

COMMUNITY NETWORKS:
IDENTIFYING SOCIAL CAPITAL IN EMERADO, NORTH DAKOTA

by

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Abstract

The City of Emerado, North Dakota, population 414, located in northeast North Dakota is the subject of a Social Network Analysis (SNA), conducted prior to it being the subject of a University of North Dakota Center for Community Engagement, Community Connect Forum. The SNA was developed based on the results of 25 interviews conducted with local residents, elected officials and business owners, using snowball sampling and following grounded theory methods. The interview results were coded and memos were written to aid in the analysis.

Social Network data was entered into the Sentinel Visualizer software (FMS Advanced Systems Group) to develop a visual image of the network, including nodes (people, organizations or businesses) and links to illustrate the relationships between nodes. The SNA helps to frame the relationships in terms of bridging and bonding social capital. The SNA provides the ability to mathematically determine the most important nodes to the community social network, using calculations to determine levels of degree centrality, betweenness centrality, closeness centrality, Eigenvalue, and network density. After calculating these elements, categorical descriptions of the top ten individuals for each category are provided. The networks of five individuals are reviewed in depth to aid in comprehending the process of incrementally expanding networks.

Table of Contents

List of Figures	viii
List of Tables	ix
Acknowledgements	x
Dedication.....	xi
Chapter 1 - Introduction	1
Research Question.....	1
Chapter 2 - Literature Review, Concepts and Resources.....	3
Subsection A. The Community: Emerado, North Dakota.....	3
Overview.....	3
Housing.....	5
Demographics	7
The Community Connect Forum.....	8
Subsection B: Community Capitals and Social Networking.....	9
Community Capitals.....	9
The Role of Social Networking.....	11
Social Network Analysis	13
Degree Centrality	13
Betweenness Centrality.....	14
Closeness Centrality	15
Eigenvalue.....	16
Network Density.....	16
Strong Ties (Bonding) vs. Weak Ties (Bridging)	17
Ennis and West Case Study - Measuring Social Networking.....	18
Spiraling of Community Capitals.....	19
Subsection C: Methodology - Background Research	19
Ethnographic Study	19
Snowball Sampling Methodology.....	20
Grounded Theory	21

Glossary of Terms	21
Chapter 3 - Methodology	25
Introduction.....	25
Phases of Work	25
Phase 1: Background of Methods	26
Initial Sampling - Snowball Sampling.....	26
Overview - Research Design.....	26
Phase 2: Interviews	27
Research Instrument	27
Interview Process	28
Phase 3: Findings and Analysis	29
Coding.....	29
Coding Categories	30
Part A. Change Making	30
Part B. Communication Tools	30
Part C. Informal Connections.....	31
Part D. Formal Organizations and Participation Patterns	31
Part E. Strengths and Weaknesses.....	31
Memo Writing.....	31
Social Network Analysis and Visualization Software.....	32
Ethical Considerations:.....	32
Methodology Summary	33
Chapter 4 - Findings.....	34
Findings Introduction	34
Part 1 of the Research Question - What social networks exist in Emerado, North Dakota?.....	35
Group and Organization Overview	35
Formal Organizations	35
Organizations Affiliated with Emerado.....	36
Organizations Outside Emerado.....	37
Informal Groups	38
Groups Affiliated with Emerado	39

Group Interactions and How Groups Impact Community Decisions	43
Social Relationships	44
Five Social Networks.....	46
First Tier.....	49
Second Tier	50
Person #1 – Tier 2 (“Involved Newbie”).....	51
Person #2 – Tier 2 (“Regionally Involved”).....	51
Person #3 – Tier 2 (“Long-Term Involved”).....	52
Person #4 – Tier 2 (“Long-Term Moderate”).....	52
Person #5 – Tier 2 (“Young Person”)	52
Third and Fourth Tiers.....	53
Sub-question 1. Where are the areas of greatest strength in Emerado’s social network?	60
Bridging vs. Bonding.....	60
Degree Centrality	62
Betweenness Centrality	63
Closeness Centrality	64
Eigenvalue.....	65
Combined Centrality, Degree, Betweenness, Closeness and Eigenvalue Rankings	66
Sub-question 2. What are the Characteristics of those with the Strongest Social Networks?..	68
Sub-question 3. What Types of Social Network Density Exist in Emerado?	70
Network Density Calculation.....	70
Part 2 of the Research Question - What Role do Social Networks Play in Community	
Development and Redevelopment?.....	72
Description of the Social Network Analysis Diagram for Emerado	72
Organizations Creating or Preventing Change.....	73
Findings Summary	74
Chapter 5 - Conclusions	75
Findings –Social Capital in Emerado.....	75
Findings –Learning from Emerado	76
Community Strength and Weakness – Perspectives of Emerado Residents	77
Reflecting on Potential Refinement of Interview Questions for Future Projects	78

Application of the Snowball Sampling Technique	79
Lessons Learned.....	80
Conclusion Summary	82
Bibliography	84
Appendix A - Interview Questions	90
Appendix B - List of Codes.....	93
Appendix C - IRB Approval.....	98
Appendix D - Community Receptiveness	99

List of Figures

Figure 2.1 Emerado Quadrants	4
Figure 2.2 Agricultural Land Surrounds Emerado	5
Figure 2.3 Highway Oriented Businesses and Trailer Court (NE Quadrant).....	6
Figure 2.4 Traditional Downtown Emerado (SW Quadrant)	6
Figure 2.5 Emerado Racial Demographics.....	7
Figure 2.6 Population Pyramid.....	8
Figure 2.7 Example Social Network.....	13
Figure 2.8 Degree Centrality Example.....	14
Figure 2.9 Betweenness Example	15
Figure 2.10 Closeness Example.....	15
Figure 2.11 Eigenvalue Example	16
Figure 4.1 Emerado Organizations, Groups and Connections	36
Figure 4.2 Person #1 Involved Newbie (high in bonding)	48
Figure 4.3 Person #2 Regionally Involved (high in bridging).....	48
Figure 4.4 Person #3 Long-Term Involved (fairly high in both bridging and bonding).....	48
Figure 4.5 Person #4 Long-Term Moderate (moderate in bridging and bonding, slightly higher bridging).....	49
Figure 4.6 Person #5 “Young Person” (low in bridging and bonding).....	49
Figure 4.7 Tier 2 of Person #1 “Involved Newbie” (97 nodes, 203 links).....	54
Figure 4.8 Tier 2 of Person #2 “Regionally Involved” (70 nodes, 99 links).....	55
Figure 4.9 Tier 2 of Person #3 “Long-Term Involved” (104 nodes, 177 links).....	56
Figure 4.10 Tier 2 of Person #4 “Long-Term Moderate” (65 nodes, 95 links).....	57
Figure 4.11 Tier 2 of Person #5 “Young Person” (13 nodes, 12 relationships)	58
Figure 4.12 Tier 4 of Person #1 “Involved Newbie” (159 nodes, 336 links).....	59
Figure 5.1 Person #5 (“Young Person”, low in bridging and bonding) (Repeat of Figure 4.6)....	81

List of Tables

Table 4.1 Five Individual Networks Overview	47
Table 4.2 Degree Centrality - Number of Direct Relationships	63
Table 4.3 Betweenness Centrality Score	64
Table 4.4 Closeness Centrality Score.....	65
Table 4.5 Eigenvalue Score	66
Table 4.6 Combined Ranking	68
Table 4.7 Characteristics of the Highest Degree Centrality Individuals.....	69
Table 4.8 Specific People who Create Change.....	70
Table 4.9 Types of Nodes in the Emerado Social Network Analysis Diagram	71
Table 4.10 Organizations Creating Change.....	74
Table 4.11 Organizations Preventing Change	74

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- Lisa Atkinson, AICP

Dedication

This book is dedicated to my husband.

Chapter 1 - Introduction

The intent of the study is to conduct a social network analysis of Emerado, a small town in rural North Dakota, to assess the networks and connections within the community as well as how people in the community relate, interact, maintain connections, and get information.

Research Question

The primary research question addressed in this thesis is: *What social networks exist in Emerado, North Dakota, and what role do they play in community development and redevelopment?* Secondary questions are:

1. *Where are the areas of greatest strength in Emerado's social network?*
2. *What are the characteristics of individuals with the strongest social networks?*
3. *What degree of social network density exists in Emerado?*

Emerado has been shaped by a variety of unique elements and factors that affect the interactions of its residents, their enjoyment of life, and also the quality of the community as a whole. Residents have opinions regarding aspects of the community that they like or dislike and what they would like to see changed shaped by their personal interpretations and preferences. The reason individuals moved to the community, how they interact, and why they chose to continue to live in the community are largely related to the social networks and linkages within the community. This study assesses how individuals interact and how social networks affect the community.

The term social network analysis, in this thesis, refers to how people interact as part of a physical community. Online social networks, such as Facebook, may contribute to how individuals interact in real life, but they are only one aspect of the social networks. Online social networks are not the focus of this study.

This thesis was designed, in part, to assist in providing background information for the April 26, 2014, Community Connect Forum (CCF) in Emerado, North Dakota. Dr. Lana Rakow, Director of the University of North Dakota (UND) Center for Community Engagement (CCE) suggested thesis research regarding social networks in Emerado as a thesis topic. Dr. Rakow coordinated meeting attendance at the July 2, 2013, Emerado Park District meeting. Findings

from the thesis research will be presented at the April 26, 2014, Forum, and published thereafter. Although the results will be shared, the process and methodology utilized are not mandated by the University of North Dakota, Emerado or the Community Connect Forum.

Chapter 2 - Literature Review, Concepts and Resources

Subsection A. The Community: Emerado, North Dakota

Overview

Emerado, North Dakota, is located in Grand Forks County, in eastern North Dakota. It is easily accessible by vehicle, located about 15 miles from Grand Forks, North Dakota along the south side of U.S. Highway 2. Grand Forks is located on the North Dakota-Minnesota border and Emerado is located about 20 miles from Minnesota.

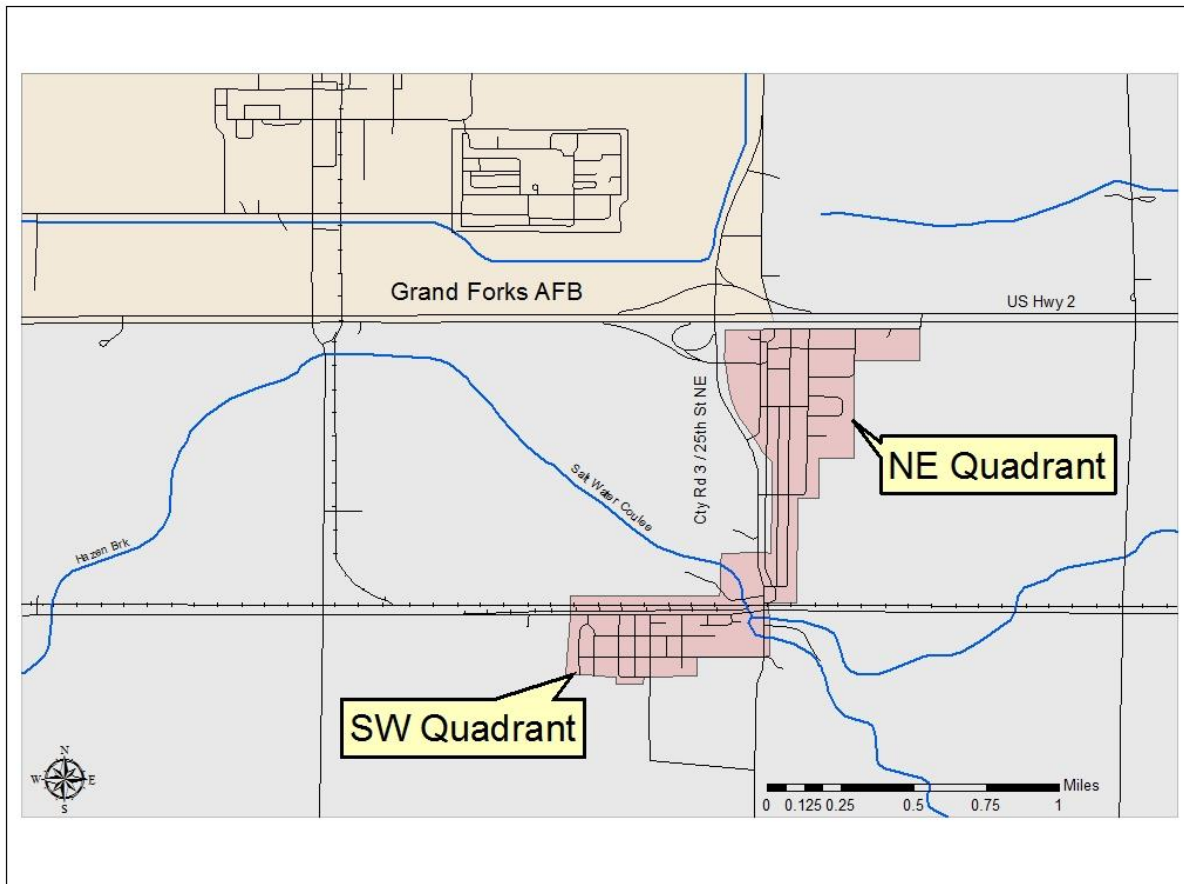
Emerado is a small community, with a population of 414, according to the 2010 Census. There are approximately 25 businesses in or near Emerado. The City is in two quadrants, divided by County Highway 3 and 17th Avenue Northeast. The northeast quadrant is comprised of several businesses, primarily along Highway 2; a trailer court; and, several single family home lots (See Figure 2.1). One interviewee referred to this portion of town as uptown. The businesses in Emerado near Highway 2 include two gas stations, Subway and Dairy Queen Restaurants, a car dealership, and a couple smaller businesses in a strip mall. On the north side of Highway 2 and just outside of Emerado are a few service oriented businesses, including a hair salon. The southwest quadrant of Emerado is more of a traditional downtown, that includes the city hall, post office, bar, a cooperatively-owned grain elevator, and few small businesses. Emerado is primarily surrounded by farmland, as illustrated in Figure 2.2, except in the northwest quadrant of Highway 2 and County Highway 3, where the Grand Forks Air Force Base is located.

The Base was established on February 8, 1957. The total force strength is approximately 2,100 including active duty military and civilians. The close proximity of the base to the community has shaped the community over time, and still impacts Emerado today. Without the base, the community does not have enough population to support the businesses along Highway 2, including the two gas stations, Subway Restaurant and Dairy Queen Restaurant. The base is also strongly linked with the history of the trailer court, as the trailer court was initially established to provide housing for contractors constructing the base in the 1950s. The trailer court is located south of the commercial businesses near Highway 2, and includes most of the

land, between 25th Street Northeast/County Road 3 and 6th Street that is located north of 17th Avenue Northeast.

Emerado is also home to a high number of Air Force retirees, who seem to prefer to retire close to the base. Many retirees, especially those not yet of the traditional retiring age, have found a new line of work in the community or region.

Figure 2.1 Emerado Quadrants



Source: US Census Bureau Tiger Files and ESRI, Created by Christopher Atkinson

Figure 2.2 Agricultural Land Surrounds Emerado



Source: Google Maps and EarthExplorer/USGS (obtained 4-22-14)

Housing

There is an abundance of rental housing (52 percent of the community's housing units), most of which are located in a trailer court. The location of the trailer court is visible from Highway 2 and even more visible along County Road 3, which is the north-south road connecting the southwest quadrant of the community to Highway 2, as shown in Figure 2.3.

There are 184 housing units in the community. Only 23 households, which is less than half of the 48 housing units in Emerado that have children (under age 18), have two-parent households. This impacts community life and family involvement in the community. It should also be noted that the average household size of owner occupied housing units is 2.09, contrasted with 2.4 as the average household size of renter-occupied housing units. Therefore, it seems most of the families in the community live in rental housing.

The other half of the housing units are in the more traditional downtown portion of town, which is located in the southwest quadrant of town, as depicted in Figure 2.4. These houses are somewhat older, with varying qualities ranging from manufactured housing to traditional homes.

