, students, and some teachers). Additionally, in such small, isolated areas, the schools and communities

are fundamentally dependent upon one another, making it improper to detach the schools from the communities into separate cases. As such, any changes in one community or school impacted both communities and schools, so the only conceivable approach was to consider both as a single case. Case studies are appropriate when a case presents a unique and complex phenomena (Gay, 1996), and an oil pre-boom is both. Qualitative methods are necessary if case context is important to a study (Creswell, 2008), and researching the "new and changing community context" (Brown, Dorius, & Krannich, 2005, p. 46) is vital to understanding pre-boom community participants' attitudes.

Case studies are a common qualitative approach used in boomtown research (Evans & Garvin, 2009; Gramling & Brabant, 1983). Specifically, this study employed an embedded single case study research design. The embedded units are "subcases" which are analyzed within the case (Yin, 2011, p. 7). Major and Minor were analyzed separately, and community members and school staff within both towns were investigated to determine general, holistic themes of the case, as well as differences in themes at the embedded levels.

Yin (2011) wrote that case studies are appropriate to gain a deep understanding of a phenomenon in a real-world context, and often allow flexibility for methodological adjustments as the study evolves. Over the course of a year visiting the research sites, new participants emerged throughout the process. Documents from the local courthouse, state archives, and a museum piqued my interest in understanding perspectives from other community members. This led to different avenues of investigation.

## Research Methods

This case represents a consolidated school district, M-M School District, and two communities experiencing oil pre-booms in a region of rapid population growth. The case fit the constructs of an oil pre-boom because both communities were growing and planning for their future, land had been leased by oil drilling companies, and there was a large amount of resident speculation and rumors (Olien & Olien, 1982). As qualitative researchers design their studies, they must gain entry into the sites, recruit the participants, and gather and analyze data (Roulston, 2010). Since I lived in Major and attended the school ten years prior to the research, I had access to a few key stakeholders who helped me gain entry in the communities and schools. The superintendent offered full access to both schools and suggested teacher participants.

Community leaders allowed me to attend local and state planning meetings. This provided the opportunity to meet state representatives and community members who were directly involved in planning the future of Major and Minor. In addition, they supplied names of other residents impacted by the pre-boom growth who would likely be willing to participate. There were times when I walked into a business or county department, like the Job Development Authority (JDA) office, and simply asked to speak to the person in charge. Participants also made some archival data available, from financial records to projected growth data.

### *Participant Selection*

Purposeful selection of community members achieved "representativeness or typicality of the settings, individuals, or activities," and also "adequately capture[d] the

heterogeneity in the population" (Maxwell, 2005, p. 89). I chose 41 participants to interview because they represented the schools and communities. Residents in this study were the community subgroup of the case, which were people impacted by or influencing the growth. I interviewed 26 community members, including politicians and planners, business owners, residents, and emergency and social workers. There were 13 community participants who represented Major, four represented the county (both communities), nine were from Minor, and one was a Big City real estate agent.

Staff members in both schools were interviewed, and most teachers were observed in their classrooms. The total staff members in the M-M School District were 14 elementary teachers, 12 grades 7-12 teachers, four special education and services teachers, and three administrators (30 teachers, three administrators). I interviewed six full-time elementary teachers, one special education teacher and another half-time special education teacher/ half time elementary teacher, four full-time 7-12 teachers, two administrators, and one longtime substitute teacher (11 teachers, two administrators, one longtime substitute). Seven participant teachers taught in Major School, four taught in Minor Elementary School, the music teacher taught in both, and two administrators represented both schools. These participants represented the school staff member subgroup of the case. Table 3 indicates the categories of participants included in this study.

### *Data*

Yin (2011) felt that qualitative case study research should include interviews, documents, and participant observations (p. 10), all of which were used to inform this

Table 3. Study Participant Groups

| Participant Groups | Number of Participants |
|---|---|
| Elementary Teachers | 8 |
| High School Teachers | 4 |
| School Administration | 2 |
| Community Politicians/Planners | 4 |
| Community Business Owners | 9 |
| Residents | 10 |
| Emergency/Social Workers | 4 |

research. Data collection occurred from November 2011 to November 2012. From November 2011 to March 2012, I travelled to Minor to observe and interview teachers all day on Friday, and interviewed community members and teachers on Friday evenings and weekends. From March 2012 to November 2012, I studied Major participants similarly.

*Documents*

Glesne (2011) recommended performing rich literature-based research prior to observing (p. 41). I was looking for issues present in past literature, and also investigated matters that emerged during the research process. These issues included, but were not limited to: space availability, new student and community member acceptance, community support, attitudes, traffic, crime, and educational impacts of growth. Yin (2011) posited that archival documents can provide a support for a case, but do not tell

the whole story. Therefore, I used the available archival documents and my observations to shape my questions and discussions with participants. The documents included in this study were newspapers, press releases, school and community data, financial and state documents, and other information that aided in creating a historical perspective of each community.

Since the variables of communities are crucial in understanding school, town, and place context, the historical lens helped interpret responses. In addition to context construction, documents and other data served as a tool for triangulation. Triangulation involves collecting data from several sources and methods (Maxwell, 2005). "Collection and comparison of this data enhances data quality based on the principles of idea convergence and the confirmation of findings" (Baxter & Jack, 2008, p. 556). The multiple data sources helped validate the findings. For example, population growth documents helped support the contention that community members were feeling more crowded because of the growth.

*Observations*

Although I attended Major School and lived in the community ten years prior to this research, there have been many changes, including: the district consolidation, many teacher retirements and transfers, building updates, and the new growth. Only two teachers remained that were my own instructors. It was obviously not an entirely new school to me, and although I also did not know any of the students, it was my goal to "make the strange familiar and the familiar strange" (Glesne, 2011, p. 67) in the observations of both the school and community. Prior to the study, I held the school and

community in high regard, yet had no personal stake in either and had rarely visited Major.

I kept a research journal to help guard against bias. Since I had experiences in Major, I recognized some community members, businesses, and school staff members during the course of this study. There were times when I made judgments against the schools and community based on my prior experiences, and my research journal helped me identify what my judgments were and guard against letting those work their way into my research and analysis. Early in the study, for instance, I wrote:

> Mixed feelings being back. Drove in and the car got sprayed with pebbles from an oil truck. The boom's terrible for cars around here…Toured Major School earlier and it brought back some memories – good and bad. Talked to [my past teacher] and felt strange talking to him. I never thought he cared about us (his students). (Journal Entry, November 18, 2011)

In another entry, later in my research, I wrote that the convenience store was "worse than I remember it. No pay-at-the-pump in 2011? And I forgot how everything closes here by 9 PM. Growth might change that. That might be good." (December 10, 2011). Although I had some positive and negative opinions of the communities and schools, the research journal helped me understand and clarify my views. The journal also included research ideas, preliminary findings, and changes I observed and experienced throughout the research. Environmental, character, and interaction observations informed the interviews in this study.

All of the school observations were participatory. I observed all but five of the teachers, and none of the administrators. Scheduling difficulties prevented me from observing all school staff members. Most school observations occurred once for an hour,

but six of the observations lasted from four to six total hours over two or three visits. Most teachers asked me to help with group work, art projects, or teaching. This participation not only immersed me in the environment, but it helped build rapport with the school staff participants. In very small schools, community members or visitors are expected to participate. I observed the community by frequenting businesses in both towns, jotting notes as a nonparticipant, and attending some of the county and state planning meetings.

During the observations, I created fieldnote jottings that were clarified and expanded into detailed descriptions soon afterwards. The jottings represented my experiences and observations. Through the extensive observations, thick description of the environment accompanied the setting. According to Creswell (2007), thick description occurs when the "writer describes in detail the participants or setting under study" (p. 209). During the teacher participant observations, I wrote about the environment of the school and classrooms, the interactions of students and teachers, and other observable details related to growth. Some of these jottings helped inform the study's context and develop interview questions.

*Interviews*

After gaining permission from participants, they read and signed an informed consent form and I requested approval to record the interviews. See Appendix A for the School Staff Consent Form, and Appendix B for the Community Member Consent Form. Two interviewees asked not to be recorded, and six of the last interviews were not recorded, since they were follow-up interviews, but I jotted notes from the interviews and

expounded upon my jottings in a voice recorder afterwards. I did not record the last six follow-up interviews because further questions surfaced about the communities after the initial analysis and a full, recorded transcription was not necessary to help understand the participant responses.

Interviews were formal and semi-structured, with the "interview protocol…used as a 'guide'" (Roulston, 2010, p. 14), which allowed some freedom for developing questions and asking "follow up 'probes'" (p. 14) as the interview progressed. Yin (2011) suggested asking questions that allow participants to describe their situation and emotions and not simply provide an answer. Some of the questions were developed in advance based upon my literature research and observations. I initially gained trust and established rapport by developing relationships with school staff subjects during observations and asking nonthreatening questions at the beginning of the interviews, then followed by some of the formulated, open-ended questions, such as:

1. What makes living/working here unique?
2. How would you describe your community/school recently?
3. What do you feel about the oil boom?
4. What would you need if you got five additional students in your classroom next year?
5. What would be an ideal situation for your community/school in ten years?

As the interview progressed, I asked probing and follow-up questions to elicit deeper responses from my interviewees and clarify questions I had.

The school staff member interviews lasted from 25 to 45 minutes, with most lasting about 45 minutes. I requested eight follow-up interviews to gain more data, and five of those were phone interviews. In one case, I met an oil worker on the street and asked him some questions, but was only able to speak to him for a short time. Three of the interviewees moved and two passed away during the duration of the study, making further clarifications impossible.

All interviews were transcribed as soon as possible afterward. I transcribed them verbatim, but left out most of the extraneous hesitations and speech eccentricities for the sake of readability because speech patterns were not essential for creating meaning for the readers. Only long hesitations and fillers, such as "um" and "uh," were left in to indicate a longer pause, and were removed for reporting in this study. I also replaced identifiable names of the locations and people with pseudonyms in brackets when they were transcribed and reported.

## Data Analysis Procedures

Interview transcripts were coded using Weft QDA coding software after each interview. See Appendix C for a Weft QDA screenshot. In qualitative research, codes are small chunks of information that are labeled and grouped based upon pattern or similarity which represent participant responses (Leech & Onwuegbuzie, 2007). Some codes were developed a priori from the literature and searched and applied within the interviews, while others emerged from the transcripts. Codes were then used as a baseline for analyzing consequent transcripts, and existing and new codes were added and modified as similarities in participant responses became apparent, in a cyclical

process of data analysis. Over 100 codes were initially developed from the transcripts. After preliminary coding, I reread the data for further coding, grouping, or expanding. Similar codes were combined, renamed, and collapsed, while codes deemed to be either unimportant to the general study findings or insignificant were analyzed to determine if and how they should be used in the concluding report. The final codes were the most prominent representations of the participant responses, and were "developed to form a description [and] identify the themes" (Creswell, 2008, p. 20). See Appendix D for a code chart of the final codes used in this study.

After meeting with my advisor, I reorganized the codes according to similarities into major themes that represented patterns (both similarities and differences from the interviews) within the case and effectively elucidated the relationship among the contained codes. A theme "captures and unifies the nature or basis of the experience into a meaningful whole" (DeSantis & Ugarriza, 2000, p. 362). A cyclical process of analysis was used to develop the themes. Initial themes were noted in research journals during the research process, checked against the research questions and literature, examined during and after coding, and then modified and reexamined during and after grouping of the codes. Themes were represented by categories, which "aid in the development of theoretical concepts" (Maxwell, 2005, p. 96) and help define and describe code clusters and their relationships. In a later check, a whiteboard session allowed me to analyze the "major findings" (Creswell, 2008, p. 189) of the case, and the final categories were identified as Space, Teaching and Learning, Community Disruptions, and Uncertain Future.

Figure 2 represents codes, categories, themes, and assertion/sub-assertions of this case study. The codes within each category are listed, along with the themes that illuminate the categories. All of the categories and themes contributed to the final assertions. The codes' colors in the figure symbolize the amount that members of each community discussed the codes. Bright red codes indicate that the code was discussed most by Minor participants. Orange codes represent those that Minor participants discussed slightly more often. Black codes mean Minor and Major participants discussed them similarly. Light blue codes symbolize that Major participants discussed the codes somewhat more often than Minor participants, and dark blue codes mean Major participants discussed them most.

Theme I was: Increasing pre-boom population impacts the physical, aesthetic, and emotional space of residents, influencing their acceptance of newcomers. The codes within this category came from participant interview responses and observations, and included: Abundant Space, Trust, Minor-Like, Acceptance, Aesthetics, Industry Space, Changing Town, and Crowded. Theme II was: Pre-boom growth brings a transient student population with lower academic levels, affects funding, and increases teacher workload, but peer acceptance of the new students and community support for the schools remain strong. Codes in this category included: Instructional Style, Academic Records, Community Support, Transience, Accepting, Academic Levels, Diversity, Student Home Life, Economics, Oil Industry Work, and Workload.

Theme III was: Rural pre-boom communities experience many levels of real or perceived social change, which disrupt residents' rural lives. The codes within this

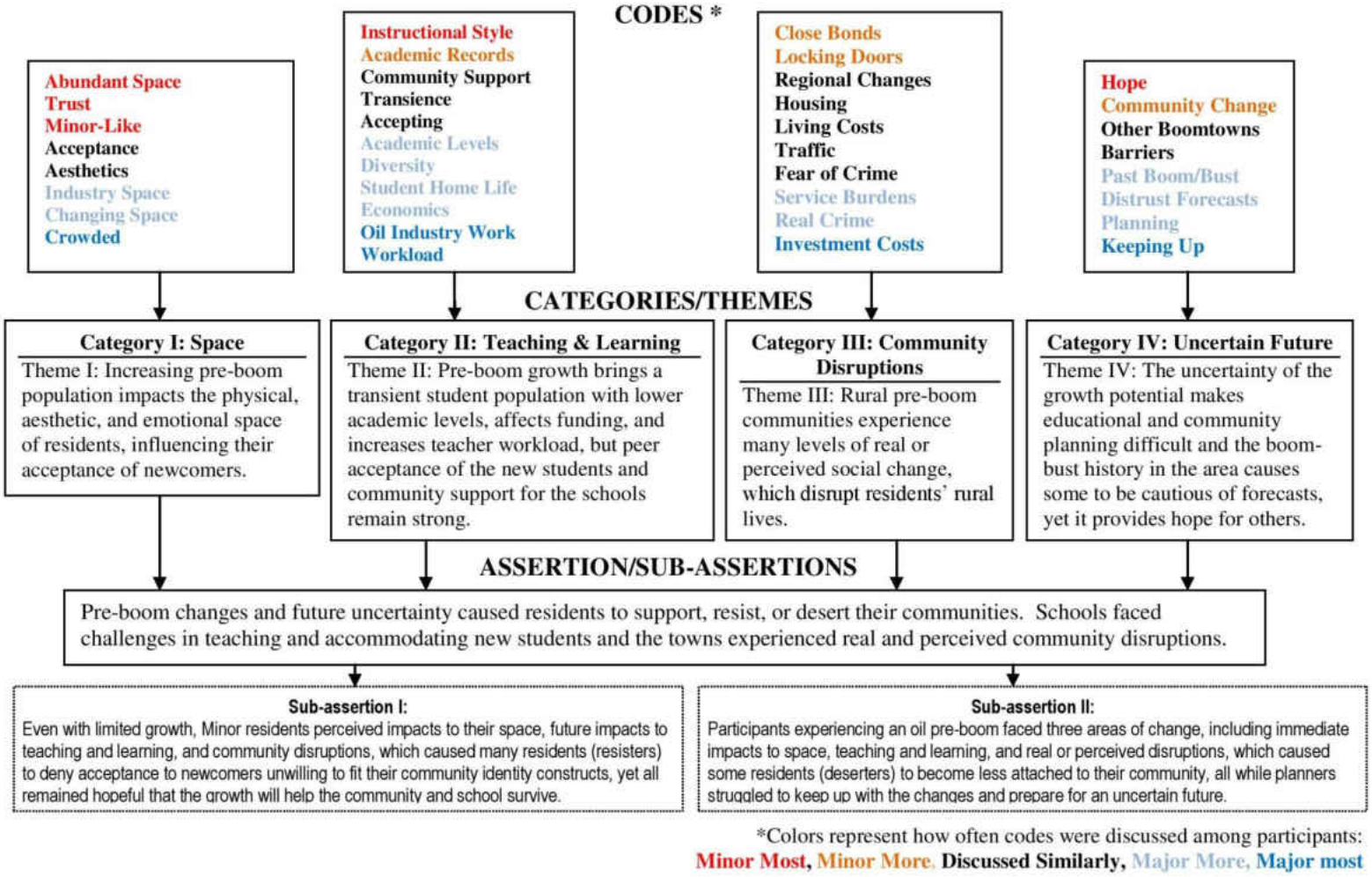



Figure 2. Codes, Categories, Themes, and Assertion/Sub-Assertions

category were: Close Bonds, Locking Doors, Regional Changes, Housing, Living Costs, Traffic, Fear of Crime, Service Burdens, Real Crime, and Investment Costs. Theme IV was: The uncertainty of the growth potential makes educational and community planning difficult, and the boom-bust history in the area causes some to be cautious of forecasts, yet it provides hope for others. While Minor was not preparing for growth, the pre-boom still provided hope for the community and school survival. The codes in the final category, Hope, were: Hope, Community, Other Boomtowns, Barriers, Past Boom/Bust, Distrust Forecasts, Planning, and Keeping Up.

As Creswell (2008) recommended, the themes were used to create headings in the findings chapter of this study, and each theme was followed by "a chronology of events [and] the detailed discussion of several themes (complete with subthemes, specific illustrations, multiple perspectives from individuals, and quotations)" (p. 189). Glesne (2011) posited that the goal of data analysis is to make sense of the data and reduce large amounts of information into a simplified story. Initially, a single assertion was generated which symbolized the relationships between the findings of the four themes in this study. Upon further analysis of the literature and a deeper interpretation of the differences of the two communities within this case, one assertion and two sub-assertions were developed. I reexamined the codes, categories, and interview data to discover how the communities within the case should be represented, and found that there were distinct, yet sometimes subtle, differences. I revisited the literature for relevant theories and interpretations that may have partially explained this study's findings. See Appendix E for a list of the data analysis procedure steps.

The assertion represents the general findings of the case and similarities of the communities and schools, and the two sub-assertions symbolize the relationships and differences across the domains of the general themes of this study, and help simplify and explain the contrasting findings at the Major and Minor levels. The first sub-assertion, which described Minor, is: Even with limited growth, Minor residents perceived impacts to their space, future impacts to teaching and learning, and community disruptions, which caused many residents (resisters) to deny acceptance to newcomers unwilling to fit their community identity constructs, yet all remained hopeful that the growth will help the community and school survive. The second sub-assertion, which described Major, is: Participants experiencing an oil pre-boom faced three areas of change, including immediate impacts to space, teaching and learning, and real or perceived disruptions, which caused some residents (deserters) to become less attached to their community, all while planners struggled to keep up with the changes and prepare for an uncertain future. These assertions were grounded in multiple methods, copious data collection, and participant responses (Nolan & Talbert, 2011).

## Validity

A case study researcher should be "reflexive or self-disclosing about his or her position in the study" (Creswell, 2007, p. 219). Qualitative research validity can be threatened by the background and presence of the researcher, the way data is researched, and the way in which it is presented (Wallen & Fraenkel, 2001). In short, researchers must understand how they can be wrong in their interpretations. Following are some

potential threats to qualitative validity and how I addressed the issues to ensure higher study validity (Milinki, 1999).

First, I performed extended fieldwork (Glesne, 2011) and spent a great deal of time in each school and community and interviewed key stakeholders over the course of a year. I believe the description of the communities and the findings are representative of the case. Low inference descriptors, or non-judgmental descriptions, were incorporated within the data presentation. Specifically, subject responses were included verbatim and many participants were given the opportunity to read the transcripts for validation, though only five chose to do so. They made no changes to the transcript, but corrected some name and location spellings.

Data triangulation (Glesne, 2011) added validity to the data analysis and presentation. This study used multiple interview data, observation data, and artifacts to substantiate the findings. Similarly, the study included method triangulation, or multiple research methods. Participant observations in the classrooms helped glean a greater understanding of the teachers' experiences. I continuously looked for both positive and negative data in the analysis and narrative that helped contrast perspectives and provided richer results. Additionally, through advisor checks to discuss current findings, codes, and explanations, I was guided me to search for more data, interview new subjects to gain a wider perspective, and refine my data analysis. Even through the process of data analysis, I checked resources for the most current data, since the oil boom in North Dakota changed so quickly and often. Further reading, grappling with the data, and revising offered me a deeper understanding of the case.

Finally, the issue of reflexivity is often a concern in qualitative research. Reflexivity is an understanding of your own biases in the data collection and analysis (Glesne, 2011). As a past student in one of the schools and resident in the community, I approached this study with some familiarity of the location and context. It was important to ensure that my expectations were not influencing the data. The literature review regarding other boomtowns helped clarify some of the findings of this case. In addition, my research journal helped keep track of my decision-making processes.

Much of the findings did indeed fit with the Social Disruption Hypothesis, as many boomtown community studies do. However, some levels of analysis were not addressed in the Social Disruption Hypothesis, and I had to look elsewhere for clarification of my findings. The final analysis took place after I had recently moved and was living in a boomtown, and there was a potential that my experiences there could impact the data presentation. To avoid this, I continuously reviewed my emerging interpretations with others.

## Ethical Considerations

No known harm was done to anyone involved in this study as a result of the research. The university's Institutional Review Board approved the study prior to any research with the participants. They all received a letter of consent, which they read and could choose not to participate. If people decided to participate, they were given a copy of the letter for their records. At any time, they could elect to discontinue participation with no questions asked and no repercussions. No one withdrew from the study.