There is not a lot of separation between uses, so some homes are located immediately adjacent to business and industrial uses.

Figure 2.3 Highway Oriented Businesses and Trailer Court (NE Quadrant)



Source: Grand Forks County / EsriMap (obtained 3-15-14)

Figure 2.4 Traditional Downtown Emerado (SW Quadrant)



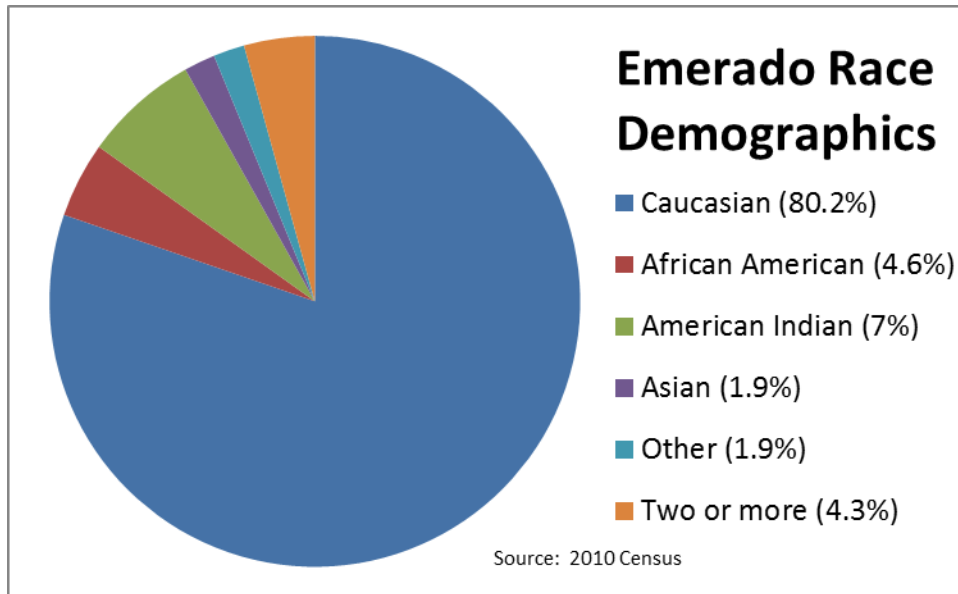
Source: Google Maps and EarthExplorer/USGS (obtained 4-22-14)

Demographics

As shown on Figure 2.5, the population is primarily Caucasian (80.2%), 4.6% African American, 7% American Indian, 1.9% Asian, 1.9% other and 4.3% of the population has two or more racial backgrounds. Figure 2.6 provides age and gender information. The median age is 39.1 years. There are only 35 people in the community over age 65. There are 91 children under the age of 18.

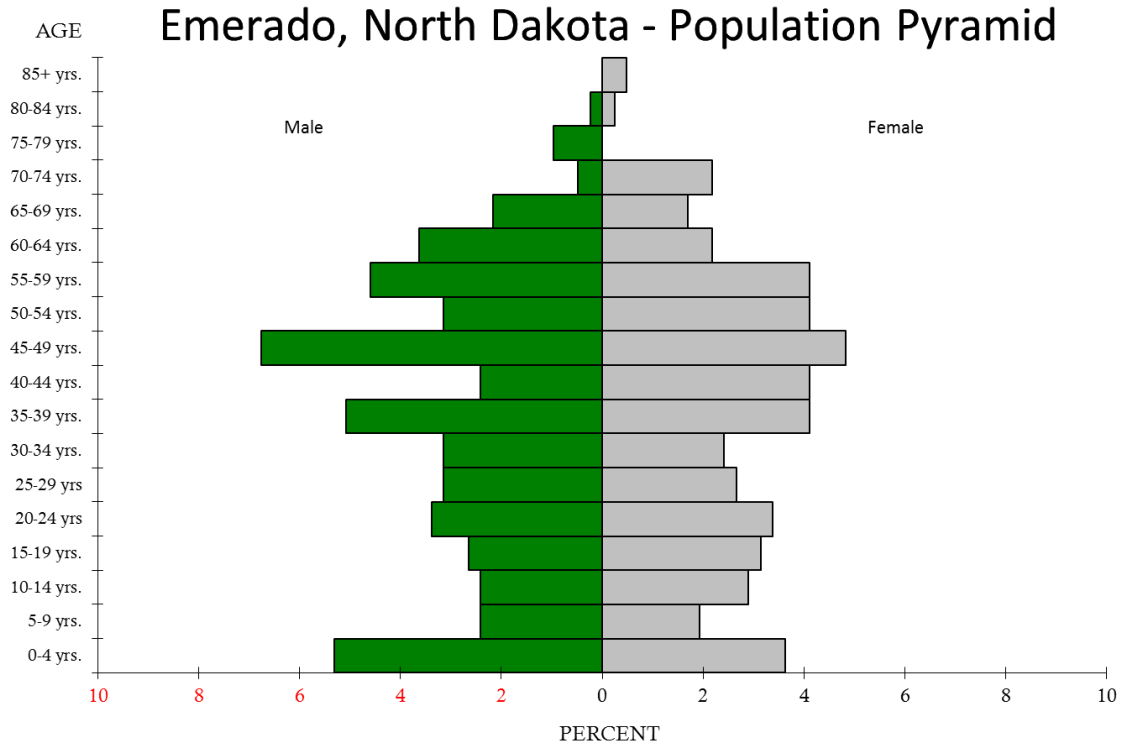
Preliminary assessment of community physical conditions was made by touring the community by car. The visual impact of the abundance of rental housing was verified and two additional issues were identified: the lack of separation between various uses, and the low standards/quality of housing. These issues were referenced during the study allowing community members to provide their perspectives.

Figure 2.5 Emerado Racial Demographics



Source: 2010 Census

Figure 2.6 Population Pyramid



Source: 2010 Census

The Community Connect Forum

This study is part of a larger project, an annual event called the Community Connect Forum (CCF). The CCF is conducted by the University of North Dakota (UND) Center for Community Engagement (CCE). The CCE supports and coordinates interaction between students, faculty and the community, according to information provided on its website. Further, the CCE focuses on experiential or service learning and scholarly work that benefits the public.

The CCF is held in a Minnesota or North Dakota community each Spring, as UND students, faculty and community members from throughout the region gather to spend a day learning about a particular community, including its challenges and opportunities. The CCF provides an experiential learning experience to students, faculty and other communities. Part of the goals of the CCF is to help create strategies for improving the host community, as well as to apply lessons learned to other communities.

The UND CCE asked Emerado whether they would be willing to serve as the host community for the 2014 CCF. According to Dr. Lana Rakow of the CCE, they were looking for

a community in Grand Forks County. When the CCF began in 2008, the original thought was to have the forum in Grand Forks County every other year, although that has not occurred. The last CCF held in Grand Forks County was in 2008 when the program began. It was determined that a small community would be appropriate, and after considering the other small communities in the county, Emerado seemed to be an ideal fit. The topic of networked communities seemed appropriate given that there are several existing projects in the area, including an upcoming Grand Skies Project on leased Air Force Land and the Air Base itself. There is also the potential for connections with UND through Biology, Space Studies and other departments.

After identifying Emerado as a potential host community, Dr. Rakow consulted with other Community Connect participants, including UND faculty. Dr. Rakow and another CCE staff member, Anna Larson, met with the Emerado Park Board to present the opportunity. Two Emerado Park Board members came to the Warren CCF in 2013, which helped them understand what the CCF entails and got them excited about the project. It is anticipated that more than 150 individuals will participate in the CCF in Emerado on April 26, 2014. The results of this study will be shared with the community prior to the CCF to validate the data. Study results will then be presented at the CCF to serve as the starting point for learning about Emerado and its networks. Attendees from other communities will be able to learn about Emerado, and apply information regarding networks to their own communities.

Subsection B: Community Capitals and Social Networking

Community Capitals

Community capitals have economic connections, as the term capital would suggest (Castle, 2002). Castle (2002) goes on to note that Loury (1997), an economist by trade, “provided the first generally recognized application of the concept to explain economic performance more clearly” (Castle, 2002, p. 331). Castle also credits Coleman (1988, 1990) with expanding on the concept and treating “capital as an economic concept (Castle, 2002, p. 331).” According to Emery and Flora (2006), there are seven different types of community capitals: financial, social, human, natural, built, political and cultural.

Human capital includes education, skills, self-esteem and health (Emery and Flora, 2006). It pertains to the skills and abilities of the individual person, including both physical and cognitive (Stover-Wright, 2009). Natural capital includes the soil types and quality, air quality,

water quality and availability, and biodiversity. Cultural capital includes language, rituals, dress, and traditional crops, which serve as its symbolism (Emery and Flora, 2006). Political capital includes elements of inclusion, power and who has a voice within the community (Emery and Flora, 2006). Built capital includes the traditional infrastructure elements such as water system, sewers, utilities and health systems (Emery and Flora, 2006). Financial capital includes elements such as wealth, security, income credit, and investment (Emery and Flora, 2006). Money is the symbolic element of financial capital.

The seventh capital is social capital. Social capital, at its core, needs to involve more than one individual (Castle, 2002). It includes groups, bridging and bonding networks, and also leadership, trust and reciprocity factors (Emery and Flora, 2006). Social capital is limited to the “scope of the field created by an actor’s network of social acquaintances (Stover-Wright, 2009, p. 26).”

As the cliché has it, it isn’t what you know, but who you know that counts. The concept of social capital points to the ways in which social relationships serve as a resource, allowing individuals and groups to cooperate in order to achieve goals that otherwise might have been attained only with difficulty if at all (Kilpatrick, et al., 2003, p. 417).

When compared to the other forms of community capital, social capital is thought to be more easily accessible for those of lower incomes to acquire. This is especially important since social capital helps provide the capacity to improve one’s economic status, among other benefits, which may help reduce poverty (Zhang, et al, 2011).

Social capital theorists (e.g., Granovetter, 2005; Lin, 1999a) argue that social networks, the key elements of social capital, have impacts on economic well-being in three principle respects. First, they help to deliver trustworthy and accessible information. Second, they help maintain good market order through reward and punishment mechanisms such as group exclusion or reputation recognition. Finally, they foster trust, which reduces transaction costs and facilitates economic actions (Zhang et al. 2011, p. 122).

Social capital plays a strong role in building and maintaining social networks for individuals as well as at the community level.

The Role of Social Networking

Research by Ennis and West (2013), suggests that if there are significant positive connections among diverse groups of individuals, there will be greater access to information, ideas and resources. Relating to these strong ties, Ennis and West (2013) reference the following quote:

Social networks usually contain dense pockets of people who “stick together”. We call them cohesive subgroups and we hypothesize that the people involved are joined by more than interaction. Social interaction is the basis of solidarity, shared norms, identity, and collective behaviour, so people who interact intensively are likely to consider themselves a social group (de Nooy, et al. 2005, p. 61 in Ennis and West, 2013 p.45.).

Levine and Kurzban (2006) discuss the various types of social networks and related theories. They suggest that individuals tend to choose partners in which they share a connection, creating a “clustered structure of relationships (Levine and Kurzban, 2006, p. 173).” They further suggest that individuals enter into relationships that provide a mutual benefit to all those involved, even if they do not keep track of the equality of the reciprocal benefits. Ennis and West (2013) link social networks to social capital theory:

The links between individuals and organisations, are key to sharing of information and resources, and mobilization for change. Social networks are a central concept in social capital literature, and are generally considered to be the ‘structure’ within which social capital can exist (Bourdieu, 1986; Putnam, 1993; Lin, 2001; Stone, 2001) (Ennis and West, 2010 p.408 in Ennis and West, 2013 p.43).

Benefits of these social relationships “include a wide variety of favorable outcomes, spanning material gain, lucrative information, social obligations that can be called upon, material and emotional support and so forth (Levine and Kurzban, 2006, p. 174).” Further, they noted the

“strong selection pressures for extracting social benefits from others, avoiding social costs, and crucially, making oneself valuable as a social partner (Levine and Kurzban, 2006, p. 174).”

The strong selection pressures noted by Levine and Kurzban are due to the fact that humans have a limited number of “social slots” they can fill (Levine and Kurzban, 2006, p. 175). Individuals choose to be in relationships with individuals that have similar goals, not necessarily for the reciprocal benefits, but because of the goal alignment. Further, individuals choose to associate with individuals that value them (Levine and Kurzban, 2006).

Network externalities refer to a gain or loss provided for associated individuals. A benefit to one person in a network positively benefits all those that are tied to that person. When individuals are linked in a network, they have a stake in the continued prosperity of the individuals in the network. When there is a positive result to one or more individuals, it becomes a tertiary benefit, which often comes through the shared relationships.

When an individual delivers a benefit to someone with whom she shares overlapping mutual relationships, i.e. when the tie is embedded in a dense network, the effect of this benefit is increased as a function of the number of ties that connect to the beneficiary indirectly (Levine and Kurzban, 2006, p. 175).”

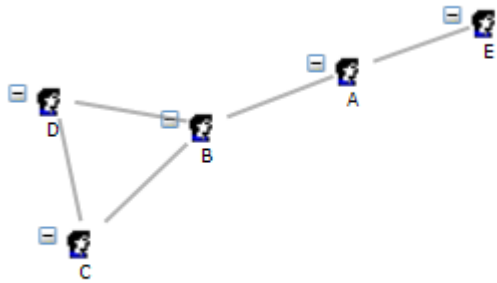
The possibility of cascading benefits increases as social networks increase their quantity of connections (Levine and Kurzban, 2006).

Castells (2007) discusses the “network society,” defined by its strong social-media and social network influence, and how this affects who holds power within communities and society. Related to the topic of social networks, is the concept of strong ties, including family and close friends (Onyx and Leonard, 2011) and weak ties, or all other acquaintances (Granovetter, 1983), as well as how partners are chosen for cooperative efforts (Levine and Kurzban 2006).

Social Network Analysis

Social Network Analysis (SNA) is a tool that allows relationships to be evaluated, and is especially helpful for understanding inter-personal relationships within a group. The collective relationships of the group are called a network. In SNA, individuals are classified as nodes or actors. The connected relationships between nodes are called linkages, and are drawn as lines or arrows in a SNA illustration, as shown in Figure 2.7, which is a variation of the diagram by Reid and Smith, 2009 (p. 49). The nodes are labeled A through E. The lines between each node represent an interpersonal relationship.

Figure 2.7 Example Social Network.



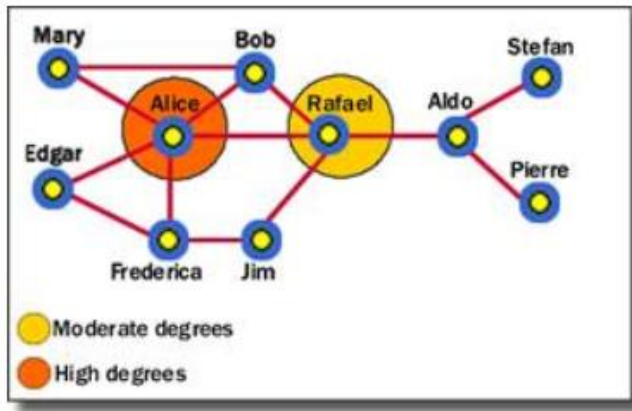
(Adapted from Reid and Smith, 2009, p. 49)

Degree Centrality

The number of direct relationships that a node has is referred to as degree centrality. The degree of connectedness can be measured by the number of ties an individual has to others in the network. It refers also to the position that a person (actor) has in the social network, essentially how connected they are with everyone else. High degree centrality actors are generally active in the network. Individuals with high degree centrality are well connected with high degrees of influence, power and information accessibility. They often connect other actors to important parts of the network. They may have a large number of relationships, but if they point to low level entities they will not be the most connected node in the network. Actors with high degree centrality are likely to be deal makers, often working as third parties to get things done. Because they have multiple avenues for accomplishing their goals, they are less dependent on others. The sample network in Figure 2.7 includes actor B, who is the most connected and therefore the highest degree of centrality, and actor E is the least centrality (Reid and Smith, 2009; FMS

Advanced Systems Group/Sentinel Visualizer). In Figure 2.8, Alice has the highest Degree Centrality, as she has 5 links, while Rafael touches only 4 links, falling into the category of “moderate degrees” centrality.

Figure 2.8 Degree Centrality Example



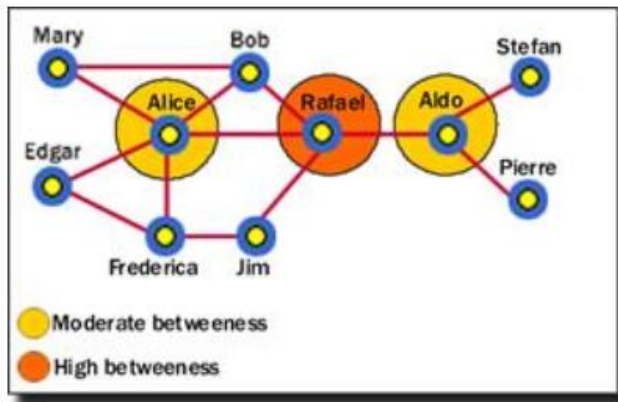
Source: Sentinel Visualizer 6: FMS Advanced Systems Group

Betweenness Centrality

Betweenness centrality provides information regarding a node or actor’s ability to make connections to other groups or pairs in a network. If an actor has high levels of betweenness, they have a powerful or favored network position. They hold a powerful position because they have a great degree of influence since they span between ties, cliques or groups in a network. Without this entity, the network groups would not be connected. Individuals with high betweenness centrality “represent a single point of failure,” meaning that without this individual, the network would fail to be connected (Sentinel Visualizer 6).

Figure 2.9 shows Rafael with the highest level of betweenness since without him, Aldo’s network and Alice’s network would not be connected. Alice and Aldo have moderate betweenness since they are the link that holds their networks together.

Figure 2.9 Betweenness Example



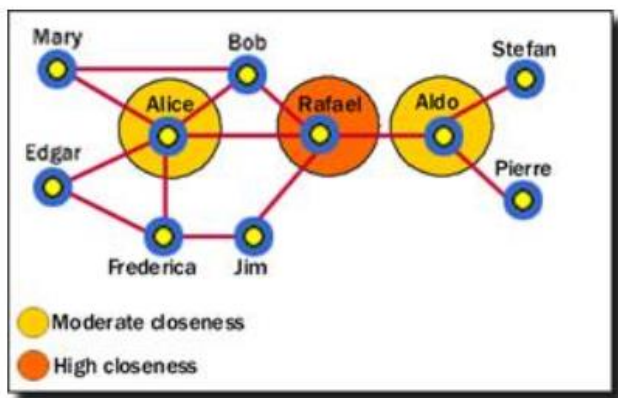
Source: Sentinel Visualizer 6: FMS Advanced Systems Group

Closeness Centrality

Closeness centrality measures how quickly an actor can access other entities in a network. The shorter the path that a node has to other nodes, the greater its closeness factor will be. By being close to other entities, it has a greater degree of visibility regarding what is happening in the network. The nodes that can reach more entities through the shortest paths will have the highest closeness centrality. It allows them to fairly directly connect with their own networks and other networks or entities that span different groups or networks.

In Figure 2.10, Rafael has the highest closeness, followed by Alice and Aldo with moderate closeness. Rafael, being more central can reach all of the nodes more quickly than anyone else. Aldo and Alice have to go at least one step further to reach nodes on the opposite side of Rafael.

Figure 2.10 Closeness Example



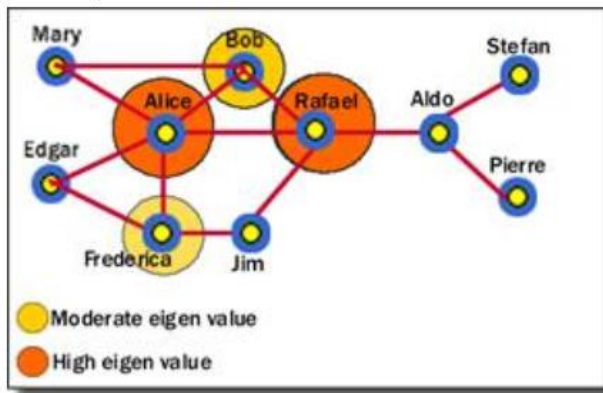
Source: Sentinel Visualizer 6: FMS Advanced Systems Group

Eigenvalue

Closeness to other close entities in a network is measured by Eigenvalue. It identifies entities that are most central in the overall network. If a high Eigenvalue is present, it indicates an actor is “more central to the main pattern of distances among all entities (Sentinel Visualizer 6).” It also provides a way to measure positional advantage, which is one aspect of centrality.

Figure 2.11 provides a visual example of Eigenvalue. The multiple links to and from the nodes on the left side of the figure indicate closeness. Alice and Rafael are both close to these and other interconnected nodes in the overall network, giving them a high Eigenvalue. Bob and Frederica have moderate Eigenvalues as they are close but not quite as close as Alice and Rafael to the other closely linked entities.

Figure 2.11 Eigenvalue Example



Source: Sentinel Visualizer 6: FMS Advanced Systems Group

Network Density

Network density is measured by comparing the number of possible node connections with the number of actual connections, with each line measured as one connection. In the example social network (Figure 2.7), each actor (node/person) could have a link to every other actor except themselves. Each actor could have a connection to four other actors, and once each actor was linked, there would be a total of 10 connections, which would equate to 100 percent density. In the example, Figure 2.7, the network density is 5, or 50 percent, since E is not connected to C, D, and B, and also because A is not connected to C and D. There are only 5 of the 10 possible connections (Reid and Smith, 2009).

Higher density makes a network stronger as it allows for better dissemination of information, transferring details more quickly and directly between individuals that are closely or

directly networked. Having linkages that are more interconnected also helps make the network more durable and resilient to individuals leaving the network, whether moving out of the area or retiring. However, the more people that leave, the more likely it is a network will no longer function well, especially if the better connected individuals are the ones leaving the network. For example, if actor B left the network depicted in Figure 2.7, the network would fall apart. However, if actors A and C were also connected, the network would be dense enough to withstand the shock of losing B (Reid and Smith, 2009).

Network density is calculated using the calculation network density equals actual connections divided by potential connections. Potential connections is equal to the number of nodes times one less than the number of nodes, all divided by two (Hanneman and Riddle, 2005).

$$PC=(n*(n-1))/2 \text{ where } PC= \text{Potential Connections and } n = \text{total nodes}$$

Strong Ties (Bonding) vs. Weak Ties (Bridging)

Zhang et al. (2011) describes strong ties (bonding) to include the relationships one might have with close friends or family members, providing bonding capital. They argue that bonding capital is beneficial to helping people survive in their current situations. Briggs (1998) gave bonding capital the term “social support” (in Zhang et al., 2011, p. 123). Strong ties, such as family and close friends are less likely to have and communicate new information that would be of economic benefit, including job search leads or career enrichment because of the homogeneous nature of most strong ties. Strong ties, while helpful in day-to-day living due to the emotional and material support typically provided, are not typically beneficial for economic advancement (Zhang et al., 2011).

By contrast, bridging capital, established by “more heterogeneous but weaker ties (Zhang et al., 2011, p. 120),” helps more with economic advancement. DeSantis (2006) in Reid and Smith (2009) refers to “bridgers” as people with “real power, the source of which is a personal reach that stretches across every imaginable boundary into every corner of a given community” (DeSantis,2006 in Reid and Smith, 2009, p. 50). Briggs (1998) gave bridging capital the term “social leverage” (in Zhang et al. 2011, p. 124). Weak ties includes memberships to voluntary organizations, which include people from a variety of economic and social backgrounds, bridging across race, profession, gender, belief, income and other areas (Gittel and Vidal, 1998 and Putnam, 2002 both as cited in Zhang et al. 2011). This increases the likelihood of access to

“fresh information and resources” thought to be helpful in providing economic advancement (Briggs, 1998 and Putnam, 2002 both as cited in Zhang et al. 2011, p. 122).

Ennis and West Case Study - Measuring Social Networking

Ennis and West (2013) conducted a case study regarding whether social network analysis, as a research methodology, is useful as a tool to aid in community development. Their analysis evaluated the connections between individuals and allowed for an assessment of social structures.

The Ennis and West (2013) study evaluated relationships of individual and local networks at the beginning and end of a community development project. They utilized a snowball sampling technique starting with active meeting participants for the program, and then asked them to refer other people with whom they communicate in the area. Individuals were asked if they consider this person a close friend or family member, which resulted in classifying the relationship as a strong tie, or if not a close relationship, it was labeled as a weak tie. This permitted the strengths of communication relationships to be assessed. This study was conducted both before and after the community development project occurred.

Their study considered network structure and composition:

The structure of the network includes network size, connectedness of the actors, concentration or dispersion of actors, accessibility of the network, degree of clustering in the network and the heterogeneity or homogeneity of the actors (Wasserman and Faust, 1994 in Ennis and West, 2013 p.44)

Their project goals included increasing connections between cultural groups, so their pre-project and post-project social network analysis studies were compared to determine project success. Diagrams of the networks were created both times they were analyzed, and information was provided in both descriptive statistical and diagrammatic forms. Strong ties were depicted using a thick line, weak ties were depicted using a thin line (Ennis and West, 2013).

The Ennis and West social network structure evaluation process included “network size (the number of actors and the number of ties); the components of the network (the sub-groups or sections of the network) and their linkages; and the cohesion of the network, which is measured via the average degree (number of connections) of network actors” (Ennis and West, 2013 p.45).

Evaluating who was and was not included in the network diagrams was insightful to Ennis and West (2013). Further, they observed that while there were connections between individuals in their study community, there were no connections to others within the larger suburb that the community was located, indicating that the bridging connections were lacking. To foster enhancing these connections, the project brought people together into the same space and worked toward helping individuals understand each other, sharing both knowledge and culture. The post-project network assessment indicated that this was a successful venture, with an increase in bridging components as well as average degree or number of ties, indicating an increase in cohesiveness (Ennis and West, 2013).

Ennis and West proved through their study that the changing network structure, due to a community development project, can be evaluated effectively using social network analysis both before starting and after the project's completion. It provides an effective way to visualize the changes in relationships between network actors (Ennis and West, 2013).

Spiraling of Community Capitals

Building up a few key community capitals, through public and private intervention can lead to a “spiraling up” of capitals, especially when the approach is a collaborative, integrated approach which systematically benefits the community capitals. Emery and Flora (2006) “identify critical investments in social capital as the entry point for community change” (p. 20).

Emery and Flora (2006) note that a waning financial capital can lead to a downward spiral. Losing an industry, or in Emerado's case, the decreasing size of the Air Force Base, can have tolls on political capital, creating additional losses in human and social capitals, resulting in more and more despair, as each loss and deficiency leads to other losses and deficiencies (Emery and Flora, 2006). Beaulieu, et al. (2010) discusses how elements such as financial disparities (or financial capital) impact disaster preparedness, which is an important element in retaining existing community capitals.

Subsection C: Methodology - Background Research

Ethnographic Study

Onyx and Leonard (2010) touch on the importance of social networks in their discussion of five case studies as they explored the complexity theory and emergent leadership issues.

Their analysis featured five case study communities around the world with populations of 2,000 people or less. Five to fifteen informants were interviewed in each community, representing a variety of education, age and gender backgrounds, as well as a variety of social roles, identified using snowball sampling. Interviews were approximately one hour each, with a flexible open-ended interview process. Data collected also included census and web page information, observations of the community, field sites, houses and community events. Onyx and Leonard (2010) seem to have found this to be an ideal structure for modeling, although the article does not discuss methodology in great detail.

Snowball Sampling Methodology

The *snowball sampling* technique is uniquely suited to the study of social networks. Snowball sampling was initially developed by Coleman (1958-1959) and Goodman (1961) (as referenced by Heckathorn, 2011). Snowball sampling was originally created “as a means for studying the structure of social networks (Heckathorn, 2011, p. 355).” Heckathorn further states that the secondary, and later use of snowball sampling was to create a convenient way to study populations that were harder to contact, such as ethnic populations or other groups that limited access to information, often due to a perceived stigma associated with group membership, such as drug users or individuals with human immunodeficiency virus (HIV). Another method utilized for reaching hard to contact individuals is *respondent-driven-sampling (RDS)* which focuses more on providing good estimates than on the convenience factor, while still utilizing a variation of snowball sampling (Hackathorn, 2011).

Snowball sampling generally begins with one informant or one set of informants interviewed or surveyed individually. The *convenience sample* method of snowball sampling implies that instead of utilizing a random sample, a specifically selected individual or set of individuals begins to be interviewed. In addition to responding to the survey questions, the individual is asked to name, or essentially recruit additional individuals to be surveyed. The initial individual(s) interviewed is referred to as *wave 0*. Anyone recruited by the initial, wave 0, respondents are referred to as wave 1. Wave 1 recruits wave 2 individuals, and this process continues until a previously specified number of respondents are interviewed or until *equilibrium* is reached, depending on the methodology proposed. Equilibrium is thought to be the point

when enough individuals have been included in the sample to sufficiently represent the overall population.

The convenience sample method can create questions regarding the reliability of the sample to represent the entire population. By utilizing a larger number of individuals or continuing to conduct interviews until equilibrium is reached, it can reduce the uncertainties associated with convenience sampling.

Grounded Theory

Grounded theory methods are flexible, systematic guidelines that determine how data gets collected and analyzed. Data is the foundation of the theory and the actual analysis of the data creates the concepts that get developed. The theory is intended to complement other qualitative data analysis approaches (Charmaz, 2013).

Grounded theory starts with the data, including evaluating what is observed, the interactions that occur and the materials gathered. In addition to focusing on what is said, what is observed or going on during the interview is also emphasized. After data is acquired, it is coded. Qualitative “coding distills data, sorts them, and gives us a handle for making comparisons with other segments of data (Charmaz, 2013, p. 3).” Instead of coding all of the data at the end of the data gathering, the data gets coded while additional data is still being acquired (Charmaz, 2013).

Making comparisons between the different interviews helps to understand the data. Interesting elements and frequently-observed codes can serve as a point for beginning analysis and further data collection. Preliminary analytic notes about the codes or thoughts about data can be written about in memos. Memos are basically a somewhat informal way to work through thoughts and connections regarding the data. Categories get developed with the assistance of the earlier coding and memo writing. Categories become more theoretical as the data gets analyzed at higher levels (Charmaz, 2013).

Glossary of Terms

For the purposes of this document, the terms and definitions are provided below.

Actor (or Node): an individual person or an organization within a network.

Bonding: Bonding refers to the linkages between strong ties. In more simple terms, it refers to relationships between close friends and family members, helpful for providing material and emotional support on a daily basis (Zhang, et al. 2011).

Bridging: When an individual has a network of acquaintances (weak ties), who generally do not know each other, but each have their own cluster of close friends, the (weak tie) link between the friends becomes the crucial bridge between the individuals in the two clusters of friends. It forms a social structure that links individuals who would otherwise not be linked “Weak ties provide people with access to information and resources beyond those available in their own social circle” (Granovetter, 1983, p. 209).

Centrality: “A measure of a node’s position in a network” (Reid and Smith, 2009, p. 51).

Chain-Referral Sampling: Chain referral sampling is a generic term referring to several types of sampling that link one person to the next (Heckathorn, 2011). The sampling generally begins with a *convenience sample* (Heckathorn, 2011).

Cohesion or cohesiveness: Cohesion is “measured via the average degree (number of connections or linkages) of network actors (Ennis and West, 2013, p. 45)” as well as the level of connectedness between all of the network actors.

Components (of a Network): The subgroups or sections of a network (including all of the network actors and their ties) are the network components (Ennis and West, 2013).

Connections: Connections are the relationships, ties or links that indicate whether and to what degree individuals interact (Ennis and West, 2013).

Convenience Sample: Instead of a random sample, the subjects of the population are intentionally selected. From these initial “seeds,” (wave 0), new subjects are recruited which form wave 1. Wave 2 is recruited by wave 1 (Heckathorn, 2011).