To ensure confidentiality, I only discussed the data and findings with my advisor and dissertation committee. No visual recording equipment was used, and all digital recorded information was stored on my password protected personal computer, along with all transcribed data. Pseudonyms for names and locations were used throughout the study. In addition, the consent forms were locked in a secure location. Although community officials asked me to attend community planning meetings as the representative for education, I declined to add any input which affected their decision-making, such as voting on initiatives or adding my name to their planning documents. In the data collection, analyses, and final narrative, I tried to stay neutral and provide a full, honest portrayal of the case.

## Chapter III Summary

In this chapter, I described the study's problem, research questions, and the research design. Methods were detailed for gaining access to the sites, choosing participants, and conducting interviews. Data collection was performed in several ways, including participant observations, semi-structured interviews, and document investigation. I analyzed my data into codes, categories, themes, and two assertions, and described issues of assumptions, limitations, validity, and ethics addressed in my study.

# CHAPTER IV

## FINDINGS OF THE STUDY

The purpose of this embedded single-case study was to understand and interpret the attitudes, perceptions, and reactions of school staff members and community members in a rural school district and two communities experiencing an oil pre-boom. In this chapter, findings are presented from interviews, observations, and documents and analyzed at the community and school staff levels for Minor and Major participants. This chapter includes a discussion of the four themes gleaned from the results of the data analysis.

The following tables list the study participants. Table 4 represents the community interviewees, the town(s) they represent, and the years they spent in the community. Table 5 identifies the school staff members, the school in which they teach, and the number of years they have been in the district. Although the communities were in early growth stages of an oil boom, they had not yet reached the peak-boom stage, according to their population growth estimates. There was not yet significant Bakken Shale Formation drilling occurring in the county, which was estimated to happen soon, and would likely plunge the communities quickly into the peak-boom stage. Thus, for the purpose of this study, both communities are considered pre-boom, because the full effect of the boom had not yet occurred, but would likely happen in the near future.

Table 4. Community Member Interviewees

| Job Title | Community | Years in the Community |
|---|---|---|
| Convenience Store Owner | Major | 8 |
| Grocery Store Owner | Major | 2 |
| Oil Field Trainer, Resident | Major | 39 |
| Real Estate Agent | Major | 15 |
| Job Development Authority (JDA) Chair | Major | 32 |
| Resident, Substitute Teacher | Major | 10 |
| Resident | Major | 15 |
| Resident | Major | 14 |
| Resident | Major | 74 |
| New Oil Worker Resident | Major | ½ |
| Storage Units Owner | Major | 28 |
| Oil Leasing Company Owner | Major | 2 |
| Ambulance Director | Major | 24 |
| County Auditor | Major/Minor | 5 |
| County Commissioner | Major/Minor | 19 |
| Social Worker | Major/Minor | 2 |
| County Sheriff | Major/Minor | 4 |
| Manufacturing Business Owner | Minor | 6 |
| Diner Owner | Minor | 63 |
| Mayor/Hardware Store Owner | Minor | 61 |
| Cop/Ambulance Worker | Minor | 10 |
| Resident | Minor | 78 |
| Recently Graduated Student/Resident | Minor | 18 |
| Bartender | Minor | 2 |
| Farmer Without Mineral Rights | Minor | 42 |
| Farmer With Mineral Rights | Minor | 35 |
| Real Estate Agent | Big City | 29 (Big City) |

Table 5. School Staff Member Interviewees

| Job Title | School | Years in the District |
|---|---|---|
| Grade Two Teacher | Major | 5 |
| Grade Four Teacher | Major | 10 |
| Business Teacher | Major | 5 |
| Language Arts Teacher | Major | 20 |
| Family, Career, and Community Leaders of America (FCCLA) Teacher | Major | 4 |
| Spanish Teacher | Major | 6 |
| Special Education Teacher | Major | 3 |
| Superintendent | Major/Minor | 11 |
| Elementary Principal | Major/Minor | 29 |
| Music Teacher | Major/Minor | 11 |
| Kindergarten Teacher | Minor | 10 |
| Grades Three/Four Combined Teacher | Minor | 32 |
| Grades Five/Six Combined Teacher | Minor | 27 |
| Longtime Substitute Teacher | Minor | 30 |

The participants in this study had all been impacted by the changes resulting from the pre-boom growth, but often in different ways. Some felt the pre-boom caused negative economic effects. Employers struggled with hiring workers due to the

competition with the high-wage oilfield jobs. Others felt the increased rent prices made it more difficult to find affordable housing. Other participants described the effects in the form of physical community disruptions, such as increased traffic and more customers in the local businesses. Some believed that the pre-boom growth brought undesirable-type people into the area and became more concerned with crime. For the first time, some residents in both communities began locking their homes and cars. Certain participants viewed the growth as generally positive, particularly because they had a financial investment in the population growth, or because it gave hope that the community or school might survive.

After reviewing the data, four themes emerged. The first theme was: Increasing pre-boom population impacts the physical, aesthetic, and emotional space of residents, influencing their acceptance of newcomers**.** Most participants indicated that their space was somehow affected due to the population influx. The second theme was: Pre-boom growth brings a transient student population with lower academic levels, affects funding, and increases teacher workload, but peer acceptance of the new students and community support for the schools remain strong. As residents moved to the area, some brought their children, which added new benefits and challenges for the district.

The third theme was: Rural pre-boom communities experience many levels of real or perceived social change, which disrupt their rural lives. There was increased strain on communities' emergency and social services, traffic, crime, housing costs, community costs, and disruptions to regional dimensions of residents' social lives outside their direct communities. The fourth theme was: The uncertainty of the growth potential makes

educational and community planning difficult, and the boom-bust history in the area causes some to be cautious of forecasts, yet it provides hope for others. Minor participants held onto hope for survival, but Major residents approached the future with caution in mind, making preparations for sustainability in the face of growth. Figure 3 lists the general differences between the two communities and schools as a result of the growth.

| Minor | Major |
|---|---|
| Grew less | Grew more |
| Did not make a city growth plan | Made and used a city growth plan |
| Not constructing to accommodate new businesses or houses | Constructing to accommodate new businesses and housing |
| Residents retaining a strong identity | Some residents detaching from the community |
| School and teachers had abundant space, but needed students | School and teachers needed space |
| Boom had not caused significant costs to the city | Boom had caused significant costs to the city |
| Hopeful vision | Sustainable vision |

Figure 3. Growth Differences Between Minor and Major

### Theme I: Increasing pre-boom population impacts the physical, aesthetic, and emotional space of residents, influencing their acceptance of newcomers

As Minor and Major grew, residents felt changes to their physical, aesthetic, and emotional space. Land values changed and the towns became more crowded, which impacted the housing market, businesses, and the schools. Residents saw aesthetic

changes occurring in their towns and the region. As residents experienced change, some indicated they were less satisfied with their communities and may not be willing to immediately accept newcomers.

### *Minor*

From 2010-2012, Minor's population had increased to the point where there was no housing available. Although the homes in Minor were all sold and occupied, the growth stalled until more housing could be built. The community's physical space changes were minimal, except for changes to land values. The school had abundant open space. However, some residents were concerned about changing aesthetic space that did not represent their perceived community values. More cars were parked at the bar, while most residents would prefer to see cars parked outside of the churches. More vehicles (used as temporary housing) appeared on empty city lots and residents' lawns, which, some felt, was not a tasteful representation of their community. Additionally, Minor residents expressed concerns that the changes had already impacted their emotional space, including risks to tradition and values.

#### *Physical Space*

Minor's location within the Bakken Shale Formation places it within an hour drive from several peak boomtowns. Oil workers who cannot find lodging near their work sites search local communities, such as Minor, to look for a place to live. Although Minor does not have the means to grow significantly without substantial community investments, the oil pre-boom changes were clear to its residents. They did not feel their physical space was changing dramatically, but still had concerns of the risk that future

growth could bring to their way of life and community values. The greatest immediate physical space consequence in Minor was the oil leasing on the land.

When the oil boom began in North Dakota in 2008, oil companies rushed to lease the mineral rights on the regional land. Mineral rights can be severed and sold separately from the surface land rights, and were rarely for sale during the boom because they yielded all of the royalties of the sub-surface minerals, including gravel, coal, oil, and natural gas (Brostuen, 1981). Even prior to the boom, mineral rights were often unavailable for purchase. This had caused some mineral rights holders in the region to become incredibly wealthy, but for farmers without them, oil drilling was an impediment to their land and livelihood.

A farmer in Minor owned six quarters of land but rented and farmed a total of 30 quarters. A quarter is 160 acres. None of his land came with the option of buying the mineral rights and since he only owned the surface rights, he was unable to receive any of the money that oil wells on his land would bring. He explained:

> I have one well up that went up a couple years ago on a quarter south of town. It takes up 15 acres, the whole site. If they wanna put up a few more, I'll lose 60 acres of my land. They put up their own road, gravel road across my land. Took a couple months. I have to farm around it. I lost all the land that well's on, and it'll probably be on there forever, pumping or not. That land's gone for me.

Mineral rights owners can legally use the surface land to extract the minerals (Brostuen, 1981). When this farmer went to the courthouse to see who owned the mineral rights, he discovered it was a young farmer from Major. While he said he did not resent the young farmer, the two no longer socialized.

Another farmer in Minor was able to buy the mineral rights for two of his quarters nearly 20 years ago. He bought them for $100 an acre, or $16,000, on top of the surface land price, but believed that they were worth triple that value now. In North Dakota, mineral rights owners often get a signing bonus per acre, plus oil royalties from the extracted oil. He described his mineral rights:

> I'm not signing anything right now. I've been approached by three or four leasing companies, but I'm holding off. If we get hit like we're supposed to, and we will, our signing will go way up. I've been offered 500 [dollars] an acre, which was a slap in the face for here now. I'll sign when it gets to 1,500 [dollars an acre].

He accepted a $25,000 signing bonus from a leasing company from 2006-2009. Though they never drilled the land, he still got the money and the lease expired.

The residents of Minor felt few other changes to their physical space within the community. Although homes were all bought and filled with new oil-related workers, there was no new construction happening at the time of this study. Likewise, Minor Elementary School did not have a physical space concern. Since the school was a K-12 building before the M-M School District merger, and was now only a K-6 school with about 40 students, there was abundant space. Teachers tended to view space as an opportunity rather than a concern.

Throughout the building, the open space was staggering. The lunchroom, designed for a K-12 rural school, only had four tables set up for all of the students to eat at the same time. There were several locked rooms on the school's main floor, empty classrooms that were used for student collaboration, and a second floor of classrooms that was closed off entirely. The elementary music teacher took a gymnasium as her music room. I observed her class and she asked if I would work with a small group vocal

ensemble and advised that I go find "one of the open rooms." The students and I pushed the piano into the hall, where I saw three empty rooms. The students shouted, "echo" when we went into the room, and we listened as their voices echoed in the large, empty space.

In the Kindergarten classroom, there were eight students in a room large enough to hold many more. The teacher had learning stations, reading areas, and technology throughout the classroom. The students had collaborative seating spaces, interactive smart board technology seating, and art stations. She explained:

> I've also gotten used to small sizes so there may be a mindset change [due to growth]. Right now our numbers are lower than we'd like them to be, ideally, so additional students would be very welcomed. Space would not be an issue for obvious reasons.

Minor teachers never mentioned space as a concern during the pre-boom.

*Aesthetic Space*

Although the community was still in the very early stages of change, some residents expressed concerns about the risk to aesthetic space of the community. Most homes in Minor were not newly built and updated, yet the residents took pride in how their community looked. The manufacturing business owner described the rotation of new people that moved into her neighborhood and felt as though the majority of new residents were young partiers. She was concerned because her neighbor allowed an RV to park on the lawn adjacent to her home. While this resident was unsure about who lived in the RV, she thought that it was beginning to make her area look like "a redneck neighborhood," which was not how she felt her community should be represented.

In addition to the concern of temporary living aesthetic disruptions, some residents worried about the lifestyles of newcomers. The third and fourth grade teacher noticed more trucks parked outside of the bar at night and she did not want children seeing the bar full of people. The Minor Diner owner agreed:

> I don't mind if they do what they're gonna do. They're young guys. I just don't want kids to see them drunk or stumbling around, you know? And we've seen a few of these guys doing that already, and I have a feeling it will get worse as time goes on.

Most Minor community members would only accept residents who were willing to be involved in the church and school. The third grade teacher explained:

> It used to be that new people could get accepted pretty easy because they were fine not going out to bars. They could socialize at church. Now we're seeing people who go to the bars all the time and don't care enough about the community to get socialized and they don't get accepted.

The Minor bartender, though, frequently welcomed new people in her bar. "They're usually good guys, just come in after working the fields. I got five guys who're regulars now, just park their oil trucks there after work and I expect them every day." They caused no trouble in her bar, and often left her very large tips when they paid.

*Emotional Space*

As their physical and aesthetic space changed, some residents felt more risk to their emotional space. They believed that their traditional rural values may be at stake. One resident, a recent graduate, described the Minor mechanic shop. Residents normally left their car and keys in front of the shop and when the car is finished, the mechanic left it parked on the street with the keys still inside. The owners would pick it up, drive it home, and pay later. With the new growth, however, he said, "They probably wouldn't

do that anymore. Less trust." He believed the Minor residents distrusted new community members simply because they were outsiders.

Some of the other participants expressed additional concerns. The Minor Elementary School kindergarten teacher said of the community growth, "Hate it. Hate the traffic, the greed, the crime. Hate what it's doing to the land. Nobody seems to care about the environment. The only people who want it here are the moneymakers." Some residents realized both the emotional challenges and community benefits of the growth. The fourth grade Major elementary teacher said of the new residents in the town, "I don't know if it's always a welcome change, but growth is better than decline for small towns." Many Minor residents were cautious about accepting new people into their community.

The manufacturing business owner told stories of residents being fearful of unmarked vans and phony delivery drivers who asked to come into the houses. These stories were spreading throughout the community, whether or not they were founded in truth. Some people who lived on farms observed more cars driving down their gravel roads. As a result, the manufacturing business owner said, "People are starting to lock their doors…I think with us living in such a small town, that we're hesitant at first to put 100 percent trust in new people that move in until we're given a reason." Four months later, she began locking her house doors for the first time and bought several bottles of pepper spray for security in her home since there were so many new residents appearing in Minor and stories of crime were rampant.

A recent graduate of Major School, and a current Minor resident, believed the farmers perceived oil workers as hard workers, which, in an agricultural community,

could serve as a means for acceptance. Some, though, like the third and fourth grade Minor teacher, had given up on the process of accepting new residents:

> In the town, it can be a little scary. I used to bake bars and bring them over to the new peoples' houses in this pan I wanted returned. Dropped it off and told them they could return it whenever they were done, whether it was a month, two months, whatever. Didn't really care. Now, I don't…There was a guy who moved in and had a past and I didn't know it. I was sending my daughter, she's 14, over with bars and then looked him up online, on that sex offender website. Scary, just scary. Now there are too many people in town who aren't Minor-like people. They're transients.

"Minor-like" people were, as she described, people who go to church and not to bars, and were hard workers within the community, and nearly every Minor participant described this identical idea, including the police officer in Minor:

> We accept them and let them make their own choice after that whether or not they stay a part of the community, socially, you know. If they want to prosper, be accepted like everybody else, then they need to be a part of it, or they'll get, basically, shunned.

Not all community members expressed negative emotional responses, particularly those who had benefitted from the growth.

The owner of the Minor Diner was much busier after the pre-boom began. Another resident, the fifth and sixth grade teacher, said that the growth had done "nothing for me. My brother, though, he's got land and it's good for him…Got a check for a half million. He actually sat down and wrote a check to his four kids for fifty thousand each." This teacher was pleased that his home was worth much more than when he bought it, since his retirement was only three years away and he was planning on selling his home and moving after he retired. The mayor also indicated that he was looking at taking

advantage of the economic possibilities of the boom. He had recently purchased land outside of the town on which to build storage units.

### *Major*

The Major School and community experienced much more growth than Minor did during the pre-boom. This was in part due to its larger size, industrial park, high school, updated infrastructure, and closer proximity to Big City and other boomtowns. Major also had taken preparations for growth. Residents and school staff members in Major discussed issues of space as a result of the growth, the experiences of teaching and learning within the changing school, community disruptions they experienced and perceived, and the uncertain future and sustainability of their community and school.

Since 2010, Major residents saw dramatic changes to their space. The communities had to renegotiate the physical space in response to a population influx. The school staff described their respective school's space as an important variable in their future success. The potential of disturbance to the aesthetic space influenced how community members described their beliefs about the new population. Many did not want to see their community go down the same path as boomtowns around them. Respondents also felt their emotional space was affected because of the steady population increase the community experienced between 2010 and 2012. Table 6 lists the Major population estimates from 2000 to 2025 in five-year intervals. The information is from the Major Comprehensive Plan put together by an engineering group to help Major identify needs and challenges as they grow.

Table 6. Major Population Estimates

| Year | 2005 | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|
| Population Estimate | 747 | 865 | 972 | 1125 | 1229 |

*Physical Space*

Oil companies began to move into Major because it had available industrial space and was a reasonable distance from the oil fields. They needed office and equipment space, and wanted it quickly. Their goal was to move into the community without investing a lot of time or capital. The Job Development Authority (JDA) Chair in Major explained:

> There's actually a lot of inquiries. The problem is finding a space without having them need to build. People wanna come in and set up shop, not build from ground, and we don't have a lot. I guess we have a couple for sale, but they should just be torn down, I think, or they need a lot of work or are the wrong size.

An oil leasing company owner moved into the industrial park in 2012 and was based in Major because of lower costs of operation than surrounding counties, but had not yet leased any Dorian County land. He went to the county courthouse and looked at mineral deeds to find which ones were not being leased, and began to contact the owners. He explained, "It's complicated. Some people don't even know they have the rights, grandma died and it's theirs now. I'm starting to look at [Dorian] County land now because they'll be drilling here more soon." Leasing the land around Major for oil could potentially flood the area with workers.

The community of Major was not designed for this type of growth. The commercial and industrial businesses suited the small number of residents in the area, but

not more. As people moved into the region looking for employment, the lack of housing in other, larger booming cities forced some to move into regional communities such as Major. The Major Comprehensive Plan indicated that it was necessary for the community to rezone the land to facilitate growth into the future, which community leaders did in 2012. In 2010, the land within the city was designated as follows: 46.8 commercial acres, 61.7 industrial acres, 134.2 residential acres. The future land use was zoned to be 48.3 commercial acres, 260.5 industrial acres, and 188 residential acres. At a community planning meeting, the head of the North Dakota Department of Mineral Resources estimated that an average of one permanent resident should be considered for a community for each well they drill, plus temporary workers and additional residents to service the new permanent residents in retail, health, and other sectors. Table 7 includes future oil well estimates in Dorian County from 2010 to 2050, which were included in the Major Comprehensive Plan and used by state officials in planning meetings.

Table 7. Projected Dorian County Oil Wells

| Year | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---|---|---|---|---|---|---|---|---|
| Total Oil Wells | 280 | 400 | 450 | 500 | 530 | 580 | 610 | 660 | 700 |

As oil-related workers moved into and drove through the communities, some Major residents accommodated them. In 2010, a Major resident built 60 storage units to profit from the oil boom. Storage units were a necessity in the region. The owner of the units "put them up 'cause we needed them here. People in the camps and hotels, living in rooms, don't have nowhere to store anything…They're all taken. Filled up quick."

Existing businesses began to get inundated with customers. The owner of the convenience store and restaurant in Major said a group of 50 oil rig workers came in together looking for food and she was not prepared to help that many people. The business was about the size of an average singlewide trailer and was fairly crowded with food aisles, seating and grill areas, and rows of cigarettes and alcohol behind the counter.

Although oil workers were good for businesses in Major, housing could not keep up. Affordable housing was nearly impossible to find anywhere in the region of oil activity in North Dakota, and this was true in Major since 2011. A Major real estate agent believed:

> You'd be hard pressed to find a house in [Major] now. We've got two on the market; one's a farmstead and the other's a single family. We've had a few calling already and they haven't been on the market but, what, I suppose a month, month and a half.

According to the local real estate data, homes which sold in Major in 2007 averaged $58,400, while the average home price in 2012 was $125,600. In just the second half of 2012, the eight sold homes that sold in Major averaged nearly $158,000. A new home in a newly constructed residential street had three bedrooms and two bathrooms and was selling for $274,000, a price previously nearly unheard of in Major (particularly for a home in town limits without a basement or additional land). The county auditor frequently turned down people who contact her looking to move to Major. As a result, the Dorian County Commissioner had been in touch with a developer looking to build up to 45 houses and 16 apartments because "no normal, non-oil person can afford [the housing prices]."

About 40 new students joined the school district throughout the 2011-2012 school year. The classes averaged about 27 students in the core junior high and high school subjects. In elementary, the Kindergarten class was split into two sections with 20 and 22 students each, and other classes would likely need split soon. This posed a problem for a school that rarely split classes and did not have the room to do so. The Major English teacher stated, "We're already maxed out." All of the Major School teachers, regardless of the age or subject they taught, believed space was the most pressing need for Major School.

Some rooms were shared between several programs and teachers. The elementary music room shared space with the Head Start program and was also a storage area for classroom supplies because Major School had no available room. The music teacher had ten minutes before her music classes to move the Head Start tables, bookshelves, and storage areas and set up her own chairs, piano, and musical instruments. She said, "If you don't set it up just right, the Head Start people aren't happy, so you have to be careful you get it in the same order and place as when you came in."

The space proved to be a problem for safety and practicality. The Family, Career, and Community Leaders of America (FCCLA) teacher felt she could not feasibly and safely have any more students in her room, since her subject involved dangerous stovetops, knives, and cooking equipment. The second grade elementary teacher was more concerned with her ability to teach effectively in the space:

> We don't have a lot of room. With all the materials and the leveled readers, and the centers that we'd like to do, and the teaching approaches, even if we wanted to add one or two more classrooms to keep the class size small, we just don't have that.