Degree, Average: The mathematical average number of ties for all actors, which indicates cohesiveness of the network (Ennis and West, 2013).

Degree of an Actor: The number of ties coming to or from an actor. The fewest ties one can have is zero. The most ties one can have is one less than the total number of actors, as they would not count their connection to themselves (Wasserman and Faust, 1994 in Ennis and West, 2013).

Density: This compares the actual number of connections in a network to the maximum possible potential connections (Reid and Smith, 2009).

Linkages: See *Ties*.

Network: People and/or organizations linked with each other to exchange information and knowledge (Reid and Smith, 2009).

Network Size: The “number of actors and the number of ties (Ennis and West, 2013, p.45)” indicate network size.

Node: See *Actor*.

Respondent-Driven-Sampling (RDS): Respondent-driven-sampling is a variation of snowball sampling method that was developed incrementally over time in an effort to reduce perceived unknown biases that may develop from *chain-referral sampling* and increase the reliability of the estimates developed as a result of the sampling (Heckathorn, 2011).

Seeds: The initial wave (wave 0) of a *convenience sample*, including individuals specifically selected to interview and recruit additional interview candidates from the intended population (Heckathorn, 2011).

Snowball Sampling: Snowball sampling is a network-based, respondent-driven method of conducting surveys, initially designed to study social networks, but changed over time to also allow study of populations that are hard to reach, contact or identify (Heckathorn, 2011).

Social Capital: Social capital refers to “features of social organization such as networks, norms and social trust that facilitate cooperation for a mutual benefit” and further that “social networks and the associated norms of reciprocity and trustworthiness” (Putnam, 2007 as cited in Zhang, et al. 2011, p. 119).

Social Network Analysis: Social Network Analysis, in its simplest form, refers to how people interact as part of a physical community.

Social Networking: Ennis and West (2013) extensively discuss social networking, including positive connections between people and organizations that enhances dialogue and allows identification of ideas, information and resources.

Strong Ties: Strong ties are close friends. An individual and their close friends would be a dense, closely knit network, where everyone is more likely to be involved socially with one another, “have greater motivation to be of assistance and are typically more easily available (Granovetter, 1983, p. 209).”

Ties (or Linkages): Ties are simply relationships or connections. They are pictorially drawn as lines connecting actors or nodes.

Wave 0, 1, 2...: In chain-referral samples, interviewed individuals are often recruited by someone to be interviewed and included in the research. The initial individuals selected by the researcher are considered “wave 0.” Individuals recruited by the initial individuals are considered “wave 1.” Individuals recruited by “wave 1” individuals are referred to as “wave 2.” There can be any number of waves of individuals surveyed (Heckathorn, 2011).

Weak Ties: Weak ties are comprised of the acquaintances that an individual has, which generally do not socialize with the individual’s other acquaintances, resulting in a low-density network as the relational lines are not connected between the various acquaintances (Granovetter, 1983).

Chapter 3 - Methodology

Introduction

The intent of the study is to conduct a social network analysis of Emerado, a small town in rural North Dakota, to assess the networks and connections within the community as well as how people in the community relate, interact, maintain connections, and get information. The primary research question addressed in this thesis is: *What social networks exist in Emerado, North Dakota, and what role do they play in community development and redevelopment?*

Secondary questions are:

1. *Where are the areas of greatest strength in Emerado's social network?*
2. *What are the characteristics of individuals with the strongest social networks?*
3. *What degree of social network density exists in Emerado?*

The methodology for this ethnographic study is based upon qualitative approaches to research and integrates several types of investigation: 1) collection of background data regarding Emerado, North Dakota; 2) interviews with community member participants and other pertinent individuals; 3) a social network analysis, based on background data and interview results.

Interview questions, especially in the "Networks" section of the interview (question 2a to 2f) attempt to explore who the participants interact with, how frequently they interact, their network size, and the strength of each of their connections (strong or weak ties). The linkages or cohesiveness, measured by the number and types of connections of the network members, were also important to assess. Interview participants' responses help understand the role that social networks and connections (between community members, as well as internal and external organizations) play in community life.

Phases of Work

This study was organized in three phases: Phase 1: Background and Methods; Phase 2: Interviews; and Phase 3 Findings and Analysis.

Phase 1: Background of Methods

Dr. Rakow suggested Emerado as a research topic in December, 2012. A meeting was held with Dr. Lana Rakow of the University of North Dakota (UND) Center for Community Engagement (CCE) in January, 2013 to learn about the community, the project and the Community Connect Forum (CCF) scheduled for April 26, 2014, which was to include an overview of the results of this analysis. The results will be shared; however, the process and methodology are not mandated by Emerado, UND, or the Community Connect Forum.

Dr. Rakow and the researcher attended the July 2, 2013, Emerado Park Commission meeting to discuss this research project and the Community Connect Forum, and get their consent to proceed. Contact information for the Park Commissioners was shared at the meeting for future interview purposes and interview dates were scheduled shortly thereafter.

The initial work included a literature review of published data relevant to the study topics including ethnographies, snowball sampling, and social network analysis, among other topics. An assessment of historic and current data regarding Emerado was also conducted. Census data was evaluated, including the 2010 and the 2000 Census results, noting any trends and values. All review of published literature was conducted prior to beginning the interview process.

Initial Sampling - Snowball Sampling

The multi-step approach of conducting grounded theory research began with initial sampling. This includes the establishment of a sampling criteria before entering the field. This case study primarily utilized a *snowball sampling* technique for identifying interview subjects.

Overview - Research Design

This ethnographic research utilizes grounded theory qualitative analysis largely based on interviews conducted primarily using snowball sampling methods for selecting interview participants. Other data sources were also utilized. Census data was collected for analysis to provide background information. Additional background data, including historical data, were obtained from community libraries and news media to provide background information about the community. Interviews were the most heavily utilized data source.

Phase 2: Interviews

This study utilized one-on-one interviews for data acquisition. The interview process and question list was developed, with consultations between Professor Stephanie Rolley, Kansas State University, and Dr. Lana Rakow, UND CCE. In the initial development of the questions, a preliminary assessment of journal articles indicated some of the types of questions were useful. Ennis and West (2013) discuss assessing variables such as gender, age, profession, family status, cultural background, rental or ownership housing status, and geography (likely to include locations for home and work, as well as quantity of years in the community and prior residency location). Ennis and West (2013) also discussed questions more specific to the topic at hand, such as the way that people, organizations and/or other entities are connected, which provided further inspiration for the interview questions. The objective was to develop a list of open-ended questions that touched on all of the key study areas, yet allowed respondents to freely discuss how they interact with others, while also providing enough structure to ensure all of the topic areas got covered.

Research Instrument

All of the interviews included the same basic questions. The interview question list is included as Attachment A. A series of questions were identified that encourage the participant to discuss their duration of time and purpose for moving to Emerado, their sources of information, degree of familiarity and reliance on technology to keep connected with others and informed of what is going on in the community. Other questions asked about community issues and who makes change happen or prevents change from happening within the community. This question provides the interviewer with additional information regarding their familiarity and involvement in the community. Several questions work toward addressing the research question of the project, to evaluate the extent that formal and informal social networks of Emerado, North Dakota, contribute to its viability and health.

More specifically, the interview questions included in Appendix A generally fit into the following categories with the enumerated list corresponding to the interview questions: 1) demographic information; 2) internal and external network participation, perceived patterns for participation and communication within and external to groups; 3) communication methods, technology and community information dispersal; 4) key community concerns including

strengths and weaknesses; 5) groups of influence; 6) connections to groups of influence; 7) determination of who has an influence in the community; and, 8) suggestions for others to interview.

As mentioned previously, the interview questions were crafted with the assistance of Professor Rolley and Dr. Rakow. The questions were determined based on the need to acquire information pertinent to the research intent of the project: to evaluate the extent that formal and informal social networks of Emerado, North Dakota, contribute to its viability and health with additional questions as necessary to help understand the role that social networks and connections (between community members, as well as internal and external organizations) play in community development and redevelopment. Some background information questions that may have been helpful, such as gender, age, profession, family status, cultural background, and housing ownership/rental status were left off the survey, as it was thought that most of that kind of information would be evident during the interview. Even if it was not, it was not important enough to warrant lengthening the interviews. These personal background questions were largely answered, directly or indirectly, in the first question, which is an open-ended question asking them, “Can you tell me a little about yourself and how you came to live (or work) in Emerado?”

Interview Process

The interview process was standardized. Interviews were generally scheduled one to ten days in advance of the interview. The approved IRB consent form was provided to the interviewee prior to the start of the interview. Each form was signed by the interviewee and retained by the author.

It was initially thought that interviewing approximately 20 individuals for about 30 minutes each would be ideal. Shorter interviews seem too short to conduct the interview after spending some of the time developing rapport and obtaining sufficient trust necessary for acquiring full and complete information. This length and quantity of interviews provided a balance between quantity of interviews and amount of time per interview. As it turned out, most of the interviews were about an hour in length, except when the individuals had no real connections with organizations, in which case the interview was much shorter. Instead of the originally planned 20 interviews, a total of 25 interviews occurred.

Of the 25 interviews, 14 interviews were conducted between July, 2013 and late October, 2013, beginning with interviewing the Emerado Park District members individually utilizing the snowball sampling methodology (Heckathorn, 2011) for selecting interviewees. The remaining nine interviews were held in February, 2014. Due to equipment issues, only 12 of the interviews were recorded. The remaining 13 interviews were written in summary form, with direct quotes as often as possible, although frequently the pronouns were left out of the notes while they were being written. Following each interview, the author typed the notes or transcribed the audio recordings prior to beginning the coding process.

The interview results are to be kept confidential, according to the terms of IRB approval and the information provided to interviewees. As such, the transcribed interviews and interview notes will be retained by the researcher in accordance with the required retention policy outlined in the IRB approval.

Phase 3: Findings and Analysis

At the conclusion of the second phase of this project, any remaining coding, memo writing, and category development were finalized. The information obtained forms the basis of Chapter 4 (Findings).

Coding

A total of 25 interviews were conducted. After the first 15 interviews were conducted, hand-written notes from the interviews were typed to allow for easier reference and assessment. At this point the initial coding was conducted, analyzing small chunks of text and naming each of them to allow quick classification, review and analysis of the data. The second phase of interviews occurred during a one-week time span, and all of those interviews were typed and coded shortly thereafter. It was helpful having two phases of interviews to allow assessment and minor modifications to be made in the interview process to help ensure any data gaps were clarified and resolved.

The interviews were coded on a line-by-line basis using the grounded theory methods generally following the process outlined by Charmaz (2013). Coding takes apart larger data segments, adds a concise name to the data, and provides a way of organizing information obtained during the interview into small bits of information that can be organized and cataloged. Coding allowed data to be efficiently summarized, sorted, compared and analyzed. Seeing small

phrase summaries helped analyze the data efficiently. Data was compared with data, data was compared with codes, and codes were compared with codes. Comparisons were made between the various interviews, which aided in the assessment of the data. Preliminary thoughts regarding the codes and comparisons were written into informal memos to spur the analytical evaluation process. Preliminary or tentative categories were created at this point. Categories were developed based on previously created codes and memos, allowing data analysis to be more theoretical. The list of codes developed was consolidated after multiple times going through coding. The consolidated list of codes is included as Attachment B.

Coding Categories

Based upon the interview questions and data responses, several key categories emerged: a.) change making, b.) communication tools, c.) connections (friends and informal groups), d.) formal organizations and participation patterns, and e.) strengths and weaknesses. Subcategories also began to emerge.

Part A. Change Making

Change making/preventing change included 1) positive change (doing good job/satisfied, networking possibilities, people making change happen, and recognizes need for change); 2) Organizations Impacting Change (with a list of the organizations); 3) No change needed; 4) Preventing Change; and, finally, 5) Mayor/election/police comments.

Part B. Communication Tools

This section included a listing of various communication tools, in an attempt to gauge the degree of usefulness regarding each of the technology modes. Fliers, especially in the post office were noted as quite helpful, along with notices in the Grand Forks and/or Larimore newspapers. Overall, most individuals did not feel there were enough methods for finding out about community events. Cell phones were a dominant technology, followed by internet and email, although Facebook received mixed reviews, with many interviewees striving to avoid Facebook as much as possible. The City has a new Facebook page to inform residents of community updates. These results clearly indicate that the Facebook method will not be able to be relied upon to reach all residents. Many interviewees prefer to maintain as direct of communication methods as possible, preferring in-person visits, followed often by phone calls. Although texts

were noted as helpful, they were frequently not the dominant preferred method of communication.

Part C. Informal Connections

This section included a general element noting the connectedness or lack of connections displayed by an individual. There was a subsection related to friendships and acquaintances, but it is difficult to rely on this data as the related question did not always yield a clear response. This section also included a listing of the groups or crowds. Finally, under the subheading of people is the interview suggestions list.

Part D. Formal Organizations and Participation Patterns

The first part of this section pertains to organizations, both local and outside of Emerado. Participation patterns and codes related to age and group affiliation that affect participation are included in this section. Comments related to nothing going on in Emerado, and wishes that others would participate more as well as acknowledgements of time constraints to participation are included in this section.

Part E. Strengths and Weaknesses

This included a variety of subheadings and subcategories. This includes strengths, weaknesses, negative attitudes and elements that contribute to or detract from developing a sense of place. Many individuals struggled to think of anything positive to say about the community, leading to the development of the negative attitude category to help track these responses.

Memo Writing

Memo writing occurs after data collection but before beginning to write the paper. It allows analysis of any and all ideas regarding created codes. It helps to start the analysis process, by allowing early, somewhat unstructured, analysis, thought and writing about the data.

After developing codes, memos allow for comparisons to be made, thought through and written about. Memos were drafted regarding data, codes, and categories, allowing any number of comparisons. Data was compared to data and codes were compared to codes, along with other comparisons. Relationships between various elements were explored and analyzed. Memos allowed for quickly writing down thoughts and ideas to help clarify ideas and connections while writing. Memos worked well to help identify and flesh out concepts and connectedness of

elements. They also helped to identify areas that needed more research. Memo writing was conducted following the guidelines of Charmaz (2013).

Social Network Analysis and Visualization Software

The software, Sentinel Visualizer, by FMS Advanced Systems Group was utilized to create a Social Network Analysis Visualization. Social network nodes, including individuals, organizations and businesses were entered into the program. Relationships or links were also cataloged in conjunction with the applicable nodes. Each of the relationships was listed as a non-directional link. The diagrams were primarily analyzed in a multiple circles format, which utilizes a core and periphery structure, where the core is the “dominant central cluster (Hoppe and Reinelt, 2010, p. 602)” and the periphery has clusters of nodes with a bridging node in the center of the circle of clustered links (Hoppe and Reinelt, 2010).

Sentinel Visualizer provides calculations for degree centrality, betweenness centrality, closeness centrality and Eigenvalue, each of which are utilized in this document. Each of these concepts are introduced in Chapter 2. The values and analysis for each set of calculations is included in Chapter 4.

Ethical Considerations:

Before beginning the study, an application for review was submitted by the Institutional Review Board of Kansas State University. Data collection did not begin until all parties agreed that there was minimal risk to participants.

Initial contact with most of the Emerado Park District was at their Park District meeting on July 2, 2013. The project was presented at that time, and individuals were informed that if it was okay with them, they would be contacted to potentially set up an interview. Most of the members set up future interview dates and times during the meeting, and interviews occurred during the weeks following. Similarly, City Council members and various members of the audience of the City Council meeting on February 3, 2014, similarly agreed, while at the meeting, to be interviewed at a later date. However, the individuals were under no obligation to agree or set an interview time at the meeting.

Potential interviewees were told that any information obtained during the interviews would be analyzed, and when documented would not be attributed to the speaker, so their information would be protected. Ideally, no one would know the names of the individuals

interviewed, and this information was protected to the extent possible. It was difficult to keep this information private when interviewees signed up at public meetings. However, signing up did not guarantee that an individual was interviewed, as at least one individual that signed up at the meeting did not actually get interviewed for scheduling reasons. Additionally, they could have decided not to complete the interview at any time.

Prior to each interview conducted, each potential interviewee was given information verbally about the study and provided with an informed consent form, which included written documentation regarding the study. Any questions were answered by the researcher prior to asking for consent. The study was not started until the consent document was signed. All potential interviewees that began the interview process readily agreed to sign the informed consent form. One individual declined to answer several questions during the interview, as permitted by the study protocol. On occasion, several interviewees asked for confirmation that the information would remain confidential before sharing some portions of information. A few individuals made offhanded comments that they did not want to see a particular comment they made in print. In both of these instances, they were informed that any information provided would not be attributable to the speaker, and that data would be released in aggregate form.

Methodology Summary

Ethnographic studies rely upon a range of qualitative and quantitative methods specific to the place and people being studied. A large portion of the qualitative methods utilized follow methods outlined in Charmaz (2013), especially for the interview data. Other data were also utilized including Census data and peer-reviewed journals.

Chapter 4 - Findings

Findings Introduction

The intent of the study is to conduct a social network analysis of Emerado, a small town in rural North Dakota, to assess the networks and connections within the community as well as how people in the community relate, interact, maintain connections, and get information. The primary research question addressed in this thesis is: *What social networks exist in Emerado, North Dakota, and what role do they play in community development and redevelopment.*

Secondary questions are:

1. *Where are the areas of greatest strength in Emerado's social network?*
2. *What are the characteristics of those with the strongest social networks?*
3. *What degree of social network density exists in Emerado?*

It is important to note that this study incorporates individuals that feel part of Emerado, whether they work there, go to church there, pick up their mail or their kids from school there before going back home to their house in the country, or actually live in or near the town. Also, the terms, city, community and town all refer to Emerado. The social network of Emerado fluctuates based on specific individuals interacting in the community and current community topics impacting the individuals. The social network of Emerado is affected not only by individuals living in the city limits, but also by individuals like farmers who feel part of the community; Air Force Base employees and families who might live on base but also work as volunteer firefighters in Emerado; or, Emerado business owners who might live a half hour away from Emerado.

In order to answer the sub-questions, one must define strength as it pertains to social networks. Strength of network can be described in a number of ways, including bridging and bonding capital. Mathematically, network strength can be calculated in network density (total connections as a portion of the total possible connections), degree centrality (most direct connections), betweenness centrality (providing connections between groups), Eigenvalue (overall/positional centrality), and closeness (length of shortest path to other entities). These calculations will be used to answer the research questions.

Part 1 of the Research Question - What social networks exist in Emerado, North Dakota?

Group and Organization Overview

Emerado has a variety of formal organizations and informal groups that allow residents to socialize, interact, and have the opportunity to create changes in the community. In Emerado, some groups and organizations interact well together. Other groups and organizations will not interact with other organizations unless there is a neutralizing element in place. This division creates a rift in the community that makes it difficult for the community to interact in a positive manner.

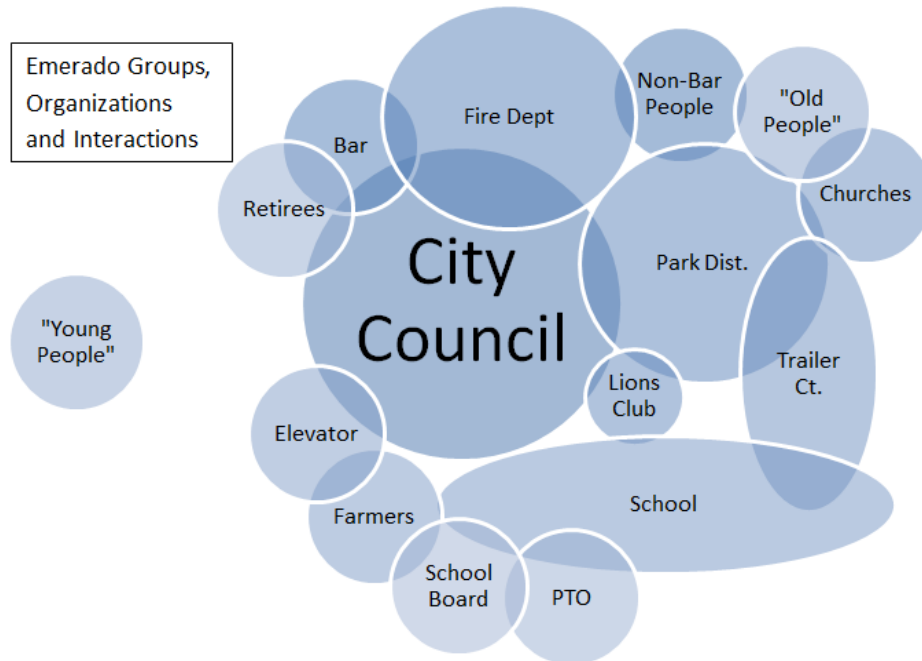
The groups and organizations in Emerado are represented graphically in Figure 4.1. The graphic is intended to pictorially represent organizational alignments, interactions and incompatibilities. With some groups, it was difficult to tell exactly where it fit best, such as the Old Town people, as they are made up of individuals of a variety of backgrounds.

All of the categories were developed from interview results. Residents listed and described organizations in which they interacted. Usually the information related to the informal groups came from interviewee thoughts expressed during responses to the question asking their perceptions on participation patterns in the community. An overview of the different organizations and groups in which Emerado residents interact is provided on the following pages.

Formal Organizations

Formal organizations generally have memberships and meetings, and the organizations as well as their members are typically fairly easy to define. Interviewees generally listed all of the organizations they were affiliated with, allowing a fairly accurate list of organizations to be developed and included in the Social Network Analysis. Formal organizations are very different from informal groups. Participation in formal organizations can include having a position of power, such as board membership, chairing an organization, or simply having membership in the organization. Interviewees noted their involvement in organizations both inside and out of Emerado.

Figure 4.1 Emerado Organizations, Groups and Connections



Note: This graphic was created based on the researcher’s interpretation using interview results. The accuracy of the resulting graphic was confirmed by several interviewees.

Organizations Affiliated with Emerado

The formal organizations that exist in Emerado are as follows: The Emerado City Council, the Emerado Park District Board, the Emerado Volunteer Fire Department, the Emerado-Arvilla Lions Club, several churches and associated church boards, and the school, School Board, and Parent Teacher Organization (PTO). Lesser known organizations include an Emerado homemakers group associated with the County Extension office, a Red Hatters group and a Lioness group that may or may not continue to exist.

Two of the most influential organizations in Emerado include the City Council and the Park Board, both of which are elected positions. Other organizations, such as the fire department are held in high esteem by community members. The fire department is held in such high esteem that it can be a neutralizing force for groups of individuals that would otherwise avoid events attended by group members whom they choose not to interact. The school board and PTO were

rarely mentioned by individuals outside of those organizations, yet they seem to have the biggest recent track history of success in setting and accomplishing goals.

Some organizations, such as the City Council and Park District require City residency status. The School District and Fire Department generally requires or implies district residency status but not City residency status for their associated organizations. Other organizations, such as the churches, Lions, and Red Hatters do not require residency.

Organizations Outside Emerado

Organizations in which interviewees participate that are located outside of Emerado included bowling leagues (either on the Air Force Base or in Grand Forks); golf club membership (Grand Forks); church and church board membership (outside of Emerado, frequently in Grand Forks).

These organizations serve a valuable role for Emerado residents as they provide an opportunity to meet and interact with people outside of the individuals living in Emerado, who have different perspectives, different frames of reference, different knowledge bases and sources of information. These types of relationships allow individuals to learn about things that they might not otherwise learn or know about, and can provide information that would be able to provide a positive impact on their economic status, such as a lead regarding a new job or other opportunity.

These types of relationships are generally classified as weak ties, although the name is somewhat deceiving because they can have some of the biggest long-term impacts for individuals. Strong communities have lots of individuals who have lots of different weak ties. Weak ties allow new information to be obtained by community residents. Individuals with information from their weak ties can share that information with friends and other community members, expanding the depth of knowledge within the community.

Weak tie contacts themselves are a benefit to the community, as they help to form a resource network. For example, if someone is having difficulties, such as a banking issue, it may help their situation if their neighbor bowls with someone who is a banker in Grand Forks. That neighbor would potentially be able to contact the banker and get insight or assistance with what to do regarding their issue. This is just one example. Job leads, scholarship opportunities, advice, and other information commonly result from weak ties in social networks.

Informal Groups

In addition to the formal organizations noted above, there are also several informal groups or categories of people, based more on whether people feel part of or associate with a particular category or group. There is generally no “membership” requirement, as they are informal in nature. Similar to many Emerado organizations, there is no actual locational or city residency requirement affecting the groups or categories in any way, as long as they feel they are associated with Emerado.

The concept of informal groups was developed through interviewee responses to the interview question regarding whether there were patterns to the groups and networks that exist and who participates (Appendix A, question 2c). Groups, or “crowds” as some groups might be known, are informal and somewhat nebulous. As such, they were much more difficult to define and attribute to specific individuals. The fact that the word “crowd” (such as the bar crowd) could be substituted for “group” further substantiates that formal membership is not present. Generally, individuals did not list the groups with which they identified.

The concept of groups generally pertains to the informal alignment of individuals that shapes how they act and interact with others in the community. Based on their alignment into groups or crowds, one can make some predictions as to how they will interact or mix with others from the same or different groups or their perspectives in the community, based on how others with similar group alignments interact.

It is somewhat difficult to identify which individuals fit in each group, but since some of the groups are location, age or work-status dependent, it helps to narrow down the applicable categories and perspectives. The more difficult to define groups are the “non-bar” group and the old town site group, both of which lack a gathering location and are more of a mindset than anything else. Determining which individuals fit in which group, if any, is even more complicated given the overlapping nature of some of the groups. Inclusion in one group sometimes allows assumptions to be made regarding whether they would likely be in another similar or opposite perspective group.

Accurately defining the status of one individual in relation to one or more informal groups is less important than the understanding that the group perspectives exist, and shape how people interact. While one cannot predict how individuals will always act, one can make some

educated guesses regarding how individuals might interact and also interpretations as to why they previously acted or interacted in particular ways based on their perceived group alignment.

These generalizations do not apply to everyone in every situation. However, they were formed as a result of observations made by interviewees regarding how they and fellow community members generally act or interact. Generally the same information was echoed by many interviewees in one form or another during their individual interviews, allowing the group classifications to be conceptually identified and solidified.

Groups Affiliated with Emerado

The groups of people affiliated with Emerado are listed below. Groups are numbered for purposes of clearly identifying them as separate entities and the numbering/sequence has no relevance to the groups themselves.

Groups/categories include: (1) the bar crowd, including Johnny's Bar Patrons; (2) non-bar people (3) trailer court people (living in Emerado's trailer court); (4) retirees; (5) young people (approximately under 40 years old, with and without families); (6) older people (the starting age for this group is debatable, but seems generally earlier than retirement age); (7) old town site people; and, (8) farmers.

Each of these groups have fairly distinct people that fit in the group, although like any group or category, there is some overlap where members fit into more than one classification. Interviewees generally did not identify the groups that they are part of, although usually it can be inferred through the interviewee or by another interviewee. Who is and is not part of a group is less important than the groups informally exist, shape the community and affect community member interactions. Some of the groups have a "place" that they are associated with, like the "bar crowd." Other groups, such as the "non-bar" group or the "young people" are distinguished by presence or absence of specific criteria, such as age or avoidance of interaction with the "bar crowd."

As many interviewees attested, there is not a lot to do in Emerado, so many people "meet at the bar (Interviewee 10)" creating the "bar crowd" group (the first group). There can be variations in the bar crowd regarding frequency of visiting the bar, and the degree of drunkenness or avoidance thereof, as some individuals primarily come to socialize. In a community with no real sit-down restaurants (other than Subway and the Dairy Queen), the bar fills a social-interaction gap, providing an opportunity to play games such as bingo or partake in

a Wii bowling tournament with pot luck coordinated by bar patrons. However, what seems like an enjoyable time to one person, might be less appreciated to the next. As a result, there are some individuals in town that refuse to set foot in the bar. This leads to the identification of a “non-bar group,” the second informal group category.

The third group in the list of groups is the “trailer court” group. This group is fairly easy to define, as it consists of people living in Emerado’s trailer court. Individuals who have lived there in the past seem to also identify with this group. The community as a whole does not look very highly upon the trailer court; its aging and somewhat unkempt status; or, its manager. However, past residents generally seem very loyal to the trailer court manager, often expressing interest in trying to help him clean up the park, and praising both his kindness during times of need as well as his responsiveness when problems arose with the housing units.

The trailer park group has a very high transition rate, which makes the otherwise relatively stable community population highly transient. Transition in Emerado is generally most likely to occur in the trailer court, as the rest of the community seems to have a relatively consistent population living in owner-occupied housing. The U.S. Census notes that 57% of Emerado residents between 25 to 34 years of age did not live in Emerado the prior year.

The national average had 85% of all individuals living in the same house one year ago, contrasted with 62% of all Emerado residents living in the same house one year ago. The community has 184 housing units, of which 96 are renter occupied, largely within the trailer court. Further, 230 people of the 414 population of Emerado live in rental housing (2008-2012 American Community Survey).

Interviewed individuals who are aware of school district trends note that the population of the school changes on a daily basis as children move in and out of the school district regularly, creating financial implications related to government funding of the school. The vast majority of Emerado families with school-age children live in the trailer court. According to one interviewee, over half of the students in the school live in the trailer court. The trailer court provides low rent housing, but it also seems to have a higher than normal amount of single parent families. Emerado has 54 households with individuals under age 18. Only 23 households are two-parent families with their own children, 20 households are single-mother families, and 5 households are single-father households, each with their own children. Six households are non-family households with children under age 18.

Not only do these city statistics quantify (at the city level) the interviewee-identified, high degree of transition for trailer park residents, but they also help to understand the low levels of participation by school parents. It seems reasonable that single parent families may have difficulty getting to school events for a variety of reasons, potentially related to work hours, child care for additional children, or other financial or scheduling demands such as desiring to avoid lost wages or gas/transportation costs. When the school wants to make sure they have a good parent turn-out, they provide a free meal and get very high parental participation rates. They reported that the creation of a new Facebook Page, Emerado Community Center, has also helped to increase parental participation rates because of the increased awareness of the community schedules.

Retirees form the fourth group. Quite simply, this group includes Air Force Base retirees. It may also include other retirees, but Air Force Base retirees seem to share a special bond in Emerado. Emerado has been referred to as a “suburb” of the base, by some interviewees, and the community has a very high number of Air Force Base retirees. These individuals often share common perspectives, and frequently socialize or gather together. Retirees seem to feel connected to Emerado because it is so close to the Grand Forks Air Force Base.

The fifth group includes young people, generally age 20 to approximately 40 years old, encompassing approximately 113 individuals (approximately 1/3 of the 313 people age 20 or over in the community). It includes single and married individuals with and without young children. The defining factors of this group are that they are generally either career-focused or focused on young children. Regardless of the distraction or focus, the result is that there is little free time and/or desire to participate in community events. This leaves the bulk of the community work to be done by the 200 individuals age 40 and older.

The sixth group is the “older people”, a term used by community members. This does not only include the age group typically classified as elderly, but rather it seems to include anyone over about age 40 or 50. One individual commented that “older people seem to be the ones who care enough about the community to keep it alive.” What this means is that there are a few older people who are the ones willing to do all of the work for the community. This easily results in burnout, as was noted by several interviewees, especially when the rest of the population does not seem supportive of their efforts.

Additionally, individuals who volunteer for a sustained period of time find that it is difficult to remain excited about volunteering when events get planned that no one comes to participate in or support. Several interviewees commented on the difficulty of getting older individuals to participate. One individual even stated that “older people maybe figure they have done their share and choose not to do more.” Another person said “older people are either too old to participate or don’t want to.”

At least one outsider has been put off by the young age that was referred to as “older” but it seems to make sense that this older people classification would start at a younger age in Emerado for several reasons. First, Air Force Base retirees seem to retire at around that age, and there are many retirees in Emerado, although many of them are working different jobs after retirement from the Air Force. Secondly, one third of adults over age 20 are in the 20 to 40 age group, and two-thirds of all adults over age 20 are in the “age 40 and older” category. However only 11 percent of the population over age 20 is 65 years of age or older, in contrast with a nationwide statistic of 18 percent. This means there are fewer elderly in Emerado.