As a response to the additional students and to partly address the demand for technical training in the oil fields, the school board opted for a permanent space solution and approved a multi-million dollar addition onto the school in 2011.

The new school addition included a new vocational agriculture department, science and business classrooms, and extra storage. The superintendent said the school board voted on the addition because "they wanted a permanent solution for our future needs. We have more kids going into technical fields, so an updated shop area can help some of that." As Major School grew, they needed additional teachers, including two extra elementary teachers and a paraprofessional in 2011-2012, yet housing space was an obstacle for hiring teachers.

It was challenging for the school district to hire new teachers for several reasons. First, there were shortages of teachers in 19 subject areas in North Dakota in the 2011-2012 school year (Baird, 2013, p. 105). It was usually difficult to hire teachers in most rural North Dakota communities (Macke & Gardner, 2012). The regional housing shortage and resulting high cost of living also made it challenging to pay rent or buy a home on a teacher's salary. The superintendent "anticipated the growth, knew that there was not housing available. When housing is available, it's gonna be awfully expensive." To address this, the school district purchased a four-plex apartment building in 2011 for $220,000, which, as of fall 2012, had four teachers living in it.

*Aesthetic Space*

As Major grew, some residents were concerned about maintaining the aesthetic appeal of the community space. One of the key goals in the Major Comprehensive Plan

was to maintain rural attractiveness. To help meet this goal, the Major Beautification Committee was established in 2010 to help Major preserve its aesthetic appeal throughout the growth. Major community members had the opportunity to see oil boom-related changes in nearby boomtowns and regarded this as a risk for their own community. The county commissioner said the Major Beautification Committee "just want to keep Major looking nice. They plant flowers, clean up [Broadway]. They're just worried we're going to end up looking like [Big City], like a mess." He expressed some concern that the man paid to water the flowers is a city worker and does Beautification Committee jobs on his paid city time. This is not a part of his job as a city manager that makes over $45,000 a year, and the commissioner estimated it took about three hours a week to water the flowers.

The housing shortage meant that many new residents in Major often required temporary housing. Some residents perceived this as a risk to the community's aesthetic appeal, economic contributions, and health codes. The JDA Chair explained:

> These people are living in permanent [housing], considered permanent residents, and don't pay property tax. So although they spend some money in town, they're a burden that way and can make the city look pretty bad. This guy here's fitting in so many. It's a health and safety hazard, it's gotta be. I see oil trucks parked in the trailer court and they have H2S [hydrogen sulfide], oil. That's a health issue.

A 15-year resident was concerned about the way the trailers at the city trailer park looked from the road. He said the amount of trailers and seemingly haphazard setup of them made the city "look trashy. A lot of places around here are looking trashy with all this stuff now." The stuff he was referring to was the increased temporary housing in the area and the crowded conditions of living.

However, not all residents described a concern of changing aesthetic appeal. The county commissioner actually explained that he was worried that the community may begin passing visual community ordinances, and did not "wanna get to that point." Some ordinances were already passed to respond to the growth. In 2010, Major approved a noise ordinance prohibiting semi trucks from using their engine brakes in town limits.

*Emotional Space*

As the physical and aesthetic space of Major was altered, some residents felt a risk to their emotional space and indicated a growing insecurity that accompanied the new population. The Major grocery store owner had mixed opinions about the growth. His sales increased more than 20% over the last year and a half, and he extended his store hours to accommodate the new population. However, he explained:

> If you go to the local pub, there's typically a rougher crowd. Some of the new people, almost all new people from six to eight, some of the new people will have some drinks at the bar and come to the store and say some things that are just pretty, um, inappropriate for the high school girls, and they were getting scared. So I don't let them work alone anymore.

One Major resident felt that some community members "don't like the idea of having more strangers in town… A lot more people I talk to are locking their houses and cars."

The owner of a convenience store in Major lived in a trailer next to her store and described a time when two male oil workers came to her home after the store was closed. The men demanded to see her teenage daughters, whom they saw working at the store earlier in the day. In another incident, two different oil workers tried to break into the store at night, claiming to need food and gasoline. This scared her and her daughters:

> With those couple incidents, we gotta double and triple check to make sure everything's locked up and secure and we ain't leaving money around or in the

> tills at night. I gotta be here a little more, too, since my husband is busy and I don't wanna leave the girls alone.

Those were only two negative episodes, and her business was significantly better financially because of the growth. Regardless, she put her business up for sale about six months after the interview and moved away. Although she was unavailable for a follow-up interview, a 14-year resident believed, "She took the money and ran. [She] wanted to live in a safer town, so she got out. My husband and I will probably do the same soon." She did not feel like Major was changing for the better, and was willing to move, particularly since housing prices were high and she could sell her home for a profit.

The FCCLA teacher, who was also a Major resident, described the community changes:

> Different people, new people that you don't recognize usually…[Major residents] need to wake up a little bit and realize you've got stuff coming into town, into the area. I don't like what I see going on. I'd just as soon wish we had the old North Dakota. Everyone's like, 'Oh, the oil's coming!' I just as soon the people didn't come. I know what's gonna happen. It is already. What's coming into the schools, in my opinion, is problems.

Major residents did not always accept new people. When a 15-year Major resident was asked about the willingness of the community to accept a person of a different religion or ethnicity, he thought for a moment and replied, "They would accept you, but boy, they'd watch ya." He was not originally from Major, and said he felt watched by community members when he moved to the town. A 10-year resident, who was a substitute teacher in the Major School, confirmed "There are definitely cliques in the town at all levels, and they don't let you in their groups if you're not originally part of it." In fact, one of the words she used to describe Major was "unaccepting."

An oil worker had moved to the town in 2011 and, after living in Major for almost a year, described his experiences with the Major residents:

> Well, let's just say you're the first person in Major who's come up to me and talked to me. Nope, people avoid me. Not mean, just don't talk… [My wife] thinks everybody here's stuck up. Just nobody here talks to her. She's missing home, and doesn't know anyone here. People just look away, you know that look, when she walks by. I just wish people could see me. I work really hard, harder than most, a dangerous job, come home to my wife and daughter…Most of us just work hard.

Two months later, in October 2012, this worker sold his home in Major and moved back to his home state, where he found a different oil industry job.

### Theme II: Pre-boom growth brings a transient student population with lower academic levels, affects funding, and increases teacher workload, but peer acceptance of the new students and community support for the schools remain strong

As the communities of Minor and Major grew, the schools were impacted. New students enrolled in both schools, and they tended to be academically lower than their peers. Teachers in both schools felt changes to the way they taught, either in teaching style or workload, or imagined that they would need to change their styles in the future as they would have larger class sizes. Although space needs were different in both schools, the increased funding that came with the oil pre-boom was a positive benefit for teachers. Residents in both communities continued to support their schools through the growth.

#### *Minor*

Some oil workers moved to the area and brought their families to Minor. Although students came and went during the course of this study, Minor Elementary School began with eight new students and maintained seven from the beginning to the end of the school year, which was a dramatic increase for such a small school. The

teachers were thrilled to have higher numbers, but the transience of the students created struggles. School staff members saw differences in academic levels of the new students, but believed it helped their traditional students' social skills. Most teachers were concerned that their instructional style would need to change if they continued to grow, and yet support from the community remained strong through these uncertain times.

*Transience*

The music teacher in Minor explained her struggles with the transient nature of the new students:

> Some stay, some go. That's part of it. I've had some who have rehearsed parts for a program or my concert and leave before it's [performed]. That's a lot of stress on me to rewrite parts or give it to another kid at the last minute [or] cut it.

During the rehearsal of her programs, two children stopped coming to school. She and the students worked at a frantic, last minute pace to replace lines. Additionally, as a longtime Minor substitute teacher discovered, sometimes students come and go so quickly that their classmates hardly learn their names.

The fifth and sixth grade teacher said the Minor Elementary School students were "really excited when they get new kids, just pumped. They don't get to meet new people their age too often." The music teacher commented, "The new ones are pretty quiet usually. But I hear students asking them about where they're from, seeming pretty interested." Minor students seemed genuinely excited that new people were in the school and rushed to introduce me to their new classmates who appeared in the week or two since I had left, and they also made sure to emphasize where he or she was from and tell me facts about that location. In one instance, however, two boys discussed a girl from

another state who was in the school earlier in the year. They said she was "weird," and they were glad she had moved back home. They thought she was weird because she was not from Minor and acted and dressed differently. The students also found it strange that she did not believe in hunting animals, since they hunted and most people they knew also did.

The administrators revealed that academic skill levels of the new students were generally lower than the current students in the school. Many school staff members attributed this to the high academic standards in North Dakota schools and the value the state places on education. The M-M School District elementary principal maintained, "We have a very strong educational perspective here, and a lot of the kids we see coming in are behind us." Other participants in this study credited the lower academic levels to the transience itself. When asked about the new, oil-related students' academic levels, the superintendent said they were "A to Z, with more probably, based on oil alone, probably more towards the Zs. Behaviorally, we haven't noticed that much." North Dakota student scores on the National Assessment of Educational Progress (NAEP) were statistically similar from 1992-2012, so there is little evidence yet of a shift in standardized test results because of the new students (National Center for Educational Statistics, 2012).

The third and fourth grade teacher taught a struggling reader from Denver, who is no longer at the school, and "didn't even know what to do with her." She and two other teachers tried more collaboration to generate ideas to get the student on track. They worked independently with her during their preparation hours and in class time, but they

did not believe she significantly improved during her time in Minor, nor did they feel like they had the expertise or training to address her needs. To add to the educational challenges of teaching new students, the lack of school records sometimes added to the difficulty in determining students' academic levels.

When the Kindergarten teacher gets new students, "it's a guessing game at first. They have test data that follows them, but you don't know who you have until they're in front of you, and sometimes you still don't know for a while." One student had moved from Georgia to Arizona to North Dakota within three months, and his school records were lost in the shuffle and lagged behind him when he arrived in Minor. Another student had virtually no records since he came from a state with few regulations on homeschooling, and Minor Elementary School was the first formal school he attended.

As students moved to Minor, some of their unstable home lives may have contributed to their academic levels. The music teacher in Minor felt:

> parents who work oil have less time with their kids because now. Like my husband, he's an electrician; he used to do his work in town. Well now he's getting calls from the oil companies to come fix their issues, even sometimes in the middle of the night or on weekends. And he'll go because the money's good, but it's a lot of driving. So I know of parents who drive a long way to work and aren't spending a lot of time with their kids. And he's not even oil, but it's affecting everyone.

She also said that her classroom management has changed as a result of home issues:

> They go home to an empty house or, or just an older brother or sister…Some seem more tired. If dad and mom are working or out, they don't get to bed on time. Some show up and are just a mess, hair's not done, coat's on backward. You know, parents are tired, so kids get tired.

Several students were new to the area and needed to borrow snow boots and winter coats from their peers. One mother with a southern accent asked a teacher what snow pants

were and why her child needed them. She came from a warm state and did not own cold weather clothing when they moved to North Dakota. Some teachers kept spare boots and coats in their rooms for the new students to use during the unfamiliar North Dakota winter weather.

*Instruction*

Although the school was growing, all Minor Elementary School teachers valued their low student-teacher ratios and appreciated the individualized instruction that they could provide students. The third and fourth grade teacher was concerned that additional students would force teachers to change their teaching styles:

> I like the smaller classes because it gives me one-on-one time with my kids. That's what I like most, talking to them individually, one-on-one. Having 20 or more students in a class, too much. I'd have to do a lot more lecturing, and I don't want that. That's not me. I could, but don't want to.

During the day, she had five third graders in the morning, and was joined by seven fourth graders in the afternoon. The small size of her class allowed each student to use the smart board in a hands-on grammar lesson, and could do so in about ten minutes.

The fifth and sixth grade teacher was also cautious about the growth potential and what it might do to his cherished individualized instruction:

> When you add new kids, we would lose some of that closeness and probably would need to give up some of our time. We couldn't give them the attention that we can give kids now. That's why we love it here, and if you have too many kids, it takes away one of the big advantages of working here. It just makes it a big school, and I think most of us like the small feel.

Like the other teachers in the school, he discussed students' siblings, their parents, where they lived, what animals they hunted for, and other personal information. He was

worried that if the school got "bogged down" with too much growth, the teachers would lose the "personal touch" they currently had.

*Community Support*

Even through the growth, Minor residents deeply supported their school, and all community participants confirmed that they would vote to pay higher taxes if the school required it. A Minor manufacturing facility owner said that the community was "absolutely supportive. Very active PTO [Parent-Teacher Organization]. Every mom is involved in the PTO. There is not one mom that doesn't help…the community is very active in the school."

It was apparent from nearly every interview with Minor residents that the consolidation a decade prior was still a sore spot for them. The fifth and sixth grade teacher said the consolidation "was hard. It was hard for the people to lose their school." Many perceived it as the beginning of the end for Minor Elementary School, which was a profound loss for the small community. The Minor police officer added, "After the consolidation, people started to see their hope, sort of fly out the window, so to speak. Lost the high school, lost the middle school, lost the mascot, name, all of it." Minor residents were still very concerned about losing their school altogether.

### *Major*

The population influx in the community added students in Major School during the 2011-2012 school year. Some students began school and left, while others stayed through the year of this study. Although Major School benefited in some ways, the new students also challenged the administrative staff and teachers. Funding needs, student

transience, and various student academic levels impacted the school. Teachers began reconsidering the type of instruction they could provide to new students.

*Funding*

The oil pre-boom had the potential to renew the school, but came with costs. According to the M-M School District superintendent, North Dakota provided nearly $4,000 per pupil according to the funding formula, so Major's increase of 40 students added about $160,000 in funding. In addition, property tax reassessments could benefit the school by providing additional funding to local districts as land and home price evaluations increased. Table 8 lists annual (2007-2011) county data for Dorian County residential property tax revenue, commercial property tax revenue, and total tax revenue (rounded to the nearest thousand dollars to protect the county's identity). Results were taken from North Dakota Property Tax Statistical Reports (Fong, 2007-2011).

Table 8. Dorian County Property Tax Revenue

| Year | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Residential Property Tax Revenue ($) | 1,150,000 | 1,180,000 | 1,350,000 | 1,380,000 | 1,580,000 |
| Commercial Property Tax Revenue ($) | 460,000 | 478,000 | 485,000 | 510,000 | 690,000 |
| Total Tax Revenue ($) | 10,400,000 | 10,400,000 | 11,000,000 | 13,000,000 | 14,420,000 |

North Dakota needed to fund schools as they grew, and since most oil tax revenue went to the state, not local governments, schools and communities often had to apply for

state grants in the form of energy allocations. There was a 12% yearly limitation on school budget increases in North Dakota, which hampered what schools could spend throughout the growth unless the schools applied for an exception to this limitation (Haggerty, 2012, p. 2). To accommodate the local demand for technical jobs, and to alleviate the space demand in Major School, the administration constructed the addition in 2012.

The construction was a two-stage process; the first stage, or the initial frame build, was in progress in the fall semester of 2012 at a cost of $1.33 million. The second stage was awaiting company bids. The school was paying for it with a reduction of school reserves, fund money, and oil impact grants from the state. The superintendent said the current construction project of building new classrooms came in at $400,000 over budget, and the school did not presently have the money to spend. The next and final stage of this project was estimated to cost the district at least $1.88 million. M-M School District also now had fewer students on the free and reduced lunch program, which cut federal funding. The superintendent explained:

> We used to have a higher percentage of free and reduced, and we do not now because the families are making more, the farmers and oil workers are making more, so they do not qualify, so our numbers are actually going down, which actually hurts us in the long run.

Additionally, hiring teachers was more difficult due to Major's rural, isolated location and high wages in every other area of the region's labor market.

The base salary for starting teachers in the M-M School District was $32,000 a year. The elementary principal realized that other boomtowns in the region were paying closer to $40,000 a year, which sometimes caused prospective teachers to ignore the M-

M School District. As an incentive to new teachers, the school charged a rent of $250 a month to live in the school's four-plex. The rent is deposited back into the school's general fund and the school custodians maintain the apartments. The vocational agriculture teacher described his experiences in the school apartments:

> Me and my wife live in there now. I honestly didn't imagine myself living in an apartment again when I graduated. Thought that was done in my younger days, but it's alright. I mean, I see the other teachers a lot there, talk about our teaching and vent a little. It's good that way. And the price is right, 250 [dollars] a month, because I couldn't afford to buy a house on a teacher's salary here…that's pretty bad. But it's the biggest reason I could even work here, having somewhere to live.

The proximity of teachers in the four-plex allowed him to form closer relationships with other new teachers. However, he struggled with the transition to a professional career since he continued to associate apartment living with a college experience.

The higher enrollment also meant financial benefits for teachers. The English teacher in Major explained:

> The money, three, four years ago, was a problem, asking for things, but now it's not. Mainly because, two reasons, the administration is more supportive, and there's more money now because of the oil. So really, I can ask for anything and get it. The money's a good thing.

Every teacher in this study believed that obtaining money for classroom items, such as books, decorations, and materials, was a benefit of the boom.

*Transience*

Although funding was an advantage, the new students that enrolled in the schools made a dramatic impact at the classroom level. In one Major classroom, six students were new that year, and each was from a different state, from Montana to Georgia. One teacher started the year not by asking what the students did over the summer, but asked

them to say their names and describe where they were from. It was the first time she had ever asked that from a class.

The new students the district received in the 2011-2012 school year forced the administration to split the Kindergarten class and hire additional elementary teachers. The elementary principal of the district commented:

> We did…in kindergarten, split our kindergarten this year as a result of numbers that have improved. You know, future plans are, hopefully, going to split some other classes in our lower elementary, split kindergarten first and focus on younger grades to get the numbers of student to teacher ratio at a lower rate. So those are some of the plans we're making for the influx.

The elementary school grew by 25 students and the high school grew by 15. Since many workers who brought their families were young, more of the children were also younger. In the fourth grade classroom, the teacher started the year with seven new students.

Some students were transient, and, as a Major School substitute said, "you have them one day and they're gone the next." The English teacher explained:

> The trouble is they come and go. They're oil families, they're construction families who are either rebuilding, like [Big City], or they're building new oil areas. So, really, it got to the point where we'd see a new face and ask, 'OK, are you flood, construction, or oil?' The problem is, a lot of them are transient and do come or go. The kids are out of sync, academically, with the rest of their peers.

There was a sense of some helplessness among some of the teachers, like the second grade teacher, since they did not get the time to make an academic impact on the transient students that left the school soon after they arrived.

The special education room had recently moved into the old art room of the school, which was larger and could accommodate Major School's growing needs. It was a fairly large classroom with partitioned cubicle walls to separate spaces as

paraprofessionals and special education teachers worked with students. The special education teacher said, "New to our area, I probably gained 3 kids is all, but during the school year it seems like a lot for our program." According to the M-M Elementary Principal, the district planned to hire another paraprofessional in the coming year to assist with the new student needs.

Some Major School teachers felt that misbehavior was not an issue specific to new students. However, the FCCLA teacher was concerned that some of the new students were bringing in some other problems:

> There are students that have come in, and they're bringing drugs with them. I don't know if that's related to the oil, or if that's coming from out of state. But that comes with it. And difference in attitude, and difference in work ethic is big, that's what I'm seeing. Differences in some of these. Pretty much any kids that come in, their work ethic is just not there.

In general, teachers and administrators indicated that the traditional Major and Minor students accepted new classmates well.

*Peer Acceptance*

The superintendent felt it was easier to get accepted at the elementary levels. The second grade teacher said that her class was excited about new children in class, yet their fast rate of transience sometimes controlled what she could accomplish with her new students. She had begun working on social and communication skills and she already did this "to help them whenever they get new classmates, and when Minor students come over here in seventh grade." The fact that Major School students were accustomed to getting new seventh graders every year from Minor may have contributed to their acceptance of new students. The special education teacher agreed. "They embraced [the

new students]. But I think we're unique in that every year we get kids from Minor, in the junior high…because we're consolidating, so they're used to accepting and changing their class dynamics."

One opposing view was from a 2012 graduate. He was a class leader who graduated in May during the study and wanted to discuss the school. He indicated it was very difficult for new classmates to be accepted by the Major students who grew up together unless they were talented athletes. He believed, "If you're a new kid, you're not accepted. Even a fourth grader, I saw it there. His class didn't waste their time with him. As the high school student, I could see what teachers weren't seeing." He was the only participant who was a student during the course of this study, and was therefore the only student perspective.

The pre-boom also affected teacher instruction and academics in other ways. The construction of the new addition could be a distraction to Major School teachers and students near the construction zone. The drills, saws, and noise were evident in the music room during choir rehearsal. Students rolled their eyes as they attempted to sing softly with a jackhammer pounding in the background. The construction occurred near a prominent school entrance.

*Instruction*

The new students' differences and surrounding oil boom had the potential to impact Major School teachers' instructional needs and academic planning. The English teacher explained:

> We see more diversity, more special education…A third of my students are on IEPs. A lot of cultural diversity. These students come from other states, other

> towns, out of state. They're not your typical [Major] student who's born and raised here. They have different thoughts, experiences, things that are new. We've seen some students with different religions who don't go to the same churches as their friends, which can be a surprise in [Major].

While other schools in the area experienced an increase in students who are English Language Learners (ELL), the second grade elementary teacher felt, "We've been pretty fortunate. We haven't had students with second language." The superintendent made it clear that he did not feel his teachers would be ready to teach ELL students, but there was a rural consortium for small schools in the area that had ELL specialists available to use if one was necessary. Since no Major teacher participants had ever taught an ELL student, none felt adequately prepared to work with this type of student.