Related to the “older” age group, is group seven, the “town-site people.” This group includes individuals that think or feel like they are part of the original town of Emerado, or that they lived here before. These individuals feel especially connected to Emerado. However, almost everyone in Emerado moved to Emerado from somewhere else, whether from a nearby community, or in the case of Air Force Base people, they likely came from a further away location. The community is essentially made up of “North Dakota immigrants,” according to one interviewee.

The eighth group is the farmers. Area farmers do not live in Emerado, but feel very closely connected to Emerado. The grain elevator in Emerado is frequented by farmers, not only during harvest season, but for morning coffee too. Many farmers go in and out of the elevator during the span of a business day, but a core group of approximately ten farmers gather every weekday during the down times of the year for morning coffee, stories and news according to one interviewee. Several interviewees noted that farmers can also be seen gathering together at the Cenex station for coffee, especially when rain keeps the farmers out of the fields, although the elevator seems to be the dominant gathering place. In the winter, farmers tend to gather at Johnny’s Bar to play cards. One reason that the elevator might be a dominant gathering place is

that the elevator is a co-op, jointly owned by the farmers, creating a sense of ownership within the community which may in part explain why some farmers feel so connected to Emerado.

Group Interactions and How Groups Impact Community Decisions

The “bar group” and the “non-bar group” make one another distinguishable. Several interviewees reported that non-bar group members are likely to avoid events that they think will have a lot of people in attendance that go to the bar (and vice versa), unless the event is hosted by the Fire Department, which acts as a neutralizing agent. If a similar event, like a pancake feed, were to be held by a group dominated by church-oriented people, most of the bar group would likely not attend, according to interviewees.

In looking for patterns among bar patrons, they are difficult to identify due to the diverse group that partakes of the bar atmosphere. However, perhaps in this case it is easier to define what the bar group members are not, as generally church goers are not typically as affiliated with the bar. Interestingly, several Council members that were recently elected seem to frequent the bar. Their elected status provides an opportunity for this unofficial “bar group” to gain a voice and some legitimacy in Emerado’s local government. If nothing else, it allows others to more clearly understand the perspectives of this group of people, as it becomes more visible to the public through the actions of these elected officials. Ideally, they will not make decisions just based on their affiliation with this group, but in the best interest of the community as a whole, reflecting all of the groups they represent, and keeping in mind the community as a whole. According to some interviewees, the elected officials seem to balance their roles and perspectives well.

Churches are organizations, as they have official membership and governing boards. Church-going status can impact perspectives regarding groups. According to several interviewees, church attendees generally do not associate with the bar or the bar group, even just for socializing, making many church attendees part of the “non-bar group.” The non-bar group strongly avoids going into the bar, and seems to prefer strict enforcement of state and local ordinances, especially those related to driving while intoxicated. Individuals who are in the “bar group” would rather have a law enforcement individual that would promote safety, such as offering to call one’s friend to get a ride arranged before they are given the opportunity to drive, instead of heavy patrolling of the bar parking area and screening patrons who may have been drinking too much.

The police/sheriff issue is such a big concern for Emerado residents that it seems to be a dividing force between bar and non-bar crowds, seemingly reinforcing the separate nature of the two sets of people. In most communities, this might not be as significant an issue, but Emerado has waffled between having a local police officer and having a contract with the Sheriff's Department for a particular Sheriff to be assigned to Emerado to act as a local officer and enforce local regulations. The vacillating between two extremes seems to have drawn an opinion out of most community members, with most everyone choosing a position on an issue that would not likely otherwise warrant such strong positions held by such a large percentage of the community.

Bar patrons generally seem to prefer the Sheriff option, as the prior police officer became more rigid over time in ordinance enforcement, ultimately resulting in rumors regarding whether the Mayor encouraged targeting strict law enforcement for bar patrons. This seems to have been the defining factor on a recent set of elections that removed the longstanding mayor of approximately 12 years from office, and then put him back in office a year later due to a recount/re-election, a process which began after six months of dissatisfaction with the new mayor (by at least some residents). Less than five votes separated each candidate during each election.

The City recently terminated its contract with the Sheriff's office in October 2013, and appointed a new police chief on February 3, 2014. It is interesting to note that the newly appointed police chief was actually the same person that was elected mayor and held the position for a year before the election results were reversed. Although most interviews occurred prior to the police chief appointment, some interviewees supported and were pleased with this decision, while others felt that it just invites small-town drama. Still others were visibly shocked and wondered how particular individuals would respond to the news, especially specifically named individuals strongly opposed (during the mayoral election) to the person who is now the new police chief. Group interaction and dynamics both shape and make community decisions very interesting.

Social Relationships

The 25 individuals interviewed each were asked to list any and all of the people, organizations, and businesses in which they are connected or interacted. Any people or entities

mentioned during the interview in a way that seemed to imply a relationship, resulted in those relationships being added by the researcher to that person's list of relationships.

Any connection mentioned by a person in a relationship was recorded for both parties. If an individual mentioned a business or organization, that was also recorded. Connections could be made with a local person (including other interviewees), a non-local person, a local or non-local organization, and/or a local or non-local business. Each relationship was recorded as one relationship or connection, regardless of the type of interaction, whether friendship, neighbor, business relationship, organizational involvement or interaction with an elected official. Connections were counted as one connection for each non-directional line drawn between two nodes. No node could have a duplicate (or directional) line, but one node could connect to many other nodes. At the completion of this study, there were a total of 159 nodes and 336 connections.

The relationships and extended or distant relationships of each individual can be depicted graphically. Sentinel Visualizer 6 by FMS Advanced Systems Group was utilized to create the network graphics. It allows up to four tiers of network linkages to be shown for each individual entered into the software. What this means is that for each person, there is a set of people in which they personally know and interact. Each of those (Tier 1) people have another set of people in which they interact. When you add the direct links of those (Tier 1) nodes to the diagram, they are called Tier 2 links. Similarly, a third and fourth tier can be added to the graphic. The resulting graphic looks almost like a spider web, depicting the intricate relationship ties woven by community members. The more data that gets added into the software, including both nodes/actors (people, organizations or businesses) and linkages, the easier it is to see which community members have similar, shared (bonding) relationships, and which individuals have (bridging) relationships with individuals that are not commonly known by many of the other community members.

Tier 1 has the greatest amount of influence on each individual as they are direct connections. Tier 2 also has a fair amount of influence. Basically this is the typical, friend of a friend scenario. If you wanted to find something out, you could ask your friends to ask their friends about it. If you knew enough friends from a diverse enough background, or they knew enough friends with the right information, you would likely find out what you needed to know. That is what makes Tier 2 significant. These individuals are relatively easy for the person in

question to access, and they likely have a broader perspective regarding a greater variety of topics than the people the individual personally associates with or knows.

Sometimes when something is important enough for extra effort, Tier 3 relationships may be relied upon, but this is likely not as common. Even though Tiers 3 and 4 provide access to a vast number of people, the inconvenience of accessing these individuals makes it less likely that they will be heavily called upon or relied upon. This makes the significance of relationships in Tiers 1 and 2 more apparent.

Five Social Networks

Reviewing the networks of a few specific individuals in the community will help understand the dynamics of local community networks. The social networks of five individuals will be analyzed in detail. Table 4.1 provides a summary chart illustrating a few key qualities regarding Persons 1-5. The first three people are very connected; the fourth person is moderately connected. The fifth and final person is only connected to one person in the community. The figure uses a color scale where green shading represents likely positive impact to social networking. Orange shading represents moderate or medium impacts are likely. Pink/red represents potential low or negative impacts on social networking.

- #1 Person – This person could be referred to as the “involved newbie.” They are relatively new to the community (under 5 years), but very involved. They know and interact with lots of people regularly, preferably in a face-to-face environment, and are currently a strong local influence.
- #2 Person – This person could be referred to as “regionally involved.” This person is also relatively new to the community (under 10 years). They know and interact with a modest amount of highly-networked people regularly. They are not a strong local influence, but have previously had a strong regional influence. They live outside city limits, but their family is involved with the school board/PTO and the elevator.
- #3 Person – This person could be referred to as “long-term involved.” This person is a long-term resident who is very involved in community, knows and interacts with lots of people regularly, and has had a long-term, strong local

influence. They live outside city limits but still participate in local government in an unofficial capacity.

- #4 Person – This person could be referred to as the “long-term moderate.” They have been in the community for over 20 years. They know a fair number of people in the community, some of which are influential. This person would probably have a similar amount of links and connections as most individuals who are at least somewhat involved and have lived in the community for over ten years. This individual lives outside city limits and owns a local business.
- #5 Person – This is the typical “young person.” They are relatively new to the community. Arguably, this is the least-networked person interviewed. They interact with almost no one in town. They are neighbors to an elected official, who is their primary link to local discussions and interaction.

Table 4.1 Five Individual Networks Overview

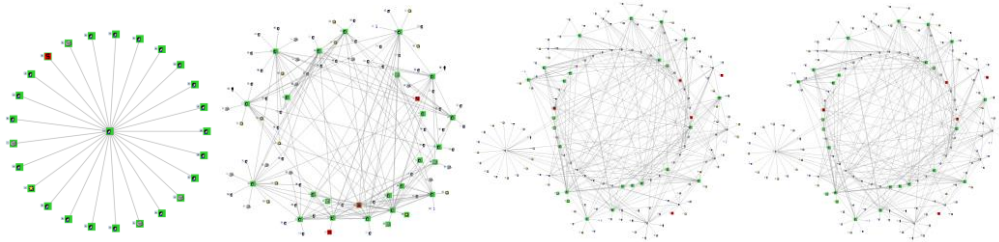
	1 st Line Network	Residency Length	Community Interaction	Local Influence	Regional Involvement
Person 1: Involved Newbie	26	Newer (3 yrs.)	Frequent	High	Low
Person 2: Regionally Involved	25	Moderate (9 yrs.)	Frequent	Moderate	High
Person 3: Long-Term Involved	24	Long-Term	Frequent	High	High
Person 4: Long-Term Moderate	12	Long-Term	Low to Moderate	Low to Moderate	Low
Person 5: “Young Person”	1	Newer (<3 yrs.)	Low	Low	Low

(Green color represents positive impact likely regarding social networking, orange represents moderate or medium, red represents low impact or negative impact on social networking.)

Figures 4.2 to 4.6 provide a series of small graphics allowing quick comparisons between the various tiers for each individual. Additionally, because of the significance of Tier 2, the Tier 2 graphics of all five individuals are shown at a much more readable scale (Figures 4.7-4.12)

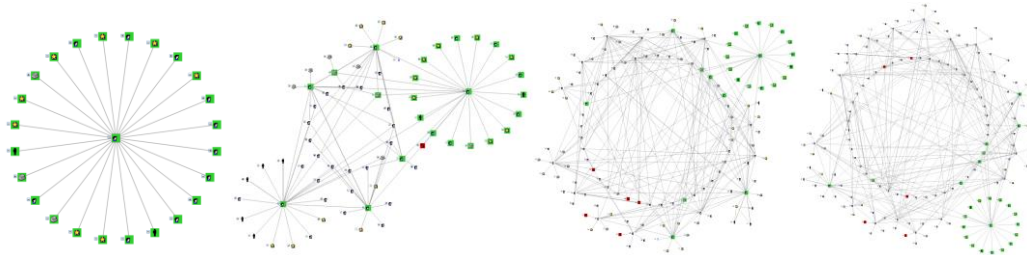
located after the text describing the networks and tiers. Although it is difficult to see in the smaller graphics, the larger graphics depicting Tier 2 show some icons in green. This green color indicates the first tier nodes of the network. Additionally, one of the tier four graphics has been provided at a more readable scale to provide perspective on the entire social network as a whole, since it includes all of the possible nodes (159) and links (336).

Figure 4.2 Person #1 Involved Newbie (high in bonding)



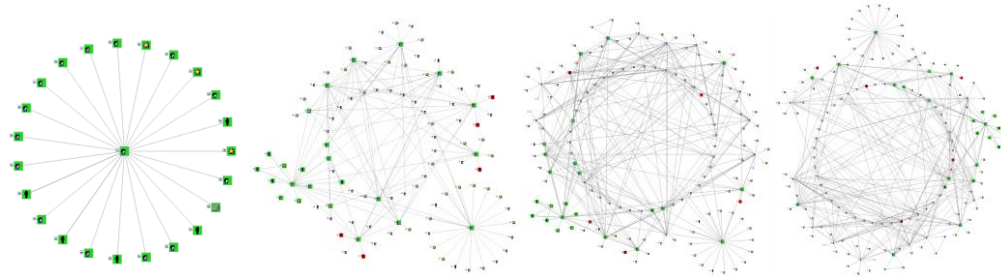
Tier 1	Tier 2	Tier 3	Tier 4
26 nodes	97 nodes	159 nodes	159 nodes
25 links	203 links	331 links	336 links

Figure 4.3 Person #2 Regionally Involved (high in bridging)



Tier 1	Tier 2	Tier 3	Tier 4
25 nodes	70 nodes	137 nodes	159 nodes
24 links	99 links	276 links	336 links

Figure 4.4 Person #3 Long-Term Involved (fairly high in both bridging and bonding)



Tier 1	Tier 2	Tier 3	Tier 4
24 nodes	104 nodes	155 nodes	159 nodes
23 links	177 links	322 links	336 links

Figure 4.5 Person #4 Long-Term Moderate (moderate in bridging and bonding, slightly higher bridging)

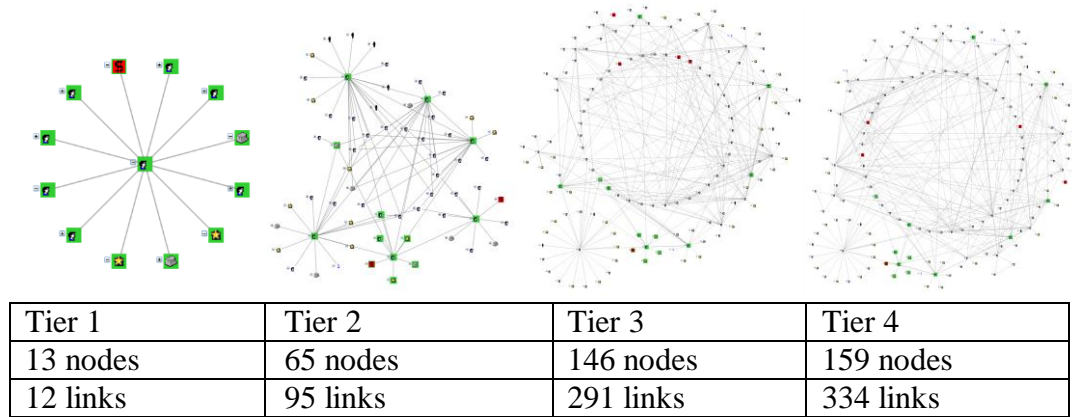
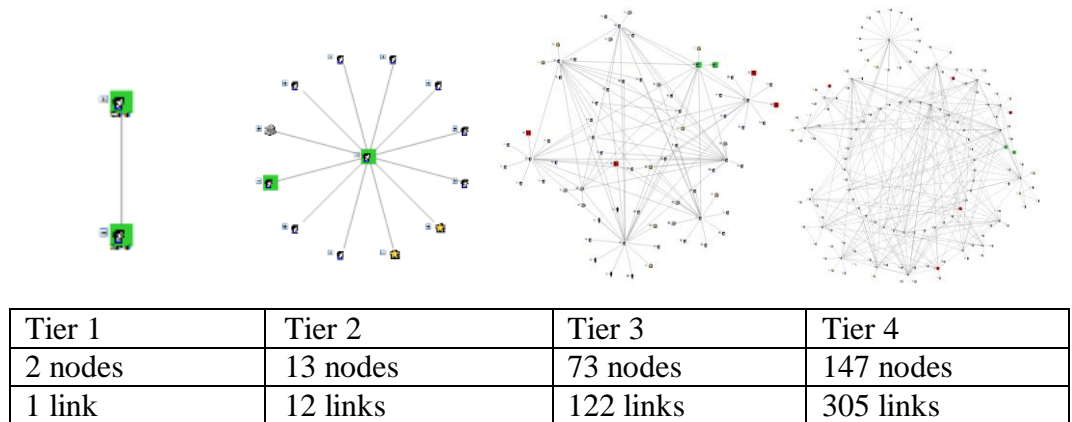


Figure 4.6 Person #5 “Young Person” (low in bridging and bonding)



First Tier

Clearly Persons 1, 2 and 3 have the strongest first tier, by sheer numbers alone (high degree centrality). The first tier of each person’s network, the far left graphic of each row, is similarly high for the first three people, moderate for Person #4 (12 links) and low for person #5 who has only one link. Person #5 did not discuss their network outside the community, and would have had more links if their external links were fully noted. A follow-up set of questions could have been asked after the fact; but due to their limited involvement, if any with the community, the benefit of their extended network to the community is minimal, making fully detailing their network seem less than helpful to the process. For the purposes of this research,

the fact that they only have one local link provides an excellent opportunity to illustrate the benefits of multi-level, social network tiers.

Second Tier

The second tier or second graphic in each row of Figures 4.2 to 4.6 is actually one of the most helpful features to look at to understand the depth and quality of an individual's network. This represents the group of individuals that interact amongst themselves with one node linking them together. Because of the significance of the second tier graphics, an enlarged version of each of the Tier 2 graphics is provided as Figures 4.7 to 4.11.

With the exception of Person #5, generally, each of the tier two graphics have a core/periphery structure which includes one circle that has no central node or actor. This pictorially illustrates that the group of individuals interacts amongst themselves without a key person linking them together (high bonding), and will be referred to as the "core circle." Not everyone in the core circle interacts, but the nodes generally interact without the need for an individual to act as the bridge between them and the rest of the social network.

The periphery is the area around the outside of the core circle that has clusters of nodes. Each circular cluster connects to that cluster's central node. The central node links to one or more nodes in the core circle. The nodes in the cluster around a central node do not typically know any or many other nodes, except the link in the middle of their circle, indicating that they are likely a weak link, providing valuable bridging social capital.

The central node of the exterior circles typically would be able to be depicted as part of the core circle (the circle with no central node), except that it would cause the graphic to lose the pictorial representation of the node's external network links. By looking closely you will generally see that the central nodes are fairly well connected to the other nodes in the large core circle and the central nodes of other smaller circles. This makes the node in the center of the cluster a bridge between the cluster and the core circle.

Stronger and better connected second tiers make the network less susceptible to breaking down if one or several people move out of the community or leave the network. For example, if the node in the center of a periphery cluster moved out of the network, they would potentially completely disconnect the cluster from the larger social network. A high-bridging network (like Person #2, "Regionally Involved" displays in Figures 4.3 and 4.8) provides more potential long-term economic benefits, even though they create a greater risk for breaking down the network if

they left. A person with a high-bonding social network (like Person #1, “Involved Newbie”) creates less risk of breaking down the network if they left, because of fewer clusters and links bridged by only this individual (Figures 4.2 and 4.7). However, they also provide less economic benefit to the community than if their nodes were high in bridging capital. Ten or twenty people could be removed from the second tier network of Person #1 and it would still visually appear similar. Removing ten or twenty people from the second tier of Person #2 (“Regionally Involved” – Figures 4.3 and 4.8) and the Tier 2 graphic would likely cause the graphic and the network to be highly broken down. Networks that are higher in bonding capital are more easily able to withstand shocks, or removals of people from the network and community.

Person #1 – Tier 2 (“Involved Newbie”)

Person #1 (“Involved Newbie”) clearly knows a lot of people within the community, as their second tier appears to be almost as complete as their third and fourth tiers (Figures 4.2 and 4.7). It is very well developed, with a fairly large, circle of people that more or less know each other and interact regularly (represented by the very large circle) without the need for someone to link or bridge the individuals together. This indicates that this individual has a high degree of bonding social capital. There were also quite a few individuals depicted outside the large circle with smaller nodes encircling their node. This indicates that Person #1 knows quite a few people who have networks that include a lot of nodes external to the core circle of people that interact with each other.

Person #2 – Tier 2 (“Regionally Involved”)

Person #2 (“Regionally Involved”) has a very interesting graphic for their second tier (Figures 4.3 and 4.8). They have lived in the community a moderate length of time (approximately 9 years) and live and work outside of city limits, so they do not have as many highly meshed local relationships. They also do not operate in the same circle as many of the others interviewed, so they are lacking the typical large core circle of individuals in their second tier. Their core circle is actually smaller than some of their exterior/periphery clusters. This means that this individual’s network is more valuable to the community because they have linkages with people who interact outside of the core circle of community members, meaning they know people who have access to different information and have different perspectives. This makes Person #2 high in bridging social capital, when compared to other community members.

The second tier of Person #2 has fewer nodes than person #1 (“Involved Newbie”), but because a large portion of the nodes are individuals with strong networks, they link to almost the entire community by their third tier, lacking links to just 21 possible nodes. Person #2 (“Regionally Involved”) has the most dramatic increase in numbers between their second and third tier, highlighting the strength of the networks of their closest linked nodes. The node in the middle of the bottom left circle of nodes for Person #2 is actually Person #3 (“Long-Term Involved”).

Person #3 – Tier 2 (“Long-Term Involved”)

Person #3 has had a long-term, high degree of influence in the community. They have a very strong core group of local people that all know each other and interact together, as signified by the moderately sized, well developed middle circle (Figures 4.4 and 4.9). Person #3’s large circle is not quite as large as Person #1, but Person #3 does have more well-developed smaller clusters surrounding their larger circle, indicating that a lot of their Tier 1 relationships are with people who are external or are less connected with others from Emerado, provide bridging social capital. This seems to indicate that Person #3 has a high degree of both bridging and bonding social capital. The person in the bottom right corner of the second tier of Person #3 is actually Person #2 (“Regionally Involved”).

Person #4 – Tier 2 (“Long-Term Moderate”)

Person #4 seems to have a similar or slightly more developed social network than a typical resident who has lived in the community 10 years or so, and knows a few local people including at least a few well-networked people. This particular individual is a business owner, which may give them somewhat of a social networking advantage over a typical resident. As shown in Figures 4.5 and 4.10, Person #4 has a small middle circle for Tier 2 (with no central node), indicating that they have some links with people who interact regularly (moderate bonding). They have several outside clusters of people who have links outside the main circle of people who interact (moderate bridging).

Person #5 – Tier 2 (“Young Person”)

Person #5 is the least linked of all of the interviewed individuals. They have only one local link in the community (Figure 4.6). Fortunately, that linked person knows quite a few

people, so the second tier of Person #5 (Figures 4.6 and 4. 11) is similar to most people's first tiers. The graphic for Person #5 is probably representative of what would be depicted for a large portion of young adult community members who choose not to get involved in the community, although if they do not have any highly-networked local contacts, their network would never expand as thoroughly as the network of Person #5. The starting small node nature of Person #5 is probably similar to what a lot of the temporary or transient residents would have for their networks. Since there is a larger percentage of transient individuals in Emerado than in most communities, largely due to the trailer park, this perspective is important to keep in mind.

Third and Fourth Tiers

Essentially, each person has about the same network by about the third level of relationship links, except young people or others who lack contacts. Person #5, even as the least networked person, has about the same network by the fourth level, simply because they know a single, fairly well-networked person as their first level relationship. If Person #5 ("Young Person") only knew other individuals like them, with one or few links, there would be few links to the larger community network. When there are fewer links present each linkage becomes more important.

The third tier of Person #1 and Person #2 are so well-developed that they encompass nearly all of the individuals and links, with only a few additional nodes and networks getting added in the fourth tier. Of the total possible 159 links and 336 relationships, Person #1 (Young Newbie) has 159 nodes and 331 links in Tier 3. Person #4 (Long-Term Involved) has 155 nodes and 322 links, which is also a nearly-complete network, even before Tier 4 networks get added.

Each of the Tier 4 graphics show one very well developed exterior circle outside of the core circle. The node in the middle of the large, exterior cluster is Person #2 ("Regionally Involved"). This perspective clearly depicts their strong, externally-linked network.

Figure 4.7 Tier 2 of Person #1 “Involved Newbie” (97 nodes, 203 links)

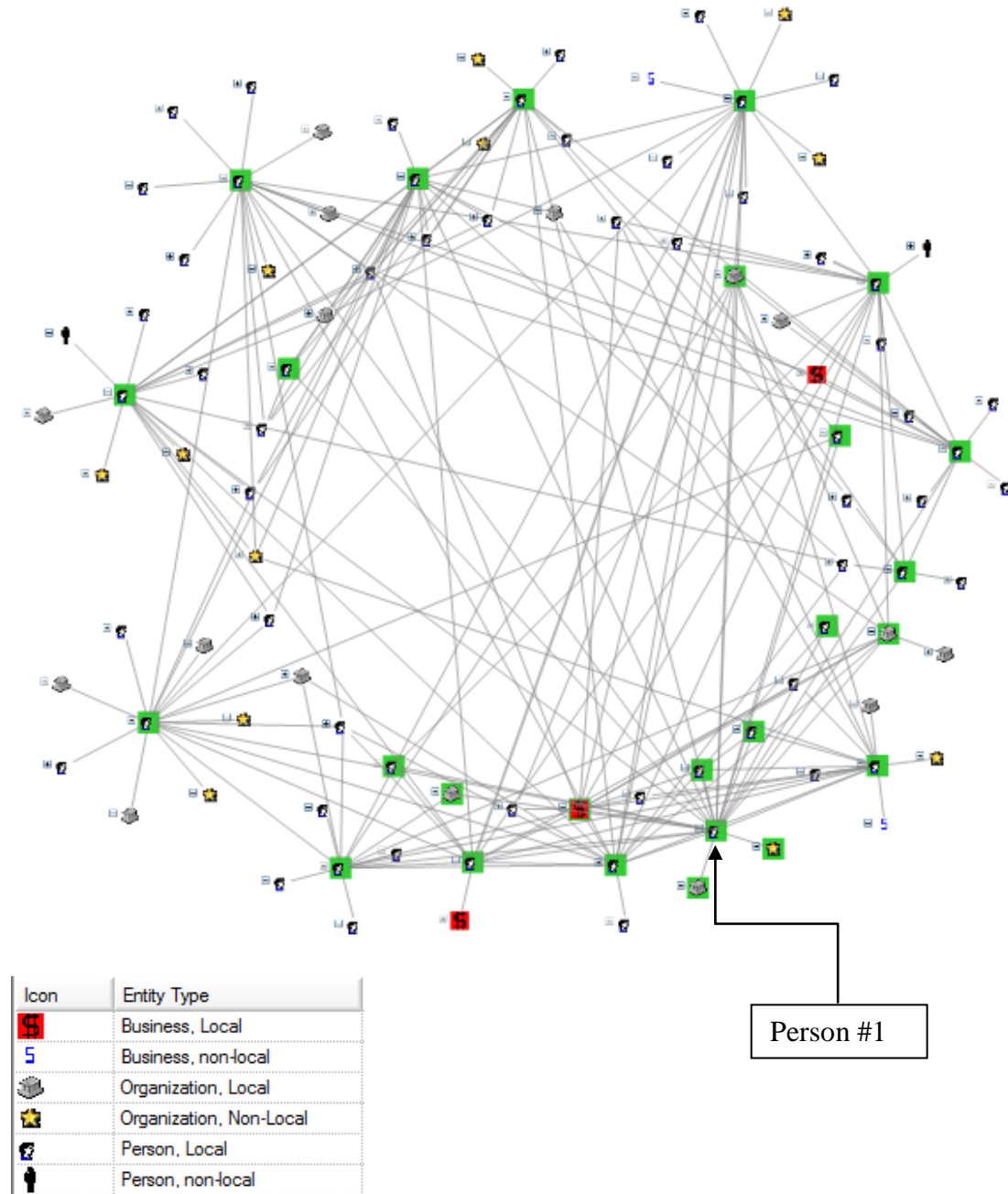
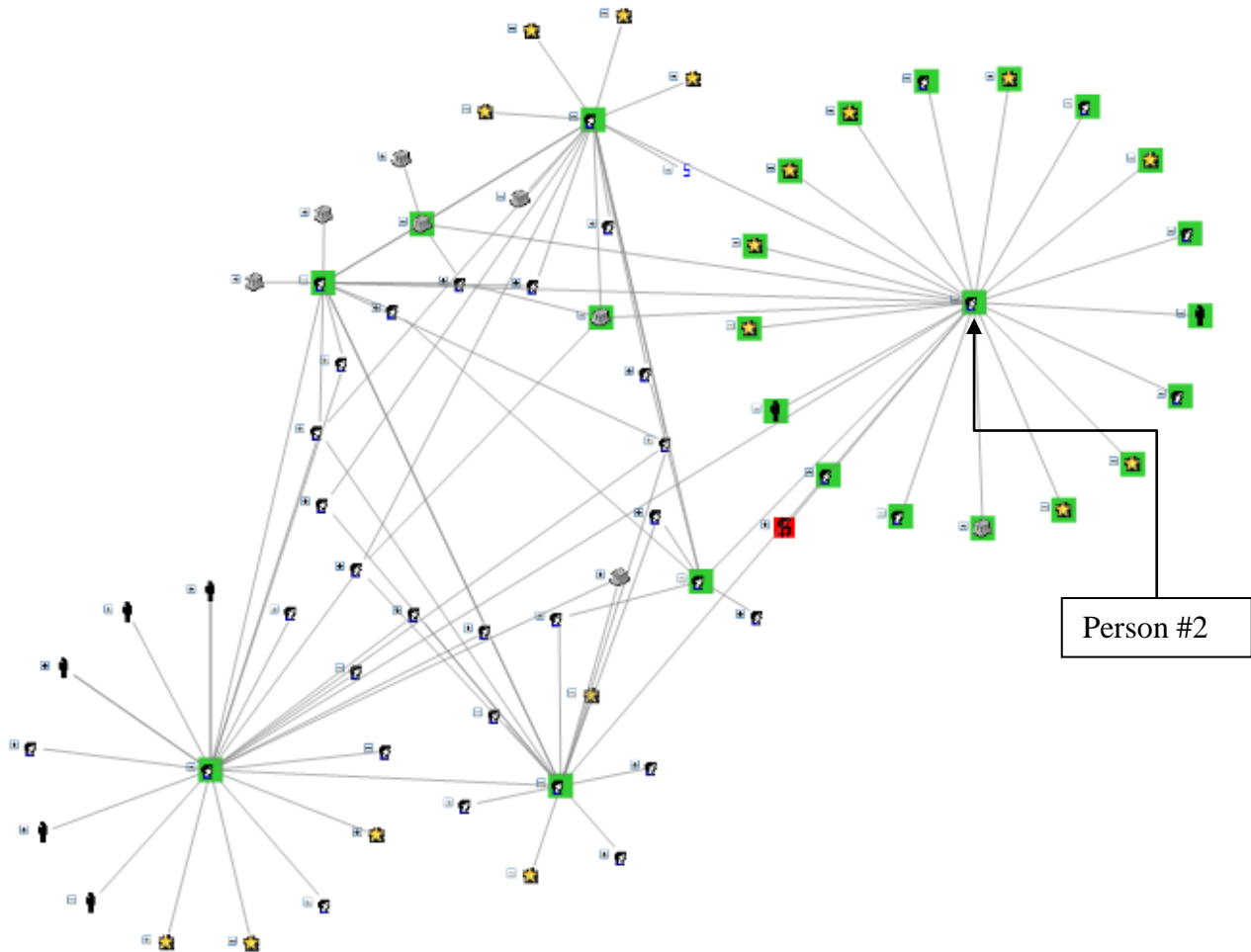


Figure 4.8 Tier 2 of Person #2 “Regionally Involved” (70 nodes, 99 links)



Icon	Entity Type
\$	Business, Local
S	Business, non-local
🏢	Organization, Local
★	Organization, Non-Local
👤	Person, Local
👤	Person, non-local