Some teachers, like the business education teacher, did not feel confident in teaching students with diverse backgrounds. He clarified that he was not sure if diversities such as religion could even play a role in teaching or learning, saying, "I don't really talk about church stuff, so things like the students' religion don't make a difference for me." However, the Spanish teacher believed that more professional development in the area of diversity would be necessary in the future as the growth continued.

At the district level, the superintendent summarized how surrounding boom influenced academic planning: "Let's just say we're seeing more of our kids going out and working the oil patch, so why take the upper level courses?" The English teacher found the reduced size of her upper-level courses to be a bit alarming, but relieving in that she could focus on individualized instruction. One of her higher-level courses only had seven students, while some vocational agriculture elective classes had nearly 30. The 2012 graduate said about a third of his classmates was working oil industry jobs. Since

most oil companies in the area would not hire people without a high school diploma or General Equivalency Diploma (GED), students were not dropping out of school in high numbers. The recent graduate's classmates who planned on working in the oil fields after graduation had a class slogan of "Ds get degrees," meaning they would try just hard enough in school to pass their classes and graduate so that they could get a high paying oil job.

Major School staff members understood that the oilfield jobs were on the minds of students. The superintendent explained, "It's a little difficult when you got a kid who can graduate from high school and make more money than the top honcho in the building." The teachers felt that fewer of their students were presently college-bound. However, teachers in Major School had a "teaching is teaching" attitude, and approached their motivation as they always had. They tried to prepare their students academically for college, whether or not chose to go after they graduated. In an area accustomed to educating students who would work on the family farm during and after high school, oil field goals did not represent a paradigm shift in their motivational strategies. It did force some of them to modify other aspects of their job, though, such as the additional planning and grading time, and the extra workload required when teaching more students.

There are many benefits of working in small schools. The second grade teacher in Major believed they "just don't seem to have the same types of issues that big cities have." With the addition of more students in her class, however, she said:

> It's added a little more time at home...I used to check emails and things during my prep, but now I'm grading frantically while getting my lessons ready for the afternoon, and I'm moving a little quicker. The more I get done, especially with

> some of the new kids I got, the more time I have for myself at night for my husband. I still need to have a little husband time every now and then.

The business teacher already had an increased workload in his classes as a result of the additional students. When asked if he could manage six or seven additional students next year, he responded, "I think I could do it, but I wouldn't like it."

*Community Support*

The perceived level of support from the community varied among the teachers in Major. The English teacher said the community members "support the students, but not always the teachers." Every Major community participant indicated they supported their school and would continue to do so into the future. The owner of the grocery store would be willing to pay more if the school needed to pass a bond or levy to accommodate the growth:

> We give enough to the state and federal government. I wouldn't mind at all if we had to pay a little more per person to support the local community, especially if it helped the school in what they needed…It's our heart and soul. I get my workers from there, get my business from there, and it's just really important to keep giving back to the school.

All Major participants said they would vote to pass any tax increase that was needed by the school. A 14-year resident of Major believed it was important to keep the student-teacher ratio down and would be willing to pay to hire and add new classrooms. She understood that "the school, like most small towns, is just about the most important place in town…I've known of a few schools in the area that shut down, and the whole town folds." The pre-boom did not seem to diminish strong community support for Major School.

## Theme III: Rural pre-boom communities experience many levels of real or perceived social change, which disrupt residents' rural lives

Although Major grew more than Minor, residents in both communities felt disruptions had occurred as a result of the growth. At the community levels, emergency and social services were impacted, housing costs soared, and the communities and county experienced additional pre-boom-related expenses. There were real community disruptions in both towns, such as increased traffic and crime rates. Individuals in both communities generally negatively perceived the changes, such as concern of crime and increased traffic, as well as the changes in the region in which their towns were situated.

### *Minor*

Since 2010, new residents appeared in Minor. It was an unusual experience for community members to see new people walking along their streets. In the morning, elderly farmers would drink coffee and watch strangers walk by. Each then took turns guessing what his occupation might be and commenting about all of the new people in town. In this small community, residents understood the importance of growth. However, with the new people came disruptions to the town's emergency services, traffic, housing, and costs to the city of Minor. The changes in the area impacted not only residents' life in their own town, but in their experiences outside of Minor. Table 9 lists oil production numbers in 2008 (the beginning of the state oil boom) and 2011 (the year the pre-boom began significantly impacting Dorian County). As the oil production in the county increased, more jobs became available, crime increased, and more residents

began to carry concealed weapons. Data were from North Dakota State and Local Intelligence Center (2012).

Table 9. Dorian County Oil Production and Community Disruption Statistics, 2008 and 2011.

| | 2008 | 2011 |
|---|---|---|
| Daily Oil Production | 172,000 barrels | 575,000 barrels |
| Jobs | 717 | 818 Quarter 1<br>859 Quarter 2 |
| Uniform Crime Report Offenses | 6 | 25 |
| Vehicle Crashes | 56 | 83 |
| Average Arrest Rate Per Officer | 7.4 | 6.6<br>(11.2 in 2010, then hired an additional police officer) |
| Resident Concealed Weapons Permits | 20 | 110 |

*Emergency Services*

As the oil industry continued to expand in North Dakota, tens of thousands of residents moved into the region. Minor residents were most troubled by the new traffic around the town. Emergency workers were concerned about the trouble that the traffic might bring. A police officer and ambulance volunteer in Minor said:

> We just saw an oil driver accident last Friday. The highways are busier…We used to have, like, 15 calls a year, now we're starting to see an increase. Newer truck drivers are taking the job and can't handle trucks and aren't experienced. You have guys from Texas driving on ice. [The ambulances] get new calls, just got one a week ago for the truck and pickup accident just outta town. This is common out here now…it's not good.

This accident occurred on a snowy morning, and in the aftermath, a pickup truck and semi-truck were overturned in the ditch on the side of the highway about a mile outside of Minor. The driver of the pickup truck was a new Minor resident, and the semi-truck driver was an oil transporter on his way to Canada. Although this accident was a key topic of many Minor residents' conversations, no participants knew the name of the new, injured Minor resident until after it was printed in the newspaper.

*Traffic*

Minor community members were accustomed to virtually no cars on the town streets, and light traffic on the highway, often from agriculture-related vehicles and Canadian visitors. Recent oil-related traffic had changed that, particularly on the highway. One Minor resident, a recent graduate, once walked effortlessly across the highway to get to the gas station to buy snacks, but now he and his younger sister had to look and wait for trucks to drive past before they could cross the highway. He never needed to wait for traffic before this.

Another area of concern for police officers in Minor was vehicle speeding. The Minor police officer explained that North Dakota speeding and other punitive fines are very low, and they are not enough to deter some of the wealthy oil industry workers from breaking the law. He also said Minor has seen an increase in crime rates of:

> Twenty percent. Right on [the highway], there was something like forty percent increase in accidents last year, and that was a mild winter. Just people going too fast, sometimes had too much to drink, not knowing the roads and the correction curves. We get more calls, lot more, for DUIs (Driving Under the Influence), more for bar fights, some locals, but mainly young oil guys had too much to drink.

Some of the participants in this study, like the 78-year resident of Minor, seemed to liken newcomers' driving skills to their outsider status. He said, "The trucks drive around here and they're terrible at driving…they're not used to driving in the snow."

*Housing*

The effects of the oil pre-boom growth were startling to the Minor residents. The mayor stated:

> There are absolutely no houses for sale anymore, which is something that just happened in the last year...I get calls every day from people looking for homes, and have to tell them we don't have anything. I say, 'Nope, try again in a month.' That's something that I've never had to do before. Ever.

It was common for oil workers to buy residential lots and put trailers or manufactured homes on them in Minor. Several trailers appeared in the town throughout the course of this study. In addition, there were multiple pickup trucks parked outside of them, and sometimes campers or RVs parked on streets, driveways, and lawns. One resident was building an apartment in her agriculture manufacturing facility to rent to oil workers, and was considering building a motel in Minor within the next year. Since she had the means to accommodate the workers, she wanted to invest and make money if the community reached a peak-boom stage.

*Regional Disruptions*

Some Minor residents felt disruptions both within and outside of their direct community. Nearly every Minor resident frequently travelled to Big City to buy food and supplies. Big City was always a local shopping hub in the area, but was now a peak-boomtown. Minor community members read and heard accounts of crime and change in Big City, and also drove through the traffic. Several Minor residents indicated they made

fewer trips to Big City as a result of its changes, and most now disliked the booming Big City, which benefitted Minor's local economy.

The mayor and hardware store owner believed residents were ordering more appliances from him so they did not have to travel to Big City. "It's easier than ordering from [Big City] and getting it delivered. After costs, it's about the same anyway." Minor residents' personal experiences with growth outside of the community, as well as perceived risks they heard and read about, may have contributed to some of their attitudes about the pre-boom. Several Minor residents did not want the crime and traffic they believed happened in other boomtowns. This may have influenced how they imagined Minor's potential future.

*Major*

During this pre-boom, Major community members also found that certain areas of their lives began to change. Some disruptions were real, tangible elements, such as emergency and social services, traffic, crime, and costs. Other disruptions were intangible and perceived by residents. In addition, the participants were wary of the potential for disruptions if the pre-boom progressed into a peak-boom.

The Major residents and school staff members valued their lives in a small town which had traditionally been a lifestyle marked by a slower pace, safety, and support. A 15-year resident of Major described the town as:

> Slow. Not as slow as it used to be, but it's slow compared to living in a bigger town. And that's the life I like. Used to be, you'd drive up to the Broadway stop sign, and if you had to wait for one car, it was unusual. Now it's not terribly unusual to wait for four or five.

Residents' lives had not changed significantly, but they did not want to have to adjust to more drastic changes. As the JDA Chair put it, "We'd like to see growth, but we gotta see it the right way." Most Major participants agreed. The English teacher explained:

> The fear is that we'll get nothing but roughnecks, who just come here and live and do their thing and work, but they don't have families and don't do family things. In the meantime, we'd like families who would maintain the atmosphere of the town, like keeping churches and keeping the clinic.

The Major Clinic is one of several areas that had recently changed dramatically.

*Emergency Services*

Since the pre-boom began, the Major Medical Clinic saw a dramatic increase in patients. Five years prior, Major residents petitioned to keep the clinic open. With the surrounding growth, the Major JDA Chair said:

> We were just told we were the busiest clinic in the regional hospital system. More young people coming in…Originally, when they built the clinic ten or so years ago, they expected five patients a day, but now they're getting over a hundred a week. There was originally just a PA [Physician Assistant], but now they've doubled the patient rooms, have two PAs, two nurses, and they said that when it was originally built, just five percent of services were to people outside the county. Now it's thirty five percent.

The Major clinic constructed additional facilities in November 2011 to allow a nurse practitioner to offer general and women's health services.

Other emergency services were impacted due to the pre-boom. The Major Ambulance Service, which provided assistance to most of Dorian County, responded to a surge of calls since the pre-boom growth, particularly in response to automobile accidents. The Major Ambulance Director said state funding for their emergency services were "really, really good, thanks to the oil. We've had so many more calls, we needed to build a new rural service station and update our equipment. We've gotten, I

think, 200 thousand [dollars] in the last few years." The state offered grants and very low interest loans to cover the extra costs. Recently, she explained, there was another grant deadline and she only applied for $5,000, since the new building, fire truck, and ambulance were nearly paid off. She received a call from the grant office:

> They said, 'are you sure you don't need more?' I said, 'No, but I mean I could use it, I guess.' And they highly recommended I asked for more, and they ended up giving us 50 thousand dollars instead. And I put it to use.

The pre-boom changes were not always a positive financial contribution to the ambulance service, however.

A young couple moved to Major to find a job in the oilfield and ended up working lower-paid jobs. The man got hurt and needed the Major Ambulance Service to drive them to the Big City Hospital, and moved away afterwards without leaving any forwarding address or information, so the Major Ambulance Director said the ambulance service "ended up absorbing the costs. We've seen more of that lately." Additionally, it was getting difficult for her to find firefighters and ambulance workers, since most of them were volunteer positions and many young people seemed more interested in finding the new, higher paying oil-related jobs that demanded long hours.

*Social Services*

Dorian County's social service office is located in Major and had two full-time social workers. They also shared a child protection caseworker with two other bordering counties. Dorian County offered social services related to foster care, in-home case management, child protection, aging and older adult care, and financial assistance such as Medicare and food stamps. One social worker explained that the county growth required

more social services, predominantly child protection services, but not a dramatic amount yet. Their new challenge was running background record checks on residents. The social worker explained, "Some of them have moved three or five states and ended up here. There's not really a unified system for record-keeping, so we end up calling states, counties, asking to get them." In addition, social workers were being called more often to camper and trailer sites. While the county did not desperately need more social workers, she believed, "We think we're getting hit hard soon, and probably will need more. We're not to the point where we're overwhelmed, but we definitely don't have any downtime anymore."

Finding childcare was not difficult in Major. However, finding one that accommodated nontraditional work hours was impossible. Childcare was not available on evenings or weekends. For workers moving into the towns, though, the oilfield jobs were not usually traditional work hours.

*Traffic*

The traffic in Dorian County also increased over the previous year. With added residents and a booming industry, traffic is inevitable. Between 2009 and 2010, the North Dakota Department of Transportation (NDDOT, 2009 & 2010) reported that traffic in Dorian County increased by 275 vehicles a day, which included 130 commercial trucks. However, the next year, Dorian County traffic averaged an additional 2,425 daily vehicles, including 1,380 commercial trucks (NDDOT, 2010 & 2011). In that year, the 19-mile highway between Major and Minor alone accounted for an additional 1,075 vehicles on the road daily, including 585 commercial trucks.

Major residents were not accustomed to traffic. There were many large semi-trucks and, while their driving skills seemed fine, they often sprayed pebbles and rocks at cars that drove too closely. They sometimes drove caravan-style, where they would closely follow one another on the highway and passing those massive, 40-ton vehicles was unnerving. Experiencing these trucks on the road made many realize why vehicle accidents were reported so often in this area of the state. In fact, at least one Facebook page existed that was devoted to truck accident pictures in the Bakken Shale Formation region. There were presently over 50,000 subscribers to this page.

Oil trucks were present on the highways and within the town limits of Major, and there was more general traffic around the town. This was a busy buzzing of vehicles and not the gridlock traffic one would experience in a city. Most community participants saw traffic as the primary change to their town. A six-year resident of Major said, "It's definitely a lot bigger now than before, and there's a lot more traffic, surprisingly, for a small town…and it needs more than just a stop sign now [on Broadway]."

The county would need to adjust and invest in roads throughout the growth. Regarding the future, the Dorian County auditor explained:

> The trucks book through the town, the speed limit's 25 [miles an hour], but they don't go 25. They're zipping through town. But those are the types of things we'll see. It'll be good and bad, more good than bad I hope. But it's definitely not the Major of ten years ago.

The new traffic meant that new roads would be necessary in the future to accommodate these heavy vehicles.

*Crime*

With new population often comes new crime. Major residents believed criminal activity was increasing in the area. They were not necessarily scared of crime, but residents were taking precautions that they never thought they would have to in their small towns. In Major, the JDA Chair said, "There's a increase in illegal drug arrests in the county. It's almost impossible to hire deputies when they make triple in the oil fields. We raised wages, but it's not enough." Furthermore, she added, "It was quiet and slow, just peaceful then. Now, there's people working all hours. Truck noise at all hours, bar fights at all hours." Real crime had increased in Major.

The Dorian County sheriff's office received more calls of every type as the population grew. They received more domestic disturbance calls than ever before, specifically fighting. The sheriff stated:

> When the city's camp park filled up, we started to get a lot more calls out that way. They were usually alcohol-related. It's just the people moving in, you know, not having a stable place to live, drinking, we get a lot more domestics now.

The department hired an additional officer in 2011, and planned on adding another in 2013 since the county commissioners budgeted enough if one more was needed. The six officers were responsible for covering all of Dorian County, which was nearly 900 square miles.

The police department had previously made most of their DUI arrests in the evening or very late at night. However, as the oil workers got off work at all times of day, and some would go to home or to the bar and drink, they made DUI arrests all times of the day, including the mornings. The sheriff received a call at 9:00 AM and "two guys

were out in their campers…and I get there, and they're both drunk off their rockers…This was the morning, remember." Most oil workers, they emphasized, were hard workers and good people, but a small, noticeable minority broke the law. The sheriff realized that in small towns like Major, "Word gets out when things go down here, and people talk about it." Most residents discussed the law-breakers, not the law-abiders.

*Housing*

Like most booming areas, the housing supply in Major could not keep up with the demand, which caused prices to soar. The surrounding boom directly impacted the housing market. A real estate agent from Big City often met people who wanted to work in the oil fields, but the housing was nearly non-existent. He recommended that they look in areas outside the city, including Major. This caused a spill-over effect from the boom to the surrounding areas. Table 10 lists the Dorian County permanent housing estimates from the Major Comprehensive Plan from the years 2012 to 2022. With new, permanent residents, housing needs increase. These numbers were used in Forward Planning state meetings and county planning meetings when officials discussed infrastructure needs.

Table 10. Projected Dorian County Permanent Housing Needs

| Year | 2012 | 2014 | 2016 | 2018 | 2020 | 2022 |
|---|---|---|---|---|---|---|
| Permanent Housing Needs | 1430 | 1500 | 1710 | 1750 | 1780 | 1790 |

For some, these changes no longer represented the life they wanted. A 15-year Major resident said that prices have risen to the point of being unaffordable. In a follow-

up interview three months later, he was considering putting his home on the market since it was now worth ten times what he bought it for 15 years ago. He purchased it for $12,500 and believed he could likely get over $120,000 for it in the current market. When asked about his reasons for selling, he responded, "The area has just changed. It's faster, dirtier, more industrial, and we're looking at maybe [Major] getting there soon. It's not the place me and my wife wanted to retire when we first moved here."

To address the housing shortage, new homes were being built and sold in Major. The commissioner elaborated:

> They've got a developer in the area of Major that has built a couple of houses and he'll be willing to build more based on selling those houses and a request for more. There's also a developer coming in who says he can build up to 45 houses and 16 apartments. And again it's coming up with planning for land area.

He was pleased, though, that the high home values and job market created a strong economy in the county.

*Costs*

While the oil boom caused some struggles for local communities, it allowed North Dakota the top economy in the country as of 2012. Most often in North Dakota, counties and communities impacted by oil had to compete against one another and apply for grants to the state, or raise the money they needed locally (Haggerty, 2012). Although the amount of money that local governments received directly was relatively low, there were many energy impact grants available to Major. Local regions receive 20% of the taxes, or $4.4 billion, and the state may make up to $2.8 billion available in development aid to the impacted areas (Macke & Gardner, 2012, p. 10).

Due to oil leasing and production, Dorian County's first quarter taxable sales in 2010 were up 86% from the year before. It received energy impact grants from the state government. Over the previous three years, the county had received over $500,000 in grants to improve infrastructure (such as roads and emergency services), purchase additional police vehicles and equipment, and update schools (Schramm, 2011; Energy Impact Grant Schedule, 2012). There were still costs to the county, however.

One significant cost to this area was maintaining roads. Dorian County needed to update its infrastructure as a result of the increased traffic, and some came at a cost to local residents. The County Commissioner discussed the costs:

> When we redid Broadway in [Major], the decision was made to go ahead and dig up all the sewer and water lines in Broadway. They wanted to update them and make new capacity because we knew we would be expanding and felt we would have more sewer and water available. So it cost us a lot more money to do it that way, but that was a decision made in order to meet the demands in the future. The total cost was about two and half million [dollars]. The cost to the town was about a million and a quarter. The rest of it came from grants from the state government. It raised our specials and taxes almost double on most people.

The county began updating the roads with four inches of pavement instead of the traditional two inches. It was more costly, but officials felt it would last longer. Other counties in the region were updating their roads with up to six inches of pavement (Tolliver & Dybing, 2010). Some of the roads Dorian County recently updated with two-inch pavement were already in need of repairs from the heavy oil traffic.

According to Tolliver and Dybing (2010), Dorian County had over 80 miles of paved roads and almost 700 miles of unpaved roads that needed updating due to oil traffic-related damages. They estimated that the county needs over $16 million for the paved roads and almost $12 million in unpaved road updates, which included new gravel,

drainage, and grating. Unfortunately, acquiring grants and funding from the state could be a difficult process for planners. The county commissioner likened obtaining funding to a wrestling match with the state to get the money he needed to fix the county's truck-damaged highways.

Some community funding must come from local taxes. The county auditor, however, was concerned about reassessing local taxes:

> Well, we try to get grants from the state, well, hopefully…or else we'll have to assess property owners in town to see if we're collecting what houses are worth…Repaving the roads is a must, but it can be a hard sell…I would hate to see, as an owner, and most community members see it the same way, I would hate it if they had to update infrastructure and charge it to us, to the community.

The potential problem, as a county commissioner described, is that "you reassess now, and the boom goes away, and now you're reassessed at a higher value." Other boomtown communities, such as Big City, passed sales taxes increases to fund infrastructure updates. Community members in Major were wary of paying for updates that were now needed due to the addition of the newcomers. They were already concerned about negative oil boom changes facing the other aspects of their lives.

*Regional Disruptions*

A 14-year resident described Major in the following way: "People drive slow, life moves slower here. You just trust people. Clean air, no noise from the traffic and sirens all the time in bigger towns." Residents appreciated the smallness of their community. The JDA Chair said, "A lot of us hate the hustle and bustle of a big city." However, the regional boom impacted residents' social lives outside of the community, as well as their opinions about the boom effects.

Most Major residents frequently traveled 45 miles to Big City when they needed clothing and supplies. As a rapidly changing peak boomtown, though, the "new," booming Big City had caused some distress to the participants in this study. A 74-year resident of Major would "try not to go there as much as I used to because all the people now. Just too much traffic. It moves so fast and seems dangerous for drivers… I'm not comfortable in the traffic." Residents in this study were not accustomed to the gridlock traffic that was now typical in regional booming communities.

As a response to the conditions of Big City, some residents in Major, like a 14-year resident, shopped locally more than they had before. This shift to buying local products made a positive impact on businesses in the area. The grocery store owner in Major said his business was seeing benefits because of the growth in Big City:

> The traffic in [Big City], people just don't wanna go there unless they have to now, so I think a lot less people go there now to pick up groceries. And I think we match their prices pretty well, especially when you're looking at gas cost to get there. But nobody seems to wanna drive around [Big City] anymore because all the cars on the road.

Although the pre-boom contributed to temporary disruptions and benefits to residents and the community, no one knew what the long-term outlook for Major would be.

### Theme IV: The uncertainty of the growth potential makes educational and community planning difficult and the boom-bust history in the area causes some to be cautious of forecasts, yet it provides hope for others

Planners and residents in both communities agreed that the future of their communities and schools were uncertain. Therefore, planning was difficult and required careful consideration and scrutiny. A boom occurred in the region thirty years prior to the present boom, which impacted how some felt about its potential. Since Major was in

the midst of more growth, city leaders were presently focused on responding to and planning for successful growth. Minor leaders had not been so proactive, yet its residents were hopeful that the growth would help renew the community and school.

### *Minor*

Minor residents were aware that oil booms often bust, as it did in the region 30 years prior. They knew of the economic benefits of the boom to the state and communities, but had still not yet invested significantly in their town's future. However, the growth offered residents hope that the communities and school district would remain sustainable into the future.

#### *Caution*

The mayor of Minor was cautious about investing in the growth. He believed that "most [oil workers] don't have plans to stay, anyway. They come, work, and go where the jobs take them." In addition to a cautious attitude toward investments, residents wondered how the community might change if Minor grew. During the boom in the region 30 years prior, Minor did not boom, but did experience some growth. The Minor Diner owner said residents "didn't like [oil workers] for the most part. They would just come around to drink, a little rougher group then…I think a lot of people were happy to see them go." Supporting this, the Minor police officer said:

> I can tell you after 20 years of law enforcement, people are coming to the state aren't used to this way of living come in and create havoc…There've been six murders [in Big City] this year. These are the types of people moving up here. And with that big influx of people, the oil's gonna go away and people will leave town, and the towns will be the same as before or worse.

Minor's greatest barrier to growth was its infrastructure. The town desperately needed updates if it was to continue growing. Many roads were not even paved, while a majority of the paved ones had uneven or damaged surfaces. The mayor said he was planning on investing in paving all of the roads if the growth continued. Additionally, the community had not even begun discussing rezoning their town for residential, commercial, or industrial expansion, which was necessary since there were virtually no available buildings for business development. The town needed infrastructure updates since its sewage system had not been updated since the 1940s and the roads were in poor shape. The mayor said, "We'll need a new [sewage system] if we get bigger by much."

The uncertainty of the oil boom-bust cycle made investing a gamble. If the city updated the infrastructure and the boom ended before the debts were paid, it would be devastating to the community. Several residents looked into building apartments and businesses. However, with the demand for construction across the region, including constant construction needs in Big City, residents felt that contractors were charging much more, and most were too consistently busy in the booming cities to come all the way to Minor to build. External factors, such as regional construction needs, may have hindered their ability to grow.

Even in the face of barriers, some Minor residents began some cautious expansion in 2012. The hardware store owner expanded his business to carry more products for the oil industry. The owner of an agricultural manufacturing facility was looking at hiring additional part-time employees due to demand from a strong agricultural economy, but had trouble hiring because of the high oil wages in the area. She believed the city leaders

supported her growth endeavors and allowed her easy access to build and expand her facilities when she requested it. The growth in the area offered opportunities for some Minor participants and hope for most.

*Hope*

The mayor mirrored the region's energy and excitement: "Well, we're on the edge of the boom. The outcome for the future is up for grabs. It's a great time to be in the state." Minor residents also expressed hope that they would have their grocery store open again. Few Minor participants could imagine their community changing beyond their grocery store reopening. However, nearly every resident believed the population boom was the only prospect left for the school.

The M-M School District superintendent acknowledged that the future of the school is being looked at differently now:

> Long-term, I think everybody understood that everybody'd be coming here. But, if the numbers in Big City start to increase, and the numbers in Minor start to increase, then it just takes pressure off everybody. We already got the staff in Minor, so…if I have twenty-six kids in a fifth grade classroom, I gotta split them. Well, now I have a facility problem. Is it cheaper to leave them up there? Bus them?

The Minor Elementary School would need significant updates if it stayed open. It was on the verge of needing a new boiler, which the superintendent estimated would cost about $300,000. A longtime substitute teacher in Minor realized with continued growth, the school would also need a full-time special education teacher as new students required those services. The school did not presently have a full-time special education teacher since they only had one student on an IEP, and shared a special education teacher with Major School.

The Minor police officer said, "Unless the oil boom comes and brings in huge amounts of people, Minor will close and Major will get bigger. We have facilities available, I guess, we just need the people." Some residents, such as the Minor Diner owner, were very optimistic about the boom, predicting:

> Minor [School] will stay. The growth will help the town, I bet. There should be more jobs from the oil boom. I'm optimistic. The town will either stay the same or grow, but it won't decline, I'm sure of that…I hope the boom will keep the school open. I guess it's possible that the high school could re-open. That would be great to see.

Others were not as certain.

The manufacturing facility owner said the future of the Minor Elementary School would be "that it stays open, *best* case scenario." Regardless of their beliefs, residents in Minor hoped for the best. A longtime substitute teacher believed that until recent growth forecasts, the school was near its end. The Kindergarten teacher posited:

> Well, we obviously need kids in the school. I think if the school got the kids, it would help the town. If we got some families to move into town and they brought kids, we could grow the school a bit, and that might have a ripple effect in the town. Grocery store opens back up, houses pop up, the town comes back to life. I'd like that.

The third and fourth grade teacher felt the growth "would be a miracle for the school," but the fifth and sixth grade teacher acknowledged, "It's just not a certain future." The unpredictable outcome of the district did not make planning easy, but added an element of optimism that the Minor Elementary School and community did not have in recent memory. As the longtime substitute teacher said, "We like getting new people in the school. Every year enrollment is up is another year we're still here." Although the pre-boom growth in Minor had caused some changes to residents' space, disruptions in the

community, and some concerns about required instructional changes for teachers, it provided hope for Minor participants facing a school closure and community decline.

### *Major*

The future of Major was also unclear. While external factors like the oil industry and regulations were beyond their control, the community faced other barriers to growth. At a Forward Thinking meeting, the community leaders were told that they ultimately made the decision of the amount and type of growth they wanted for their communities during the oil boom. If they chose to grow, they could achieve it by updating infrastructure and housing. Attitudes, local laws, and community needs affected whether towns are willing or able to grow, and do so successfully. A recent M-M School graduate said Major residents are:

> afraid of change. And oil means change. I think they're afraid of losing their power. They're definitely afraid of crime…They're afraid of something they don't even know if it's there or not. Therefore they're not welcoming the people with open arms. Hold them at arm's length.

He also felt more growth occurred in Major than Minor and attributed it to the more progressive attitudes of Major residents.

#### *Barriers*

Man camps, officially known as crew lodges, were temporary, oil company-owned living quarters that were usually built in fields in the area. Some man camp communities had thousands of people living in them, and they ranged from RV parks to dormitory-style buildings to rows of hundreds of adjacent trailers (Sulzberger, 2011). Although man camps were beneficial for providing housing for temporary oil workers, many residents in Major viewed them negatively. A 10-year resident in Major said

residents "always hear horror stories about what terrible people the oil workers are, rumors spread that they're criminals or drug dealers or drunks."

Man camps often had negative local reputation. However, an oilfield worker in Major stayed in a man camp temporarily during a recent job, and said it was "like sleeping in a closet" and was closely monitored by a security guard to ensure that alcohol was not brought into the camps. Of course, that did not mean that people could not cause some trouble in them. In 2012, a Michigan man was killed in a man camp less than 70 miles from Major, and it was one of two murders in the area that weekend (Ebersole, 2012). These types of incidents made Major planners cautious of man camps in Dorian County. According to the Dorian County auditor:

> There's just so many things that happen there, you hear all the time of, this guy got shot, or this guy got in a fight, or a fire or arrests there. It's just a lot of trouble to bring into a small town. We don't have the police for it, to keep it all in check.

As a response to the potential impact of man camps, Dorian county put a moratorium on them for 18 months. The JDA Chair further described the loose definition of a man camp and why the 18-month moratorium was necessary. There are "a lot of blurry areas. A farmer owns a trailer court out of town and you should see all the trailers. They're there and don't know how long they'll stay." They wanted to wait until the state's laws and regulations had caught up with the changing man camp definitions.

In addition to resident attitudes and the man camp moratorium, Major did not yet have the necessary infrastructure for retail growth. The Dorian County Commissioner explained, "Supposedly, that's coming. It's usually, if you build it, they will come, but in this case, if they come, you will build it." He had been in touch with two national big-

box retail companies who were interested in building a store in Major and had recently visited the town to plan potential locations. In addition, the county was in dire need of city and government workers. The competition of oil field wages forced the county to raise their wages for most government employees. The county commissioner added, "If a lot of the oil goes away, we still gotta pay it. So that's another thing that could become a problem." This was a valid concern, considering the history the area had with oil booms.

*Caution*

The same area of North Dakota experienced oil boom-bust cycles in the 1950s and again in the 1980s (Blumle, 2000). Major boomed and busted, which caused some residents in the community to be suspicious of the growth forecasts. Residents described the 1980s oil boom as similar to the present one, but it did not happen as quickly as this one. Similarly to this pre-boom, though, was the forecast that the oil boom could last over 20 years and would be sustainable (Halverson, 1982). The county auditor explained:

> Well, it was a bust. It was the early eighties, eighty-one, eighty-two, and there were a lot of people without jobs at that point. The trailer park, which went from having six rows of trailers, went down to having two trailers. Everybody moved out, and the aftermath was horrible. There were no jobs, no growth… After that, they were unemployed and people moved away and people who were employed by the oil who had invested their career in that lost everything. Well, people became a lot more cautious. They're still cautious of growth…Because we've seen it. People wonder if the investments are worth it. So we're saying, and a lot of people are, for these housing companies, these infrastructure companies, if you want something to be built, you come in and build it.

The Major JDA Chair also referenced the region's history with the oil bust:

> [Another local boomtown] had a mini-boom 30 years ago and lost a lot of money from bonding and infrastructure. Some communities resisted. We know it's real now, but a lot of towns resisted rezoning…We're pretty set in our ways here.

> Western counties have always, I guess you could say always had a sense of the way they do things. People start getting nervous when you start telling what to do with their individual properties, like zoning sometimes does.

She believed some investors in the area were not as willing to risk going out "on a whim with risky investments" as a result of the last bust.

The potential for more new people in the area concerned some Major residents. The county auditor stated, "Hopefully there doesn't come a day when I'm scared of going to the bar, I don't want it to be the day when I'm scared of walking." Major was much different for her now that she did not know who was living in the homes near hers. She saw more strangers and young people in the community. Not all community members felt the new residents were a negative addition to the town. Some participants, such as the 15-year resident, viewed the oil workers in the area as simply hard workers who were making a living and coming to North Dakota with hope to change their lives.

Staff members in Major School were also uncertain about the growth potential. The new students were creating a generally positive outlook for the district. The superintendent explained, "We're not like a lot of the small towns in the area, who have thirty kids in high school. We've got great numbers." However, they could not be sure about the amount the schools would grow.

The elementary principal said, "Right now we're not, we're just not sure. And, in 10 years, what do I see happening? I don't know. The big *if* right now is, if the oil moves this direction." This made planning difficult for the administration and school board. Some school staff members felt growth forecasts were exaggerated. The second grade teacher, Spanish teacher, and music teacher heard growth estimates, but did not

believe them. Although they saw the changes in their community and school, envisioning a larger Major was difficult for them.

*Preparations*

The leaders in Major and Major School were more comfortable with the preparations they have taken because they had the chance to see the regional growth and could prepare accordingly. The Dorian County Commissioner believed the boom in the region was an advantage for their planning:

> We're taking care of the business we need to take care of; we're prepared a little more than they were, even though you can never prepare enough, but at least we know what direction we want to head. When it hit them, it was like a thunderstorm hitting them. They didn't have a clue how they were gonna deal with it.

School officials agreed.

The elementary principal explained that the administration referenced the growth preparations and reactions of surrounding schools and how the boom impacted them. They contacted other local administrators to decide the steps they needed to take in the future. It was advantageous that they were able to see others' successes and struggles. As the Spanish teacher explained, "We can see what these other towns are doing and what they had to deal with, and we can start preparing for it without having to deal with it." The schools continued to look to the future in their planning.

The district would soon decide whether or not to close Minor Elementary School. They did not have a timeframe for closure but, until recently, closing was inevitable. As the district faced growth and space needs in Major, they had more options in the future, and some of those options potentially included keeping Minor Elementary School open.

Based on the interviews with the elementary principal and superintendent, closing the school was the likely option, followed by bussing students between the two schools if space needs continued to grow. The Major School English teacher said the district should "use it for what it needs, as long as it's feasible. Most of your population is in Major, so it doesn't make much sense to me to bus them 20 miles each way to Minor." The decision will ultimately depend on costs and student growth rate.

Major participants viewed the growth with sustainability in mind as they prepared for the future. A 74-year resident thought it would be best if Major:

> Grew a little but not nearly like some of those other towns are getting. That's just too much too fast, and it's not good for our way of life. We like it slow here, like it safe and a good place to raise kids and a family. We need good people.

The county commissioner and JDA Chair explained that they took time with all of their decisions to ensure that the county would be effective throughout the growth.

Some Major residents anticipated the growth would bring more retail businesses, which the community members desired. A 15-year resident added, "I wanna see more stores; that's what I wanna see. Everything else can be the way it is now, but if we see more stores, then that'll be fine." The residents had already recently seen more oil industry companies, restaurants, and bars appear in the town. The town's history with the boom, and the changes it was currently experiencing, made residents cautious of the growth potential. In Major School, few school staff participants discussed optimism that the potential pre-boom growth would benefit the school. They were focused on keeping up with the growth by hiring and building accordingly. Some felt disappointed that their community was changing and others were able to take advantage of the community

growth, but none seemed to have the sense of excitement and urgency that Minor Elementary School staff members expressed.

## Chapter IV Summary

Minor and Major both experienced similar impacts from the pre-boom growth, including changes to their space, teaching and learning, and community disruptions, all of which were shaped by and contributed to growth uncertainty. Teachers in both schools felt the new, often transient, students presented challenges to their instructional style and were academically behind their traditional students, yet the students remained largely welcoming of new classmates. Community support remained strong at both schools.

Minor had grown less than Major, yet residents were equally as concerned about risks that accompanied change. Real disruptions, such as increased crime, traffic, a soaring housing market, and community costs appeared in both communities throughout this growth. Although Major School and community members had done more to respond to and prepare for growth, they still approached investments with caution due to their experiences with the last oil bust. Minor teachers and residents were much more hopeful that the growth would revitalize their school and community, while Major teachers and residents were more pragmatic, focusing on taking steps and making decisions to ensure sustainable and positive growth.

# CHAPTER V

## INTERPRETATIONS AND RECOMMENDATIONS

This study researched the attitudes, perceptions, and reactions of participants in a rural oil pre-boom case. M-M School District is a consolidated district that includes schools from the communities of Minor and Major. Minor, a very small town, is home to Minor Elementary School. Prior to the oil pre-boom, Minor Elementary School was on the verge of closing due to low student enrollment. Major, a larger community with more businesses and growth space, was the location of the Major School, a K-12 school that had higher student numbers, but had little space for growth. Both schools and communities were included as a single case because so much of their future planning through the growth depended upon what happened in both towns, and they were bonded through the consolidation.

Participant observations were performed with most of the teachers, non-participant observations in the community, and extensive amounts of related document analysis to help build the contextual understanding of the communities' history, current conditions, and future potential. The central question of the research was: How do participants in a rural oil pre-boom area perceive and experience the changes to their communities and lives? Four categories surfaced during the data analysis and will be discussed in this chapter. These categories helped answer the research subquestions, which will also be examined.

The research was partially framed around the Social Disruption Hypothesis, which explains that the social elements of a community, such as attachment and satisfaction, may become strained when infrastructure reaches or passes its capacity in areas of high population migration (England & Albrecht, 1984). Although Major and Minor were in a pre-boom and not yet growing as substantially as they were projected to in the near future, community members still felt crowding in their schools, on the roads, in the housing market, and in their minds. Crowding and disruptions that the rural communities feel as a result of the growth may contribute to lower trust and acceptance of new community members (Brown, Geertsen, & Krannich, 1989). This was clearly evident in the towns of Major and Minor, because many residents were cautious about accepting newcomers whom they viewed as outsiders.

Through data analysis, four categories emerged in this study: Space, Teaching and Learning, Community Disruptions, and Uncertain Future. School staff members felt that space was a primary variable in their future success. Major School needed space and was attempting to build fast enough to accommodate the potential future growth, while Minor School's space was abundant, and may be necessary by the school district if growth continued into the future. As a result of the rural isolation and history of this case, regional growth, and the oil industry's potential for busting, the uncertain future created a barrier to growth-related investments, but also promoted hope for social and economic development and survival. Figure 4 signifies the four category relationships in this study. In this pre-boom case, changes to space, teaching and learning, and community disruptions were influenced by and contributed to an uncertain future.

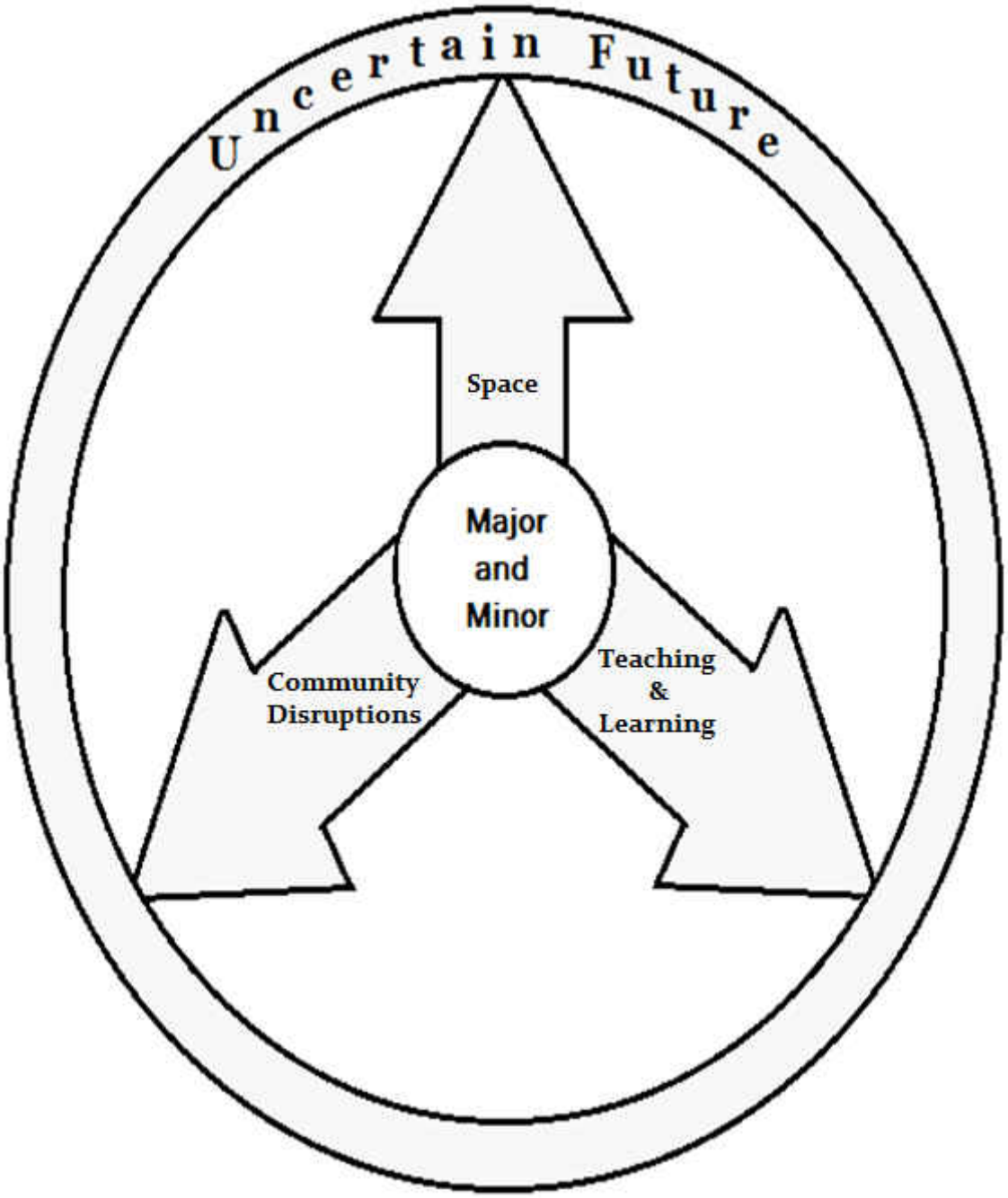



Figure 4. Category Relationships

## Case Synopsis

Major and Minor were typical rural farm towns prior to 2010. Residents described their communities as friendly and their lifestyle as slow. From 2010-2012, however, they began experiencing economic and cultural changes resulting from an oil pre-boom, and planners were forced to adapt quickly to these changes. Businesses in the towns saw their revenues increase annually 20% or more. Landowners with mineral rights and homeowners were pleased at their new property values. However, some residents of Major and Minor felt less secure in their communities and sensed their traditional lifestyle was changing. They could no longer walk across the road without looking for oncoming vehicles. Some did not even know their own neighbors anymore.

The school district had begun planning for and investing in growth to be successful. Many community members feared the growth might affect their traditional values of church attendance, a slow lifestyle, and social support, but were aware of the economic benefits of the oil boom in the state. Residents in both towns wanted growth, but wanted to develop the "right way." In Minor, the "right growth" meant that newcomers should adhere to Minor's values and be actively involved in the community. In Major, the "right growth" meant careful analysis, planning, and investment for a sustainable future.

The community and school contexts likely shaped their preparations and reactions to the oil pre-boom. Major previously experienced an oil boom and bust that was still fresh in some residents' memories. Both towns are also located in the region near several peak-boomtowns and were experiencing some of the pre-boom growth as a result of the

surrounding oil boom. Participants in this study had seen reports of the boom effects on the news and routinely visited other boomtowns in the region. The school administration had contacted other boomtown schools in the area to discuss their plans. Residents were aware of the struggles other communities faced as they grew, which certainly contributed to their perceptions of the changes they saw in their own towns. The assertion of the study will be discussed next.

Assertion: The pre-boom changes and future uncertainty caused residents to support, resist, or desert their communities. Schools faced challenges in teaching and accommodating new students and the towns experienced real and perceived community disruptions

The results of this study indicate generally similar findings across the community and school levels of the case. In both towns, space was a factor in how residents reacted to the pre-boom changes. Staff members in both schools found that the new students and potential future students impacted their funding and academics, including instruction and possible diversity needs. Major and Minor residents typically felt community disruptions, such as traffic, real crime, and perceived crime, and attributed them to the newcomers. Participants in both communities were also unsure of what the future would be for their towns, but they approached their planning differently.

Space played a role in both of these communities' present and future planning. In Minor Elementary School, the open space was now a sign of hope, while the crowded space in Major School was an immediate, pressing concern. Major and Minor had both run low on space in the community. Major was constructing homes and industrial space to meet their needs and Minor was not. Most community participants in this study were worried that the aesthetic changes they saw in their towns and the region were not

representative of their way of life. The temporary housing situations of new residents in both communities contributed to the main aesthetic concern of participants. Seeing crowded, haphazard temporary living conditions (such as RVs on lawns) was a tangible representation of the newcomers, which symbolized to them community change.

Generally, community members fit into three categories according to how they responded to the pre-boom: supporters, resisters, or deserters. In both communities, there were residents that were supportive of the growth, and residents who were opposed. Nobody, however, was neutral in his or her views of the oil pre-boom because it had such a dramatic impact on the region. Those who were supportive of growth, or the supporters, were often not born in the community, had some stake in the growth, and had a strong attachment to their towns. Their attachment was indicated by a positive attitude about the community, and they still spoke highly of their town. Additionally, they made no mention of wanting to move away. Since many supporters were not born in Major or Minor, they understood what it was like to move to a new town. Examples include the recent Major School graduate and the 15-year Major resident, who were not new to the community, and recognized that many oil workers were probably just hard workers who should be given a chance. Economic stakes seemed to be a commonality in determining who the supporters were. Residents such as the grocery store owner, mineral rights owner, and storage units owner acknowledged some potential problems with growth, but were enthusiastically supportive of the pre-boom because it was economically advantageous to them.

Certainly not everyone was a full supporter (as all participants described some concerns about the pre-boom growth), but the positive economic impacts allowed most supporters to overlook the negatives. Surprisingly, many residents in Minor who could have been supporters (because growth was needed for school and community survival) were actually unsupportive of new residents. In Major, residents generally reacted as either supporters or deserters, and in Minor, residents were generally resisters. The differences will be discussed later in this chapter. Figure 5 indicates that the pre-boom changes cause people to react as resisters, supporters, or deserters, and lists the characteristics indicative of each.

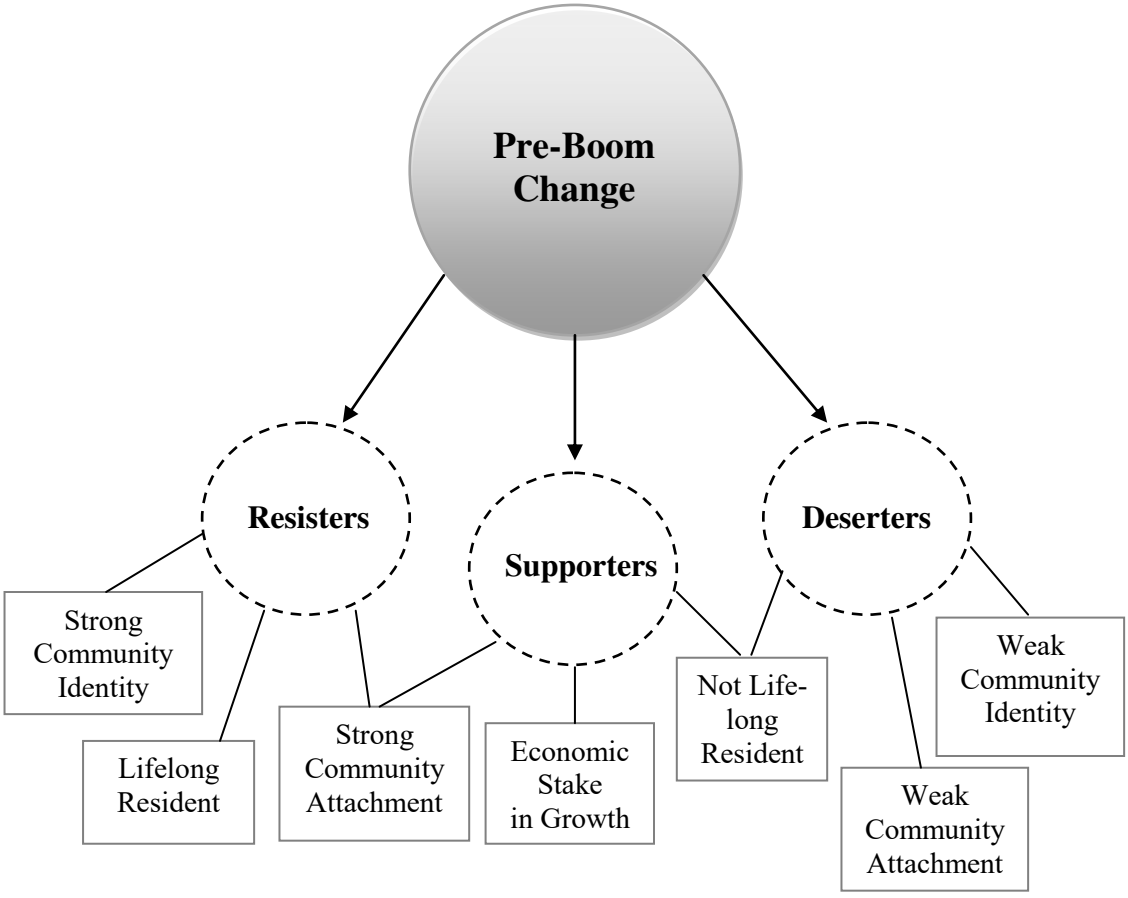



Figure 5. Pre-Boom Change Reactions and Characteristics

The results of this study also suggested that the schools and teachers were experiencing changes that were new to the rural district. Even in the pre-boom stage, teachers in the M-M School District had the funding to purchase any classroom supplies they needed, yet district funding may have been inadequate for building in response to increased enrollment. Many new students in both schools were transient and would come and go without notice. This might have contributed to their lower academic abilities, but made little difference in their classroom behavior. Teachers in both schools were unsure of how to effectively teach these students, partly due to the unpredictability of their educational experience in the schools and the lack of diversity training teachers received. Students in both schools were generally accepting of their new classmates, according to their teachers. Throughout the study, community support in the form of willingness to pay for building initiatives was strong. This suggested that the rural community members in Major and Minor wanted their schools to be successful and would do what it took to ensure they would be.

This study's findings generally support the Social Disruption Hypothesis (England & Albrecht, 1984) that areas of the community are disrupted, even during the pre-boom. Residents in Major and Minor were not satisfied with aspects of their communities that were changing, including strains on social services, increased traffic, and real and perceived risks of crime. Small effects of the boom, such as waiting for cars at a stop sign or locking their house doors, were examples of large changes to these small town residents. Whether participants were simply imagining risks or the risks were real

made no difference. Their sense of safety and security were compromised, and some residents reacted to it by opposing the growth or abandoning their loyalty to their town. Businesses and governments gained financially from the pre-boom, yet both communities still required massive infrastructure investments. Towns surrounding Major and Minor were booming, which may have further contributed to the disruptions residents felt and potentially shaped their attitudes about the oil pre-boom.

In an oil boom, the future is often unknown. This proved to be a problem for both of these communities and schools as they looked to prepare for future growth. They did not want to invest more than they needed, yet the planners realized they must invest enough to grow steadily. Major had been through an oil boom and bust about 30 years prior to this study, and some participants still remembered it and based their perceptions and attitudes of this boom on their prior experiences. Hope remained much stronger in Minor residents, who had more of a symbolic gain (their school) at stake in the future. Major, however, approached the unknown future with sustainability in mind.

Although many findings were similar in both Major and Minor, there were differences between the communities resulting from the community contexts, including their size, history, and current conditions. Therefore, a sub-assertion was developed for each community. The first sub-assertion pertains to the findings in Minor, and the second is specific to the findings in Major. Below, the sub-assertions and research questions are discussed and differences between the two communities will be examined.

Sub-Assertion I: Even with limited growth, Minor residents perceived impacts to their space, future impacts to teaching and learning, and community disruptions, which caused many residents (resisters) to deny acceptance to newcomers unwilling to fit their community identity constructs, yet all remained hopeful that the growth will help the community and school survive

The central research question that guided this case was: How do participants in a rural oil pre-boom area perceive and experience the changes to their communities and lives? To help answer the central research question, eight subquestions directed the study's data gathering and analyses. The first subquestion was: How do community members perceive the impact of an oil pre-boom in their town? The second was: How do school staff members perceive the impact of an oil pre-boom in their schools?

*Category I: Space*

It was obvious from the observations and interviews that space was a vital component of the participants' perceptions of the changes around them. The most impacted areas of space were described in Theme One: Increasing pre-boom population impacts the physical, aesthetic, and emotional space of residents, influencing their acceptance of newcomers. The findings suggest that in this oil pre-boom case, changes to space strengthened Minor participants' collective identity and attachment, which caused many Minor residents to tacitly resist growth by not accepting newcomers or planning for change.

From the vast, open fields to the lightly traversed roads, physical space seemed abundant in Minor. Residents valued the open space in their lives, and were often

frustrated when they had to leave their town to shop in other boomtowns under crowded conditions. Even during the early stages of this growth, changes to physical space had begun to expose some potential future problems. The participant who learned that another farmer owned his land's mineral rights seemed to cut social ties with him. Whether or not this was a temporary spat or a permanent feud is unknown, but it may indicate the types of weakened social ties that are often present during a peak-boom, and might be part of Minor's future if the town booms.

The Minor Elementary teachers interpreted the role of open physical space in their future. They once viewed it as a reminder of what they had lost in the consolidation (their middle and high school). Now, the open space was welcomed because it symbolized their final hope. Since they had the space the district would need if the boom continued, Minor participants finally had something to offer the district, which had previously planned on shutting their school down. This was powerful because it seemed that many residents and teachers resented the consolidation. The space had given them some power back.

Lakshmanan and Johansson (1985) thought that one of the most detrimental consequences of boomtowns is the aesthetic change that occurs, because residents' perceptions of their community itself begin to change. No Minor Elementary School teachers were concerned about aesthetic changes in their school, probably because their growth was minimal. However, community participants in this study disliked the new, "redneck" alterations to their town, such as campers and vehicles parked on lawns. They reacted to this by maintaining a strong sense of community identity. Many described the

idea that "this is not who we are." Some felt that the outsiders were sometimes a different type of person ("redneck") than Minor people. This was a way that some residents (resisters) resisted the growth. Aesthetic changes were an easy and obvious way for resisters to distance new residents from themselves. These resisters were most often lifelong residents.

Minor community members also did not want to see cars at the Minor bar. Although the traditional Minor residents also went to the bar, some labeled the newcomers as the "bar crowd" and the traditional Minor residents were not. This was clearly another way that resisters could separate newcomers from "Minor-like people," a term used by many Minor residents. The bar existed before the pre-boom, but was now perceived by many resisters to be the hub of newcomers, a crowd that they assumed to be a different type of person than they wanted in their town.

Community identity is a symbolic representation of similarities of members that includes a sense of place with a community, an attachment to a community, and a reciprocal relationship with others in a community, or "people care for, and are cared for, those with whom they feel they belong" (Pretty, 2003, p. 281). As Minor experienced growth and residents perceived threats to their way of life (such as increased traffic, drinking, and crime), their community identity remained strong. There was a sense of tribal unity among people in Minor. The presence of outsiders in this small town may have worked to reinforce Minor community members' social bonds and made them identify strongly with one another, at least symbolically. There was no indication that actual social bonds strengthened, and it is unclear what the social bonds were prior to the

pre-boom. However, during the growth, many Minor residents indicated that they were "Minor-like people." Community members seemed to be proud to be a part of their town and had a firm grasp of what it meant to be an exclusive member. This, again, seemed to be a social tactic used by resisters to reinforce that newcomers were different from them, and might not be accepted because of it. Some, though, like the third and fourth grade teacher, were simply unwilling to meet newcomers or even try to discover if they were truly different. On a larger scale, this may have been a method to avoid community change. The recent graduate and Minor resident acknowledged that Minor residents were "afraid of change." They may have been uncomfortable with having to redefine their changing community as it now faced growth.

Minor community members had a strong sense of insider status and viewed themselves as "us" and the outsiders as "them." Minor residents spent their life contributing to the community, raising their families, and working the land on the farms. Residents wanted newcomers to prove their loyalty to the town prior to giving them a chance for acceptance. Unless newcomers were willing to become actively involved and attached agents in the community, as the police officer said, "They'll get, basically, shunned." There did not seem to be a place in Minor's social sphere for passive residents. Although Minor participants felt this active membership in the community was the key to acceptance, there was no indication that any oil-based newcomers had become involved in the town. Thus, there was little evidence that active membership would lead to acceptance.

The fifth and sixth grade teacher was not born and raised in Minor and confirmed that it was challenging to get accepted into the town's social cliques. Some of the lifelong participants were not willing to accept new residents at all. Resisters explained that they would socially isolate new residents by not visiting them or inviting them to community events. In a town this small, social isolation may be a powerful force, since residents relied on their neighbors so often when their vehicles broke down or they needed to borrow supplies.

In addition to a strong community identity, most Minor participants appeared to have a strong community attachment. Place attachment is closely tied to emotions (Cross, 2003), and these findings suggested Minor community members had a strong attachment to their community. While they had concerns of the changes in their town, nearly every resident spoke of Minor with high regard. It was truly their town, and they were proud of it. Additionally, only one Minor participant discussed considering moving away from the community, and that was a teacher who was not originally from Minor, was near retirement, and was pleased his home value was now much higher than before.

Although Minor had not faced extensive growth, the residents had seen their space alter as the region around them boomed. England and Albrecht (1984) felt that the most disruptive time of a boom for community attachment is often the pre-boom. While Minor residents were dissatisfied with the changes in Big City and other areas, results of this study in Minor do not support the Social Disruption Hypothesis' assumption of weakened social ties and community attachment during the pre-boom stage. The extremely rural and isolated nature of the town, coupled with the context of a declining

school enrollment, may explain why nearly all of the community members retained a strong identity and attachment in the face of change, which may have caused them to resist change and impeded their acceptance of new residents.

### *Category II: Teaching and Learning*

The pre-boom growth in Minor Elementary School caused real and perceived issues in teaching and learning. This study's third research subquestion was: How have the changes affected education? The fourth was: What steps do school staff members take in response to an oil pre-boom in their school? The fifth was: What are the attitudes of school staff members regarding the oil pre-boom in their school? The most impacted areas of teaching and learning were described in Theme Two: Pre-boom growth brings a transient student population with lower academic levels, affects funding, and increases teacher workload, but peer acceptance of the new students and community support for the schools remain strong.

New students revitalized Minor Elementary School and provided a social benefit for the traditional Minor students. Teachers felt students were accepting of the newcomers because of the novelty of meeting new people. The exception to this appears to be students who were not considered status quo. The Minor students believed newcomers were "weird" if they did not behave or think in the way Minor considered to be the cultural norm (such as hunting). It should be noted that all of the new students, like all of the traditional students in Minor, were Caucasian. These were isolated, generally racially homogeneous communities. If something as insignificant as hunting

beliefs puzzled these students, larger cultural differences may have a greater impact on their potential to accept incoming students in the future.

Minor Elementary School teachers were most concerned that their coveted individualized instruction was at stake if the school continued to grow. They felt some of the greatest benefits of working in Minor Elementary School were small class sizes and personal relationships with students, which were both at risk if the school grew. It was unclear if they understood teaching practices of larger class sizes, but they had a sense that they would need to lecture more if they had larger classes. Paradoxically, Minor teachers recognized they needed the growth to keep the school open. The Minor Elementary School teachers realized they would either lose their jobs or need to adapt their instructional practices in the future, and they wanted neither.

Teachers in Minor Elementary School also did not feel prepared to accommodate student diversities such as language or academic differences. They had not encountered much diversity prior to this pre-boom growth and were challenged to educate students who had needs they had not previously been exposed to, although they tried their best to do so. The teachers engaged in more collaboration to develop ideas for helping the lower-achieving student at their school, but felt unsuccessful. They believed that the student had needs beyond their scope of professional training. To complicate matters, the student left before they made any academic progress with her. Teachers did not blame the school district that could have provided them support, but were more concerned with the nature of the student's transience, which could not be helped by the school district.

These teachers needed more time, training, and support if they were to be successful with transient students.

Community support may be necessary for a successful transition through the boom cycle (Ross & Green, 1979). Minor community members seemed very supportive of their school, and teachers perceived this. Minor Elementary School had an active PTO that was "absolutely supportive" of the school, as was every community member in this study. Major School teachers discussed community support of specific activities (sports, FCCLA, etc.), while Minor Elementary Teachers discussed it more holistically (generally supportive). All residents in this study indicated that they would support any growth efforts, regardless of a direct stake in the school, and would be willing to pay more in taxes if the school required it. It seemed like Minor residents took it as their responsibility or privilege to support Minor Elementary School, likely because most were Minor School alumni. The loss of a rural school can mean the loss of community identity, so the stake of the school's success may have been enough to keep residents' support strong. Most participants understood the codependence of the rural community and school, and realized the devastating consequences of school failure.

### *Category III: Community Disruptions*

Residents in this study felt disruptions in their community during the pre-boom stage. Perceived disruptions seemed to impact community members' attitudes and behaviors as much as the disruptions that they actually experienced. This study's sixth research subquestion was: What are the attitudes of community members regarding the oil pre-boom in their town? The community disruptions were contained in Theme Three:

Rural pre-boom communities experience many levels of real or perceived social change, which disrupt their rural lives.

The Social Disruption Hypothesis maintains that community disruptions, including lower community satisfaction and higher rates of crime and traffic, occur in areas experiencing an oil peak-boom (England & Albrecht, 1984). All of these disruptions occurred even during the pre-boom stage in this study. Although Minor had not yet grown significantly, and real disruptions were not as evident as in peak-boomtowns in the region, Minor residents still felt at risk. Their experiences in the area, as well as the region's previous oil boom and bust, influenced their perceptions about the current boom.

Minor residents believed risks, particularly risks of crime, existed in other communities as a result of the oil boom, and did not want these to permeate their town. Again, these issues were present prior to the boom, but some residents attributed them to the newcomers. Most Minor residents assessed these risks based on their personal experiences in the region, informants from other areas, or things they heard through media sources. In fact, some heard about oil boom-related risks through Facebook. Stories about criminal activity travelled quickly through this small town, whether or not they were substantiated. This seems common in rural communities, and may also have been a method that resisters used to continue to oppose community change. Rumors and gossip can be a powerful force in a small town, particularly if they involve crime or insidious behaviors.

Minor residents particularly disliked the new traffic. Although the traffic on the town roads was still very light, it was a substantial physical representation of change to them. With every new car on the road, it seemed to make them feel one step closer to becoming a boomtown like Big City, which all participants resented. Additionally, many Minor community members believed that the newcomers were unsafe drivers and more likely to cause accidents, which, again, distanced the residents ("us") from the newcomers ("them"). Clearly, vehicle accidents occurred prior to the oil boom in North Dakota, but resisters now assumed winter driving accidents were caused by newcomers who had no experience driving in the snow. In a survey of residents in the North Dakota oil producing counties, Kubas and Vachal (2012) found that four out of five residents felt unsafe driving with the new traffic. Vehicle accidents and fatalities spiked in the oil producing counties, including Dorian County. In fact, Dorian County was in the top seven oil producing counties for rural roads crash rates in 2011, as was Big City's county (Rural Transportation Safety and Security Center, 2011), and Minor residents lived much of their lives in these two areas.

The supply of housing in Minor could not keep up with demand. Minor had no available homes and could not grow until they built more housing. While there were barriers to construction in the region (such as high costs of building and regional unavailability of construction companies), there appeared to be little, if any, attempt at growth planning, unlike what was happening in the community of Major. Resisters in Minor may have avoided residential and industrial expansion because it would cause

change in the community. Some residents had discussed constructing for growth, but almost no attempt at expansion had occurred in Minor at the time of this study.

Though Minor's growth was stalled because of the housing shortage, the residents still felt community disruptions. Many were concerned about future risks of change to their town. According to the Social Disruption Hypothesis (England & Albrecht, 1984), changes to quality of life are expected during a pre-boom. These disruptions need not be real, but can be fears and anxieties resulting from social change (Smith, Krannich, & Hunter, 2009). Minor residents felt community disruptions, since nearly all community member participants were concerned about new crime and traffic. Rumors of crime and traffic increases represented to them a potential indication of greater social change, which resisters opposed.

*Category IV: Uncertain Future*

The seventh research subquestion of this study was: What reactions do community members take in response to an oil pre-boom in their town? The final subquestion was: What role does context play in the participant responses? Participants' beliefs in this case were shaped by the changes they saw around them, their history, and their community context. Theme Four addressed this category: The uncertainty of the growth potential makes educational and community planning difficult, and the boom-bust history in the area causes some to be cautious of forecasts, yet it provides hope for others.

Minor was confronted with external barriers to growth, such as its isolated location and funding needs. Leaders tended to be reactive to the changes and created self-imposed growth barriers. Officials were waiting to repave the roads until more

people arrived, and had not yet developed a growth plan, even though their infrastructure evaluation indicated they needed to update their road and sewage system if the town grew. They would not grow without investing, but would not invest without growth. Even the leaders seemed to be, at some levels, resisters. There was really no reason that Minor was not continuing to grow except that the community had not wanted it to do so. If they had created a comprehensive growth plan, as Major had, they could have rezoned their town, built to accommodate new residents, and grown. Certainly there were people in Western North Dakota who needed homes. With so much resistance to community change, though, little growth had occurred. Most Minor residents did not want newcomers.

While Minor was not building housing and infrastructure, and most community members seemed cautious of new residents, the growth forecasts inspired hope in all of the Minor participants. Minor residents saw the oil pre-boom as a last chance for survival, and some, like the Minor Diner owner, were convinced that the pre-boom would keep the school open, and possibly even allow the middle school or high school to open again. Besides community investments, there was nothing that Minor community participants could do to promote their school's growth. Since external growth conditions were ripe for the first time in decades, hope flourished. When very small, rural schools close, it essentially shuts down the community's economy and destroys the community identity. Minor had much to gain from the growth and a great deal for which to be hopeful. Unfortunately, community resisters were not generally welcoming of newcomers or change, and the hope, therefore, may have been unfounded.

Sub-Assertion II: Major participants experiencing an oil pre-boom faced three areas of change, including immediate impacts to space, teaching and learning, and real or perceived disruptions, which caused some residents to become less attached to their community (deserters), all while planners struggled to keep up with the changes and prepare for an uncertain future

Major grew substantially more than Minor over the previous three years, which caused residents to perceive changes differently. The growth created physical space needs in the school and community. Major residents also observed aesthetic changes in their town and the region. The findings of this case study suggest that changes to space may have weakened some Major participants' attachment to their community (deserters). These weakened attachments influenced deserters' willingness to move out of the town, and also their acceptance of incoming residents.

*Category I: Space*

As housing space ran low in Major, more oil workers were living in campers and trailers. The residents, like the Minor participants, believed the pre-boom was a threat to the aesthetic appeal of their town, and used words like "trashy" to describe the changes they saw. Major community members did not want their communities represented this way. Like Minor participants, many residents in Major attributed these aesthetic changes to the lifestyles of the newcomers.

Unlike Minor residents, who maintained a strong community identity through the growth, Major residents did not discuss a collective community identity. No Major participants labeled themselves as "Major-like" people. This was a larger town and most participants were not born in Major, which could partially explain why they did not seem

to have as strong a sense of community identity. There were, though, more supporters of the pre-boom in Major. Many more Major residents were not originally from the community, and were more accepting of newcomers since they had once been newcomers themselves. More people in Major had an economic stake in the growth, so the additional participants such as business owners may have been the reason for higher support in that community.

Major School participants were concerned about future crowding since they were already struggling to provide learning space for their teachers and students. While Major had not yet reached a peak-boomtown stage, the school was constructing permanent classrooms to meet space needs. The teachers were crowded and many were unsatisfied with the lack of space to work, yet they stayed positive. They saw that the school was accommodating their needs with the construction and were willing to wait patiently for its completion.

Some Major participants, such as a 14-year resident, indicated they were becoming increasingly dissatisfied with their town as a result of the perceived negative aesthetic risks. Those who were less content with the community changes and had weak attachment to the town tended to become deserters. They felt the region was becoming a more industrial area and not as pleasant as it once was. Three Major participants moved during the course of the study and several more discussed looking for other places to live.

Some deserters used the high housing prices as fuel to detach from their community. Since their homes were valued higher, or they had to pay more in rent, and they were not pleased with the changes in their town, some were more willing to sell their

houses and move away. Most residents chose life in a small town for very specific reasons: slow lifestyle and safety. The Dorian County auditor stated that, because of the growth, "it's definitely not the Major of ten years ago." Deserters perceived the transformations as fundamentally modifying Major and did not feel a strong enough attachment or community identity to overcome the changes. Thus, they were willing to leave.

Of the 17 Major participants, only five were born there. Those who were born in the town, such as the 74-year resident, tended to view outsiders less favorably, and become less accepting of newcomers. Lifelong Major residents were born and raised into the town's social circles, and may not have understood what it is like to be a new person in a community. Those who had moved to Major later in life, such as a 15-year Major resident and the convenience store owner, recognized the difficulty of being accepted. They understood that new residents faced social challenges and acknowledged that community acceptance in Major could be difficult. Unfortunately, as the oil worker participant described, many were not given a chance by anyone. Unlike Minor's resisters, Major's leaders (who were supporters) allowed the town to adapt to changes and grow into the future. However, newcomers still did not seem to be accepted well in Major, an unsurprising finding in an isolated rural community.

### *Category II: Teaching and Learning*

Major School faced new challenges when anticipating and responding to increased student enrollment. North Dakota peak-boom communities struggled with physical space needs, student demographic changes, and paradigm shifts in how the

schools operate (Beckman, 2012). The M-M School District administration took steps to ensure that teachers would be attracted to Major School, regardless of what the future held for the town. The administration felt it was better to be safe than sorry in their school planning, and were much more confident in their decisions since they could reference other schools with similar growth patterns.

The available funding from the higher tax base from a thriving agricultural market and the oil industry made a positive impact on Major School. All of the teachers in this pre-boom case were pleased about the budget available to them for classroom supplies. The district had also received impact money from the state to purchase busses, build the new classroom space, and renovate (Schramm, 2011). It was not enough capital, though, since the school had to stall the construction process on their new classroom addition. At the state level, other peak-boomtown schools needed immediate funding to help them accommodate their new students. Haggerty (2012) estimated financial needs of North Dakota boomtown schools: at least $100 million for school buildings, $30 million for staffing, $8.5 million for busses and transportation costs, $12 million for special education, $25 million for student and classroom equipment, and $6 million for teacher housing (pp. 2-4). This will complicate funding allocations in the future. The potential growth of Major School and community will determine their future funding needs.

Major School staff members, like Minor teachers, were concerned with student transience. Like in Minor Elementary School, new students tended to be academically lower than Major students, and the school staff disagreed upon the reasons for this. Some teachers and the M-M Elementary Principal believed the high academic standards in the

district or state caused most new students to come in academically behind their peers. For years, North Dakota had prided itself in high academic expectations. Other teachers and the superintendent attributed new students' lower academic levels to the transience itself. New students' lower academic levels were most likely a combination of both of these factors, among others. It is not difficult to imagine that moving multiple times, living in temporary housing conditions, having parents who work long hours, and not having adequate school records could create academic difficulties.

Just as Major School teachers would get to know students, some of them would move away without notice. Teachers felt that this was not good for the continuity of their learning. Teachers in this study, though, did not feel that the transient students disrupted their teaching styles. They seemed to take it in stride that students would come and go, and were more concerned about not having enough time to help the students than they were about their instruction being affected. It appeared to frustrate some that there was nothing they could do to help students who did not stay long in the school. Unlike in Minor Elementary School, Major School teachers already felt an increased workload because they had grown more. They did not complain about becoming busier, but simply found more efficient ways to use their time at home and in school. The participants indicated that several new students were on Individualized Education Plans (IEPs), which added to the workload of the Special Education teacher. The IEPs were largely for specific learning disabilities, which teachers were accustomed to seeing, and did not seem to be a concern for classroom teachers yet. With more growth and higher student numbers, though, this could quickly become an issue.

Teachers in rural boomtowns may struggle when they are faced with a more diverse and unpredictable classroom than they are accustomed to teaching because "rural North Dakota schools are predominantly white, English-speaking children from modest but adequate homes" (Beckman, 2012, p. 18). Like Minor Elementary School, most Major School teachers were unsure how or if student diversity would play a role in teaching and learning. Some acknowledged that it did, but none were able to give examples of how it would impact their own classrooms. These teachers seemed caring, professional, and effective, but most were utterly unaware of student diversities. They simply had no experience with it. The administration and some teachers acknowledged that diversity training had not been offered, but likely would need to be in the future. This could represent a paradigm shift for the M-M School District, which had little diversity prior to the growth.

Most teachers and administrators agreed that new students' behavior issues were not as much a problem as their academic performance. The exceptions to this were participants like the music teacher whose classes were getting larger and classroom management was becoming generally more difficult. They did not attribute this to the new students individually, but to the general growth. While one teacher mentioned potential drug and alcohol problems among the new students, no other participants discussed this, and there is little reason to think that it was an issue in this case.

Major School teachers felt their students were accepting of new classmates. The context of this case may explain why this is so. Once students reached seventh grade in Minor Elementary School, they were transported to Major School to complete their

middle school and high school education. According to two Major School teachers, Major students were accustomed to meeting new students from Minor Elementary School when they came to the school in seventh grade. Unlike the Minor Elementary School, however, students in Major School did not seem to feel like new students were as much of a novelty because Major was not as isolated and the school was larger.

In this pre-boom case, the high school students were not dropping out of school in large numbers to work in the oil fields like they had in past energy booms (Ross & Green, 1979), but many were drawn to the high-paying oil industry jobs after graduation. The teachers in Major School were not alarmed by the changing attitudes of students who planned on working in the oilfields. Major teachers felt comfortable with this due to the similarity of the oil-related jobs with the laborious agricultural jobs many students worked after graduation. In fact, the school district seemed to embrace the oilfield jobs by updating their technical education shop to provide more opportunities for those who were interested in hands-on careers like oil work and agriculture.

Major School teachers believed the community members were not always supportive of the teachers or programs. Residents in Major, though, supported the school itself. Like the Minor findings, all Major residents, regardless of their community status or length of residence, said they would be willing to pay more in taxes if the school required additional funding for future oil-related growth. While community members usually support development initiatives if they feel they have a direct stake in the growth (Blakely, 1994), these rural residents may have believed the success of their schools and communities were enough of a stake for them.

*Category III: Community Disruptions*

Dorian County struggled with hiring emergency workers, particularly since many of the jobs were volunteer positions. Fire, ambulance, and other emergency needs were increasing nonetheless. Medical services in North Dakota oil counties faced growing pains, including: "difficulty keeping up with response demand, staffing shortages, unprecedented traffic conditions, [and] escalating financial issues" (Safetech Solutions, 2012, pp. 3-4). These same disruptions were felt in Major on a smaller scale, even during the pre-boom stage.

Crime increased in Major as the town grew. The police department got more reports of DUIs and domestic calls and Dorian County needed to hire additional police officers as a response to increased demand. While few of the Major participants experienced any criminal activity firsthand, nearly all of them often discussed crime. With the regional increase in crime, North Dakota residents "tend to associate these circumstances with the oil workers, creating suspicion and negative feelings toward these new migrant workers" (Beckman, 2012, pp. 45-46). Rumors and reports of criminal activity made an impact on Major residents' perceptions of real crime. This influenced their view of the growth, much as it did to the Minor resisters. Now, they felt like they needed to lock their cars and houses, which was no small change to Major residents. That was something that needed done in big, dangerous cities, not in small, safe communities.

Similar to Minor, traffic was the most commonly discussed community disruption in this case because every Major community member had personal experience with the

new vehicles on the roads. To them, the traffic was more than an inconvenience. It was disrupting their way of life because it affected every facet of their lives, whether they were driving in their own town, driving on the highway to Big City to shop, or driving through local communities to visit relatives. They were now using more of their time on the roads and in traffic. Even waiting at a stop sign for two or three cars seemed to symbolize a change they were unhappy to see in Major. While they valued a slow lifestyle, they felt very negatively about the time they spent waiting for vehicles to pass, or the anxiety they felt driving on the highways around massive oil trucks.

Major had more costs associated with the pre-boom than Minor. In a report for North Dakota oil-producing counties, Macke (2012) described the crowding out effect that may take place during and after a boom. High-paying jobs attract workers from outside the local region, and also attract workers from out of the local employment pool (Little & Lovejoy, 1979). Business owners, as well as government officials, felt that the pre-boom brought financial gains, yet they had to compete for workers and raise their wages to hire good employees. Major business owners took the good with the bad and were not as concerned about employment difficulties yet. The boom growth had caused increased revenue for most business owners, and this seemed to act as a buffer against generally negative opinions of the boom.

Major officials were planning for growth by participating in community planning meetings, rezoning the town, and investing in infrastructure. Leaders in Major, unlike those in Minor, were not resisters. Given the massive economic and population estimates for this region, Major officials were more confident in their investment plans. The

town's past boom and bust may have contributed to their planning. Community leaders wanted to ensure every step they took in planning was the best possible option to avoid another difficult bust if the boom slowed. Even though most reports indicated that the oil boom would not bust in the near future in North Dakota, most Major residents did not trust this since they heard the same thing about the past boom.

Petersen-Klein and Borjon (2011) found that rural communities build their roads for light traffic, and oil boom-related traffic can damage the surface. From 2010-2013, oil-producing counties in North Dakota needed "$356 million, $233 million of which consisted of the additional road infrastructure needs as a result of recent oil development. The estimated needs for the rest of state were $298 million" (Upper Great Plains Transportation Institute, 2012, p. i). County-level funding for highways affected both communities, since both have highways heavily traversed by oil trucks. Leaders in Major were willing to spend the money they needed to grow successfully because they tended to be supporters. The Major JDA Chair and county commissioner wanted growth, and looked to the future in their planning.

Western North Dakota is a region of commuters. These rural residents lived their lives around the region, not simply in their own community. Pre-boom attitudes of residents in both communities were shaped not only by the growth in their towns, but also the towns around them. They frequently visited family and friends in the region and shopped in Big City. All of these communities were impacted by the growth, and the traffic and crime they experienced in other boomtowns likely contributed to their concerns about their own town's future. The context of this case's location, being

squarely in a peak-boomtown region and forcing residents to interact in other boomtown communities, may partially explain why many findings about other boomtowns match findings from these residents, even though their communities have not yet reached the peak-boom stage.

### *Category IV: Uncertain Future*

The changes to space, teaching and learning, and community disruptions in Major contributed to and were influenced by an uncertain future. Leaders in Major School and the community were proactive in their growth, even though they all understood the unpredictability of an oil boom. Although they could not be sure of their own growth potential, they had immediate space needs and built permanent solutions (school addition) instead of temporary solutions (portables). They were less cautious of the growth itself, but more vigilant to not invest too much, too quickly.

Major participants had different views of the boom than Minor participants because they had been through an oil boom before. The past surely shaped their present perceptions. Residents in Major who remembered the last oil boom recalled it with disdain. Macke (2012) said that North Dakota "communities need look no farther than the last energy boom to see the implications of a failure to maintain diversity in the economy in the face of a boom" (p. 6). Major's history with a devastating bust contributed to some participants' negative view of the current boom. However, they did not seem to resist change, but referenced the past when discussing their future.

Only two participants mentioned ecological concerns of the oil boom, and they were mentioned in passing. While participants likely cared about environmental issues,

particularly since this was an agricultural area, most Major residents were more interested in discussing immediate community issues such as investments, infrastructure, and population growth. The oil boom's economic benefits might outweigh some of the negative issues such as environmental hazards to these participants. These communities may have not experienced enough growth to yet see environmental impacts of oil drilling in their direct area.

Living in a rapidly changing community makes some future uncertainty unavoidable. Unlike Minor residents, Major School and community participants viewed their future not with hope, but with sustainability in mind. Since Major School was under no immediate threat of closure and the community was fairly stable, the administration wanted the growth to allow their school and programs to remain viable. The pre-boom growth helped the M-M School District in a state with many rural declining districts. If Major community participants expressed any indication of hope, it was an anticipation that retail stores would begin to appear so they would not need to travel to Big City as much to buy supplies. Major residents simply did not feel the sense of deep, urgent hope that Minor residents had.

Major residents focused on being pragmatic and keeping up with the changes. After all, they were in the midst of a significant community transition and had, for the previous four years, lived within the booming region. They developed a comprehensive community plan that helped them zone their town and estimated the type of growth they could expect. They were also working on county plans to meet future goals and grow successfully. They truly were planning for success and were not as deeply resisting

change as Minor residents were. The moratorium the community placed on man camps and the steady housing construction also allowed them to scrutinize their choices and avoid poor, rushed decisions they made in the last oil boom.

Major residents were experiencing changes to their space, their school, and their town. Like Minor residents felt, the more change they saw around them, the less clear their future seemed. Although residents knew they needed to plan ahead, they simply could not be certain of what exactly they were planning for. Most Minor residents resisted growth by perceiving newcomer differences and avoiding planning for community expansion necessary to continue to grow. Some Major participants detached from their community, viewing it more negatively because of the changes in the town, but other Major participants were supporters who generally wanted growth, and wanted to grow well. The future of both communities is unclear, but the planning they made during this pre-boom stage may determine their success as they likely move into a peak-boom stage soon.

## Implications for Practice

Communities in the region of the Bakken Shale Formation are growing, and effective community planning and development are vital as these towns continue to receive benefits and face challenges from the growth. Other states in the country are also facing energy booms. During the pre-boom stage, community members may begin to experience some disruptions and changes to their traditional ways as new people arrive to work in the energy industry. Communities and schools are forced to make decisions about investing and growth. How will the community and school be impacted? What

type of planning is necessary? How can they plan to grow cautiously and sustainably during the pre-boom stage of growth?

### *Communities Should Have Explicit Plans for Growth*

These findings suggest that space, teaching and learning, and social areas are disrupted during an oil pre-boom. Major, with the help of an engineering and consultant group, was proactive in rezoning the community for continued residential and industrial growth. Through cautious investments, planners approached growth carefully. One of their most important planning tools was the comprehensive plan they developed for expansion. Comprehensive plans are a vital component of city planning that guide decision-making processes toward established goals (Kelly, 2012). All communities should have explicit plans for growth. Major did, which aided in their planning. Minor did not, and city leaders there seemed to lack specific implementation strategies for Minor's future. Representatives from the school should be present at local governmental planning meetings to discuss needs, plan for funding, and organize growth initiatives. This would allow for common goal development and implementation at the community and school levels, since tax revenues impact both schools and communities.

The results of this study indicate that community attachment can be affected by changes. Community planners should ensure that their planning, zoning, and construction during growth does not disrupt the physical characteristics of the area to which community members are attached. These could include natural landscapes, historical sites, parks, or recreational amenities. It is critical that residents be involved in city planning and goal implementation, particularly in rural communities, but like all

communities, members will have different levels of time, desire, and availability in planning and execution.

### *Communicate with Community Members about Changes*

Oil companies must respect cultural contexts and be willing to communicate with the local residents, who want to see that companies are not taking advantage of them, but care about the towns around which they work. It was clear in this study that many local residents had preconceived notions about oil workers and the oil industry, stemming from the prior oil bust, rumors, and their experiences. Additionally, it did not seem like oil companies had taken the time to build trust with the communities. Social media sites, such as Facebook, Twitter, YouTube and LinkedIn, can be an effective way for local governments and companies to keep many residents instantly informed. Participants in this study were using these forms of social media, so companies and local governments can use them to post schedules of meetings, open discussions, answer questions, describe development initiatives, explain mission statements, and list employment opportunities.

### *Community Leaders Should Plan for Traditional and New Resident Socialization*

Community disruptions were apparent in these pre-boom communities. They are often unavoidable during times of growth. As a response to potential threats to their community, some traditional residents in this study did not want to accept newcomers. The oil worker in this case did not feel accepted by the community, and felt he would be if he were ever given a chance. Perhaps community leaders can find ways to forge relationships between the old-timers and the newcomers, such as keeping social bonding in mind as they update their towns. While investing in infrastructure is foremost and

necessary, consider also funding venues for socialization and hold community meetings that invite everyone to communicate, interact, and share in the community's decision-making processes. Keep in mind that many oil workers may work long or nontraditional hours, and schedule meetings during a variety of days and times. Developing community attachment and identity requires interaction opportunities.

*School Planners Must Examine Forecasts for School Development*

During pre-booms, schools are faced with difficult decisions. One such decision is building permanent classroom space or attaching portable classrooms. Most often, time is of the essence and portable classrooms are an immediate, temporary fix. While some are well built, they generally have their own challenges. They are often disjointed from the school, walking areas may be poorly lit or constructed, and some require high maintenance (Lyons, 2001). Air quality and heating or cooling efficiency may also be a problem. If the funding is available and administrators have cautiously examined growth forecasts, they must decide if it is better to invest the time and money in constructing lasting classroom space. Context is vital in making these decisions, and there is no easy answer, but adequate funding must be available from local and state governments for schools being impacted by energy booms. Oil companies would likely be more readily accepted by rural communities if they also provided support to the impacted schools. They almost always need school volunteers and donations.

*Teachers Need Professional Development for Instructional Changes*

Teachers in boomtowns should expect student transiency. Teaching students appropriate introductions was beneficial in the elementary ages. Students were

encouraged to discuss their hometowns, hobbies, and interests. In this way, teachers can help forge social connections. Teachers also used student collaboration, which allowed students of all ages to converse with newcomers and get to know them. This is necessary for teachers in a boomtown. We cannot simply expect students to get to know one another outside of class, but we can use our classroom time to help open social doors between the new and traditional students.

The lower academic levels of transient students were difficult for teachers to work with in this study. Using good teaching practices, such as individualized instruction and collaboration, may be necessary for new, transient students' socialization and learning in boomtowns. However, it is probably not enough. Teachers need support in understanding transient students' needs if they are expected to teach them effectively. Professional development in instructional strategies is essential, but administration must also have access to student records immediately if they expect their teachers to be effective in addressing student needs.

### *Academic Records Need Digitized*

Some teachers in this case felt underprepared to educate the new students, especially if academic records were missing or incomplete. In the 21st century, all pertinent student records should be digitized for immediacy of access. It is understandable that there are privacy concerns, but as medical records are increasingly becoming digitized with privacy-protecting encryption methods, it is not unfathomable that school records could do the same. It is, quite honestly, surprising that this is not already being done nationwide in the school systems. Parents are a vital source of

information, and should also be a part of the transition process to a new school. Until all records are digitized, schools should implement a meet-and-greet for new students and parents to gain an understanding of their goals and backgrounds. Parents working in the energy sector may work nontraditional hours, so teachers and schools should plan accordingly. This becomes complicated because of the school schedule, so districts might consider alternative scheduling when planning to meet with parents.

### *Practicing and Preservice Teachers Need Diversity-Based Professional Development*

Universities and schools must provide professional development for teachers in the areas of instructional flexibility, student transience, and diversity. Preservice teachers should learn to make content meaningful for all students and provide culturally responsive teaching during their university education. Rural teachers may not understand that diversities factor into teaching and learning. Hence, universities must first be explicit of the types of student diversities (including ethnicity, culture, language, religion, socio-economic status, and so on). They should provide direct experience in diverse schools in both rural and urban areas. If undergraduates can see how teachers in the field are addressing diverse student needs, they can bring these experiences back to their college classrooms and continue to inform other students and their instructors of the rapid changes they see in the school systems, particularly in the booming areas.

### *Rural Teachers Should Be Given Opportunities to Collaborate*

Partnerships can allow practicing teachers to share ideas, insight, and experiences with those outside their direct communities. Teachers in isolated school districts may only get the opportunity to collaborate with others during professional development

training days. If teachers are struggling with student transience or development, opportunities for collaboration may give them insight into others' successes. With the infeasibility of travel for some school districts, districts should provide teacher partnerships in the form of video and online meetings. There are many free programs and services that can make this possible, so the only costs to districts may be meeting times. If teachers can meet other professionals and discuss their struggles and successes, they increase their chances of success with their own students.

## Recommendations for Future Study

This is one of the first studies that focused on schools in an oil pre-boom. The findings only represent Major and Minor. For future studies such as this, it would be important to try to understand what factors make residents supporters, resisters, or deserters, such as economic stakes, education, attachment, identity, and others. In this study, residents perceived risks in their lives and communities because of changes, big or small. Multi-disciplinary studies may be necessary to understand the role that media, social networks, and psychological mechanisms play in allowing some residents in pre-boomtowns to cope with or disregard the risks, while others seemed more likely to let the risks impact their well-being.

Attitudes, perceptions, and reactions of other communities and schools in a pre-boom with different contexts would add to our understanding of the conditions regarding this stage of the boom cycle. These communities should also be researched again in the future, regardless of whether or not they continue growing. The impacts of the decisions they made at this stage could have long-standing implications for their communities, and

would further clarify the roles that attitudes, perceptions, and reactions have on outcomes during an oil pre-boom.

Studies on new residents' perspectives of an oil boom are scarce. The new residents of oil boomtowns and pre-boomtowns should be studied to interpret community identity, acceptance, and teaching and learning from their perspective. More research must also be done on how residents forge community identities and respond to perceived changes resulting from potential growth in very small, rural towns. It would be interesting to note how perceived changes to community values determine the result of their community identities, whether or not they strengthen or weaken.

More current research on students in an oil boom or pre-boom, both new and traditional students, should be done to clarify student learning needs, home situations, social acceptance perceptions, and challenges they face. More research should be done on understanding successful teachers' instructional adaptations in rapidly growing communities, particularly in the context of their schools and the needs of their students. Finally, quantitative research on pre-boom communities and schools may give a wider perspective on the themes of this study. Our understanding of pre-boom space needs, teaching and learning, community disruptions, and uncertain futures may be enhanced if future researchers approach it quantitatively, surveying large populations in the communities and schools.

## Conclusion

This research studied the perceptions, attitudes, and reactions of rural communities and schools in an oil pre-boom area of North Dakota. The research was

conducted using the Social Disruption Hypothesis as a framework and looked at the perspective of both school staff members and community members. The findings suggest even in a pre-boom stage, community members and school staff members receive benefits and face challenges relating to the growth, similar to communities in a peak-boomtown. They respond by becoming supporters, resisters, or deserters. From the outside looking in, these changes may seem small. It might be difficult to conceive that a few more students in a class or some more trucks on the road could make much of a difference. To these residents, though, it is everything.

A kindergarten class in Minor Elementary School saw their numbers grow from five students to eight in one year. Those three students could be the difference in the school, and the community, surviving. Major residents were concerned that they now needed to lock their cars and houses, which was a fundamental change to the way they perceived their community. No longer could they define their town as small, but safe, as now, to them, it faced the potential to be neither. Prior to this growth, these residents were essentially in a bubble. They saw their region change around them, yet felt their communities were insulated from the effects of the boom. Now, however, the pre-boom had arrived at their doorstep and they were forced to face it. It seemed as though all participants wanted to ensure that their schools and communities could receive the economic and population benefits that came with the region's growth, yet minimize its effect on their way of life.

Only time will tell if Major School and community planners have sufficiently prioritized investments and updated their infrastructure for successful future growth. The

economic benefits are enormous, and if the leaders planned correctly and the boom continues in full strength, they could reap great rewards. Residents may be faced with redefining and reinterpreting their communities as the towns grow, which could continue impacting their reactions to the changes. Time will also tell if Minor Elementary School and community even remain a dot on a map. Residents and teachers there have never had as much for which to be hopeful. The region's oil boom, regardless of the certain disruptions that accompany it, remains a powerful force for social change, growth, and hope for the communities in its path.

# APPENDICES

Appendix A
School Staff Member Participant Consent Form

**INFORMED CONSENT FORM FOR SCHOOL STAFF MEMBERS**

Attitudes, Perceptions, and Reactions: Two Schools and Communities Respond to an Oil Boom

You are invited to participate in a research study about staff members and community members in a rural oil boom community. You were selected as a possible participant because you are a school staff member in such a community. The purpose of this research study is to learn more about the perceptions, attitudes, and reactions of rural people when they are facing population growth due to an oil boom. This knowledge may provide ideas for how rural communities and schools can be assisted when faced with similar transition issues.

Approximately ten (10) to fifty (50) people will take part in this study, which is being conducted by Vincent Genareo through the University of North Dakota. The study will last up to nine months. You will be observed and/or interviewed at a location of your choice up to three (3) times. Interviews may last from thirty (30) to sixty (60) minutes, and observations will last approximately sixty (60) minutes.

If you are a teacher and you are being observed, you can read the consent form during of after the initial observation. The initial interviews will be set up at this time. The researcher will sit in the room and take notes of observations, from the classroom setting to student-teacher interactions. No visual or audio recording equipment will be used. After approximately one (1) hour of observations, the researcher will leave the location.

During the interview portion of the study, the researcher will sit down with you at a place of your choice, most likely within the research site (your classroom, teachers' lounge, etc.). The researcher will turn on a digital recorder and record the interview. He will then ask you a series of questions as he takes notes about ideas, follow-up questions, and reminders. You will be asked to share your ideas, opinions, stories, and experiences throughout the interview.

No risk is expected for interviewees. If at any time during the interview you feel

uncomfortable, you may terminate the interview and request that your interview data be withdrawn from the study. The interview will be confidential and the researcher will not disclose your name to anyone. To maintain confidentiality, the research will assign a pseudonym that he will use in all transcripts and in the final research.

You will not have any costs for being in this research study. You will not be paid for being in this study. The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study. Once the data is collected, all real names and locations will immediately be replaced with pseudonyms so that anybody who reads the data will not have access to your real name. Nobody who reads the data will know the town or school that was observed or be able to make a connection between you and your town or school. The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, and the University of North Dakota Institutional Review Board.

You may ask any questions you have now. If you later have questions, concerns, or complaints about the research, you may contact Vincent Genareo at 701-777-3153, or Jodi Holen, the researcher's dissertation advisor, at 701-777-6705 during the day. If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota. Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

_____ _____

Subject's Name Date

_____

Signature of Subject

Appendix B
Community Member Participant Consent Form

**INFORMED CONSENT FORM FOR COMMUNITY MEMBERS**

Attitudes, Perceptions, and Reactions: Two Schools and Communities Respond to an Oil Boom

You are invited to participate in a research study about staff members and community members in a rural oil boom community. You were selected as a possible participant because you are a community member in such a community. The purpose of this research study is to learn more about the perceptions, attitudes, and reactions of rural people when they are facing population growth due to an oil boom. This knowledge may provide ideas for how rural communities and schools can be assisted when faced with similar transition issues.

Approximately ten (10) to fifty (50) people will take part in this study, which is being conducted by Vincent Genareo through the University of North Dakota. The study will last up to nine months. You will be interviewed at a location of your choice up to three (3) times. Interviews may last from thirty (30) to sixty (60) minutes.

During the interview portion of the study, the researcher will sit down with you at a place of your choice, such as an office. The researcher will turn on a digital recorder and record the interview. He will then ask you a series of questions as he takes notes about ideas, follow-up questions, and reminders. You will be asked to share your ideas, opinions, stories, and experiences throughout the interview.

No risk is expected for interviewees. If at any time during the interview you feel uncomfortable, you may terminate the interview and request that your interview data be withdrawn from the study. The interview will be confidential and the researcher will not disclose your name to anyone. To maintain confidentiality, the research will assign a pseudonym that he will use in all transcripts and in the final research.

You will not have any costs for being in this research study. You will not be paid for being in this study. The University of North Dakota and the research team are receiving no payments from other agencies, organizations, or companies to conduct this research study.

Once the data is collected, all real names and locations will immediately be replaced with pseudonyms so that anybody who reads the data will not have access to your real name. Nobody who reads the data will know the town or school that was observed or be able to make a connection between you and your town. The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, and the University of North Dakota Institutional Review Board.

You may ask any questions you have now. If you later have questions, concerns, or complaints about the research, you may contact Vincent Genareo at 701-777-3153, or Jodi Holen, the researcher's dissertation advisor, at 701-777-6705 during the day. If you have questions regarding your rights as a research subject, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or you wish to talk with someone else.

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

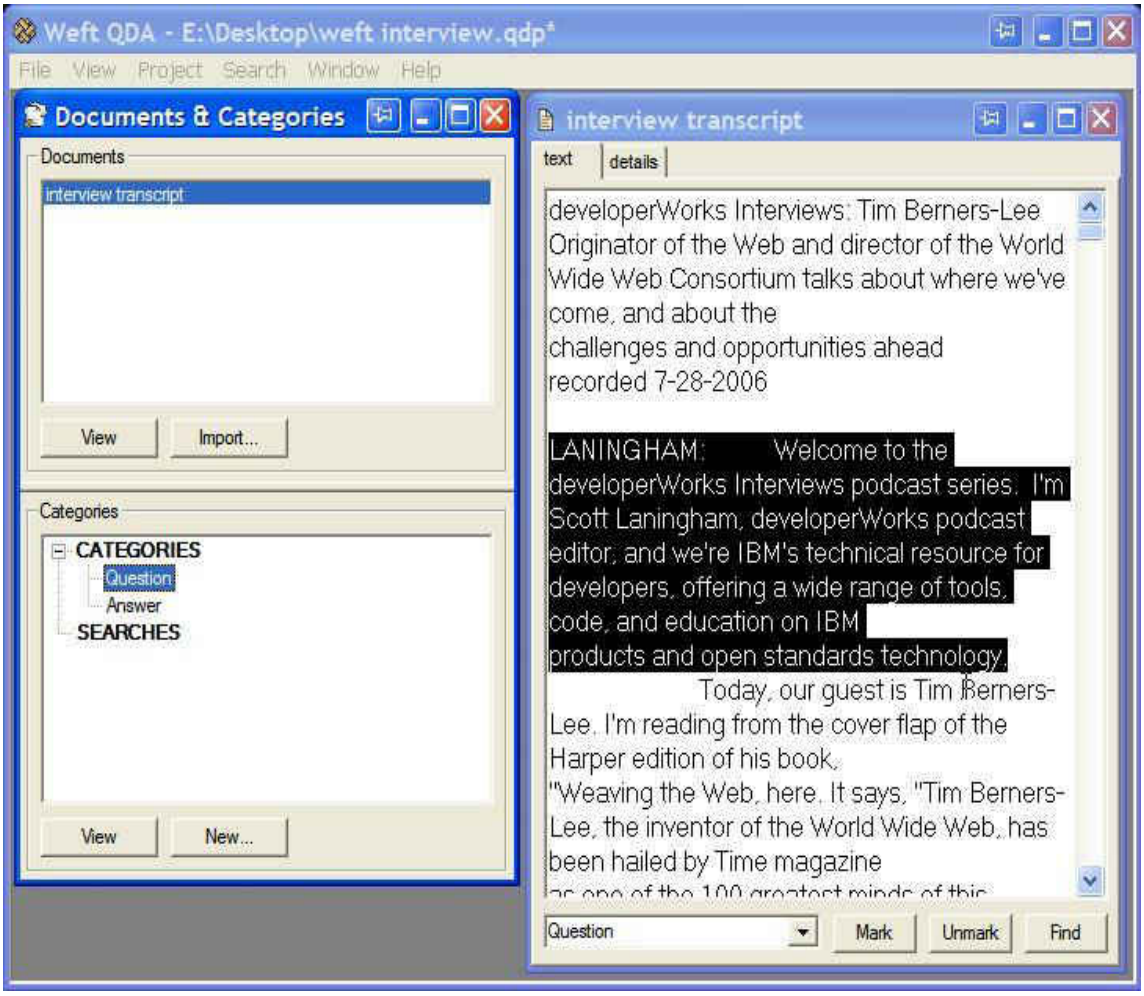
_____ _____

Subject's Name Date

_____

Signature of Subject

Appendix C
Weft QDA Screenshot




(Kurdi, 2007)

Appendix D
Code Chart

| Code | Definition | Example |
|---|---|---|
| Abundant Space | Available space in Minor School and community. | "Well, the school doesn't need a lot. We have a lot of open space and things like that." |
| Trust | Sense that trust among residents had declined recently. | "I think with us living in such a small town, that we're hesitant at first, um, to put 100% trust in new people that move in until we're given reason." |
| Minor-Like | Residents who fit the perceived mold of Minor people. | "Now there are too many people in town who aren't Minor-like people. They're transients." |
| Acceptance | Acceptance of new or current residents within the communities. | "We accept them and let them make their own choice after that whether or not they stay a part of the community, socially, you know. If they want to prosper, be accepted like everybody else, then they need to be a part of it, or they'll get, basically, shunned." |
| Aesthetics | Changing aesthetic space in the communities. | "The area has just changed. It's faster, dirtier, more industrial, and we're looking at maybe [Major] getting there soon. It's not the place me and my wife wanted to retire when we first moved here." |
| Industrial Space | Industrial growth and planning for space needs. | "I think it was wise and the whole county looked at it, to use that industrial park to try to get the service industries for oil and those were those jobs. And that's where Major started planning for it." |
| Changing Space | Growth-related changes to physical space in the communities. | "The problem is finding a space without having them need to build. People wanna come in and set up shop, not build from ground, and we don't have a lot." |
| Crowded | The absence of physical space in Major School and community. | "A bigger room would be really nice. I mean, look around. We're not exactly overflowing with space around here." |
| Instructional Style | Real or perceived changes to instruction because of growth. | "I'd have to do a lot more lecturing, and I don't want that. That's not me." |
| Academic Records | References to new students' academic records. | "Sometimes it's a guessing game at first. They have test data that follows them, but you don't know who you have until they're in front of you, and sometimes you still don't know for a while." |

| | | |
|---|---|---|
| Community Support | How community members support the school, or teachers perceive the support. | "It's our heart and soul. I get my workers from there, get my business from there, and it's just really important to keep giving back to the school." "Yes they support the students, but not always the teachers." |
| Transience | The transient nature of new students. | "It's something that we need to do, but we don't have the time to sit down and help them out if they don't stay long, or we never know who's staying and who's not." |
| Acceptance | Student acceptance of new classmates. | "But they did, they embraced them. But I think we're unique in that every year we get kids from Minor, in the junior high." |
| Academic Levels | Academic skill or knowledge levels of new students. | "A to Z. With more probably, based on oil, based on oil alone, if it was an oil type of situation, probably more towards the Zs." |
| Diversity | How teachers feel about teaching diverse students. | "My students all speak English and have trouble enough getting directions. So other languages and stuff would make it harder." |
| Student Home Life | Family and living situations of new students. | "Some of them though, the parents weren't here long enough for me to even meet them, or they're busy at work or working out of town, so they might not be home long enough with the kids." |
| Economics | Pre-boom funding impacts, from classroom to district levels. | "The money, three four years ago, was a problem, asking for things, but now it's not. Mainly because, two reasons, the administration is more supportive, and there's more money now because of the oil. So really, I can ask for anything and get it." |
| Oil Industry Work | The ways oil is impacting students, teachers, and the district. | "We're building that vocational department for kids, since we have so many that are going into oil." |
| Workload | Increasing teacher workload due to higher enrollment. | "The more I get done, especially with some of the new kids I got, the more time I have for myself at night for my husband. I still need to have a little husband time every now and then." |
| Close Bonds | Community closeness among residents. | "The good thing about Minor is it's tight knit…Support the community and people, and they will pull you outta any hole." |
| Locking Doors | Locking car and house doors. | "Some of them that don't like the idea of having more strangers in town, so they're never gonna be happy. A lot more people I talk to are locking their houses and cars." |
| Regional Changes | Boom-related changes in the region. | "Too many people there in Big Town. Like that more places lately. Too many cars on the road, can't take it slow anywhere now it seems, anywhere but here anyways." |
| Housing | Housing conditions in Major or Minor. | "Housing are selling for two or four times what they're really worth. People are coming in to see me for housing all the time." |

| | | |
|---|---|---|
| Living Costs | Prices of living in the booming region. | "It's so damn expensive everywhere around here." |
| Traffic | Traffic on the roads within the community, the highway, and the region. | "Used to be, you'd drive up to the main street stop sign, and if you had to wait for one car, it was unusual. Now it's not terribly unusual to wait for four or five." |
| Fear of Crime | Concern with current or future crime, with little or no real crime evidence. | "Of course, you're concerned with the increase in crime, but it's not unexpected. Any time you have an increase in population, you have an increase in crime." |
| Service Burdens | Strains on community services because of the growth. | "We might need better fire department and ambulance. It's hard to get people into that because of oil." |
| Real Crime | Actual incidents of crime are discussed. | "We get more calls, lot more, for D.U.I.s, more for bar fights, some locals, but mainly young oil guys had too much to drink." |
| Investment Costs | Financial investments required for future development. | "Takes money. It's a big investment here. Takes a kind of person who's willing to make it. It's a gamble." |
| Hope | Residents expressed a sense of future optimism because of the growth. | "If we keep getting some new ones, at least it'll give us some more hope." |
| Community Change | Changes residents perceive in their town due to recent growth. | "There's lots of new people here now, I mean a lot. Lots of new people I don't recognize." |
| Other Boomtowns | References to other regional boomtowns. | "Oh yes, it's just too much stress when we have to go down there. It's too much for me sometimes." |
| Barriers | Self-imposed or external barriers to growth. | "There's place to build, but we need infrastructure built to support the homes and businesses." |
| Past Boom/Bust | References to the regional oil boom in the 1980s. | "We had the oil before. It happened and we saw what it did to other towns." |
| Distrust Forecasts | Not being certain about growth forecasts. | "Plan, plan, plan. I think we have an idea of population estimates, but you can never be sure. That's the problem with booms, you never know when they'll bust." |
| Planning | Planning done in preparation for the growth. | "It was just last winter we had the city rezoned, in terms of residential, commercial, and uh, industrial. From the oil growth. They left room for expansion, which was good thinking." |
| Keeping Up | Planning for successful growth through the pre-boom. | "I like to see growth, but we gotta see it the right way." |

Appendix E
Data Analysis Procedure Steps

1. Reviewed literature to investigate theories, findings, and a priori codes from other boomtown literature.
2. Jotted code ideas during and after the interviews.
3. Coded completed interview transcripts using emergent and a priori codes.
4. Searched literature for existing theories and codes that match findings.
5. Coded new transcripts with existing and new codes.
6. Modified codes for clarity as new information emerged.
7. Developed a code chart with code descriptions and examples.
8. Upon completion of all interview transcript coding, investigated codes that could be grouped by similarity, combined, collapsed into categories, expanded, renamed, or deleted.
9. Developed a new code chart with final code descriptions and examples.
10. Organized codes into themes based upon similarities.
11. Advisor check helped redesign and organize themes as the major findings.
12. Developed category names to define and represent the themes.
13. Reviewed literature to research theories and findings that explain this study's results.
14. Single assertion developed that integrated the findings of the four major themes at the holistic case level.
15. Revisited data, searched literature for reasons differences occurred in Major and Minor.
16. Advisor check helped clarify differences.
17. Interpreted the findings into a final assertion and two sub-assertions, one for Major and one for Minor.
18. Reviewed literature for support of and differences between this study's findings.
19. Developed implications and recommendations of the study based off of the findings.
20. Reviewed literature to support and investigate implications of this study.

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