Figure 4.9 Tier 2 of Person #3 “Long-Term Involved” (104 nodes, 177 links)

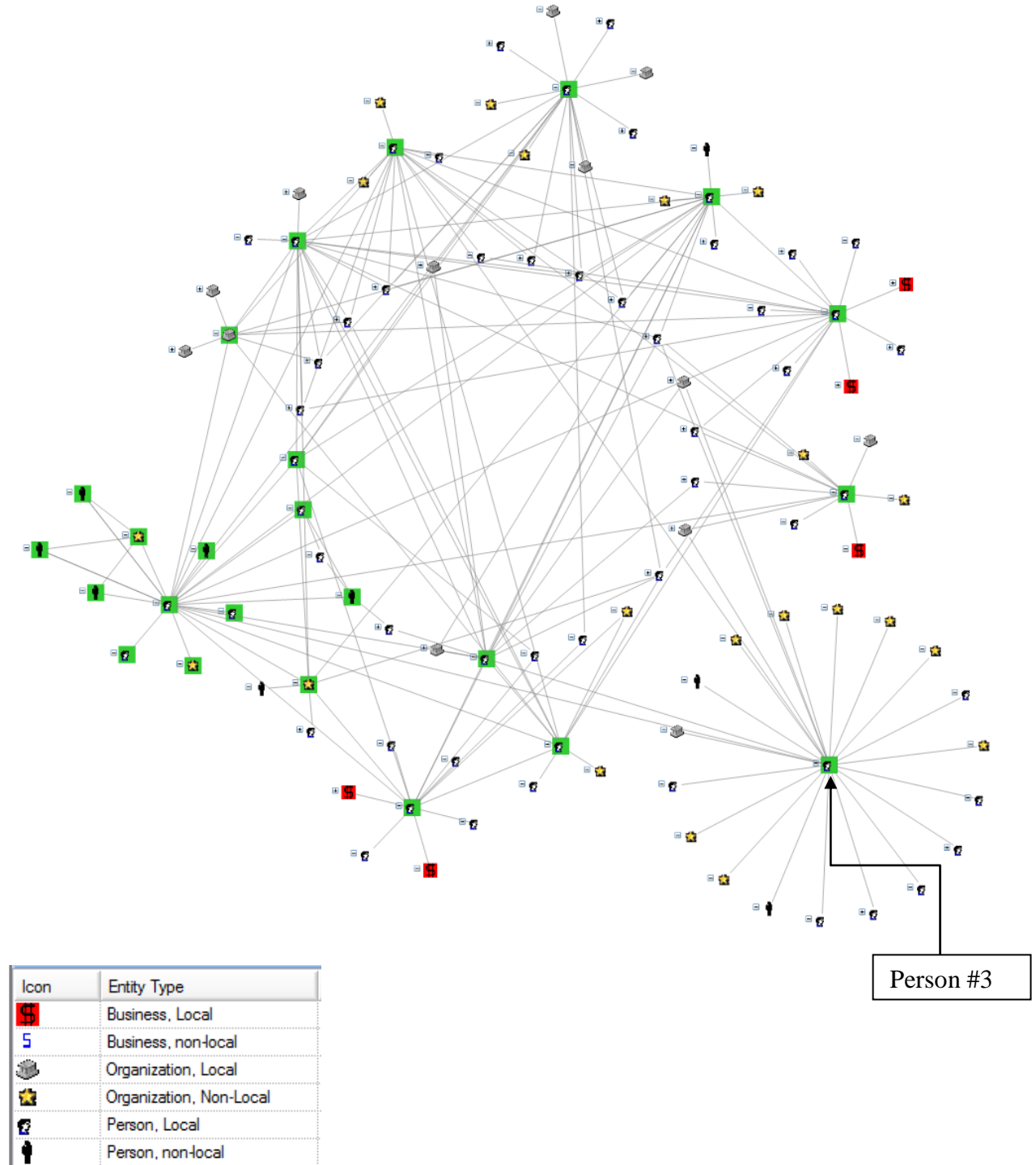
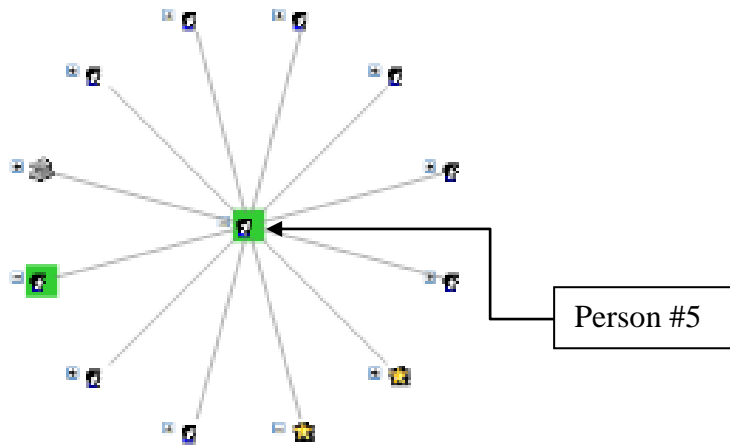
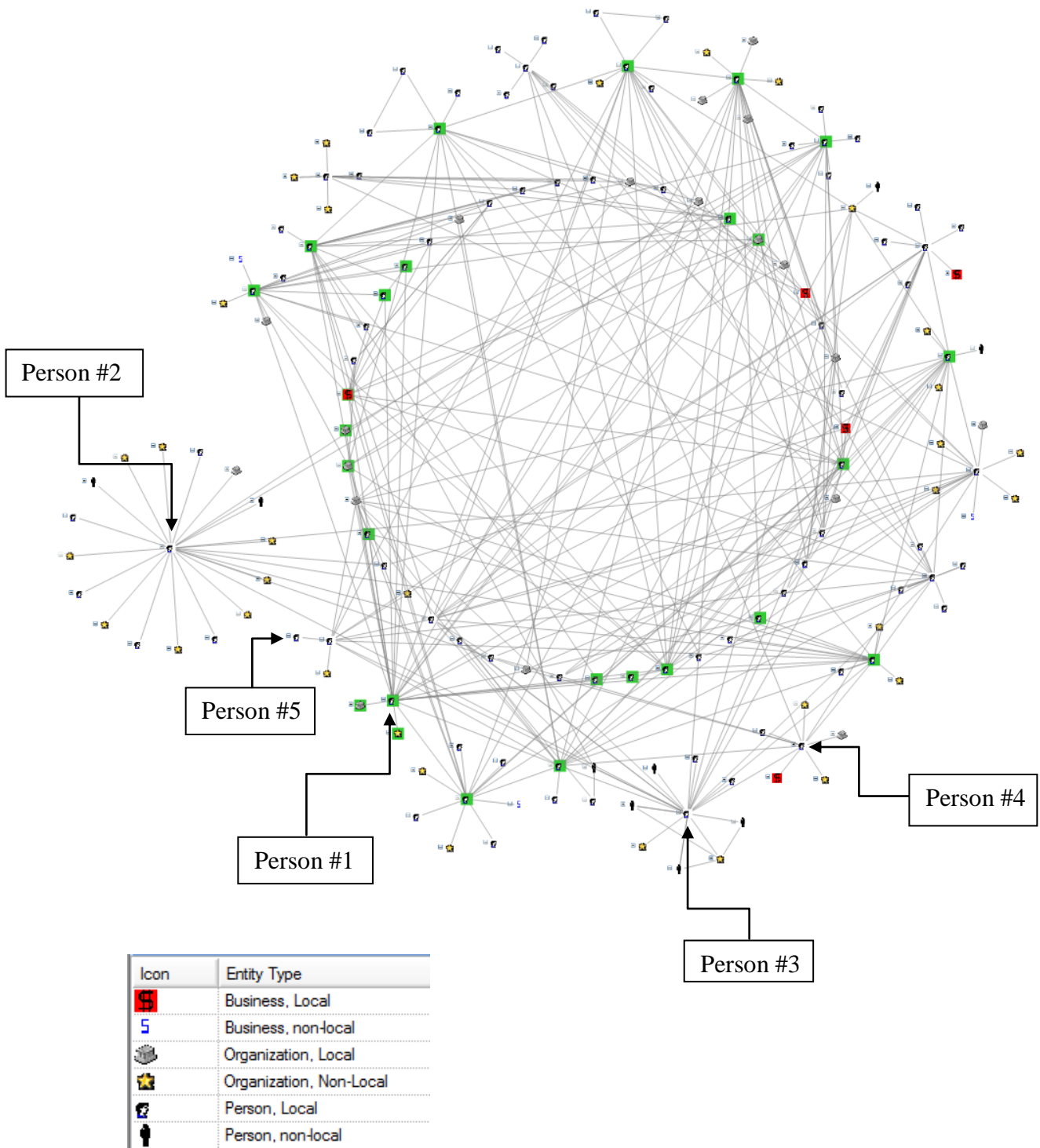


Figure 4.11 Tier 2 of Person #5 “Young Person” (13 nodes, 12 relationships)



Icon	Entity Type
	Business, Local
	Business, non-local
	Organization, Local
	Organization, Non-Local
	Person, Local
	Person, non-local

Figure 4.12 Tier 4 of Person #1 “Involved Newbie” (159 nodes, 336 links)



Sub-question 1. Where are the areas of greatest strength in Emerado's social network?

Bridging vs. Bonding

After analysis, it was noted that the Emerado Social Network Analysis had the following characteristics: Of the 159 nodes, 115 were local nodes and 45 were non-local nodes. Community members have much more interaction amongst themselves (bonding) than they do with others outside the community (bridging).

Emerado has a high degree of bonding capital. Communities which have a high degree of bonding social capital have a high degree of reliance on themselves. They look to neighbors and friends in times of need and to help get through everyday life.

Emerado lacks bridging capital. In communities with a high degree of bridging capital, there would typically be weak-tie networks of people that have other weak-tie networks with people who essentially have access to information that the initial group might not know about. These individuals can serve as informants regarding opportunities, such as job opportunities.

Many of the organizations in the community have individuals serving on committees of multiple organizations, although there seems to be very little collaboration between organizations in terms of sharing what each organization is doing or what is going on. There seems to be even less discussion about developing ways to work together to improve the situation of individuals and groups in the community, which would be indicative of bridging capital. Collective goal setting would be ideal so everyone could work together to improve the community.

There appear to be opportunities for Emerado to increase bridging capital. Outreach with the Air Force Base has begun to occur. An Air Force Base representative was at the July 2, 2013, Park Board meeting offering to provide volunteers to help with the Community Connect Forum. At the same meeting, a Park Commissioner was expressing difficulty finding volunteers to work on tree removal and wood chipping at the park. Even though the offer for volunteers had been made just a short time earlier at the same meeting, perhaps the high degree of community self-reliance prevented hearing the offer for volunteers and connecting that offer to an alternate need the community was facing. Once the connection was made, everyone was pleased with the help that Air Force Base volunteers were able to provide working on the City Park.

During community member interviews, interviewees were asked about the groups and organizations they participated in, and the individuals with whom they discussed community affairs. Nearly all of the individuals discussed the community with primarily the same set of individuals, and almost all of the individuals knew each other and many recommended one another to be interviewed. Ideally, individuals throughout the community would associate with other community individuals (potentially a combination of strong and weak ties) and those individuals would each have their own network of close friends and relatives (strong ties) as well as other individuals that they know through other means or organizations (weak ties).

It seems that for Emerado, most of the people interviewed only knew and interacted with the same set of individuals in the community. If they knew and interacted with others, it was related to their work, not necessarily places they would discuss the community, especially if they worked outside the community. If there was overlap between individuals in more than one organization, there seemed to be little cross-discussion about the needs and interests of each organization.

Additionally, many people mentioned over and over that when there was work to be done, it was the same 5 to 10 people doing the work, regardless of what needed to be done. Over time this leads to burnout, especially when the work is sometimes not appreciated due to the low turnout at events that they worked hard to develop. It is important to get individuals excited to work together and create a successful project or effort. Without collaboration it is difficult to increase community involvement.

There have been some efforts recently to increase the amount of interaction in the community. For example, the previously mentioned Emerado Community Center Facebook page was created to help keep the public informed of events and news regarding the community. Prior to this development, the only real way people got news about community events was to talk to others while at the post office, elevator or bar, or to see fliers posted at either those locations or the one of two gas stations or at Dairy Queen.

A nearby community, Larimore, North Dakota, has a newspaper that recently began to allow Emerado to post articles or a page of information regarding Emerado. It is unclear as to the effect that this has had as it has only been occurring a few months. The newspaper is a paid subscription newspaper, which also affects readership, especially when the newspaper is primarily focused on a different community.

There are portions of the community that are less connected with the remainder of the population. Emerado has a large number of people who retired from the Air Force and chose to settle in Emerado, which could be a benefit to the community if the individuals were motivated to help improve town. Emerado is also home to people who work in Grand Forks, about 15 miles away, but chose to live in Emerado due to the cheap housing, small town feel and/or lack of big-city regulations. These individuals have limited time and ambition to play an active role in the community. The community is also impacted by farmers who do not live in the community but have close ties to the community. Many of them want to see the community be successful, and to varying extents, seem like they might be willing to help the City work towards those goals, if a cohesive plan were established and rallied behind.

Degree Centrality

By obtaining a physical count of the number of direct connection (1st Tier) nodes that each of the 25 interviewed people interact and connect with, we are able to determine the individuals with the greatest number of direct connections, and therefore the strongest network, by measure of degree centrality. These individuals have multiple ways to get things done, so they are less reliant on others. They often have a position of advantage in the network. These individuals are the most active in the network, although not necessarily the most powerful. Their power in the community tends to increase when they have strong, highly-networked first line contacts with lots of bridging capital. The top 10 individuals regarding degree centrality are listed in Table 4.2.

Table 4.2 Degree Centrality - Number of Direct Relationships

Rank and Individual	Number
1. Former Law Enforcement and current Fire Fighter	25
2. School Board/PTO Member and Former State Representative	24
3. Former Business Owner and Elected Official	23
4. Mayor's Wife and Park Commission Secretary	19
5. Mayor	19
6. City Council Member	18
7. Park Commissioner	18
8. Park Commissioner	18
9. School Board/PTO Member and Business Owner	18
10. Trailer Court Owner	18

It makes sense that the first two individuals have a high number of direct contacts, as they are both very upbeat and seem to be looking for ways to connect with others and improve the status of community. The third person on the degree centrality list is also very involved in the community, and was frequently noted by interviewees as the person they talked to for information about the community. Most of the individuals on the list are involved with a prominent organization in the community.

Betweenness Centrality

Individuals, nodes or actors with a high degree of Betweenness Centrality have a very powerful position within a network. They greatly affect and influence what happens in a network because they connect various parts of the network together. Without them as a node in the network, the network would fail to exist in its current form. Sentinel Visualizer 6, the program used to analyze Emerado Social Network, calculates Betweenness Centrality based on data inputs and the diagram created by showing the web of relationships. Below is an overview of the ten individuals with a high level of betweenness centrality in Emerado (Table 4.3).

Table 4.3 Betweenness Centrality Score

Rank and Individual	Betweenness Centrality Score
1. School Board/PTO Member and Former State Legislator	1.00
2. Former Business Owner and Former Elected Official	0.0892
3. School Board/PTO Member and Business Owner	0.6388
4. Former Law Enforcement Officer and Fire Fighter	0.5678
5. Park Commissioner	0.4960
6. Mayor	0.4959
7. Fire Fighter	0.4442
8. Mayor's Wife and Park Commission Secretary	0.4343
9. Former Park Commissioner	0.4284
10. City Council Member and Fire Fighter	0.4250

Since the school board has been highly effective in the community, it makes sense that their members occupy top slots on this list. Also, the second person on the list makes sense as well, as they have a business-oriented nature that helps them accomplish goals and have an influence in the community, even without residency status. The fourth person on the list had the most highly connected first line. It seems fitting that they occupy a critical role in holding the network together. Many of the organizations represented in the degree centrality chart (Table 4.2) are also present in the betweenness chart (Table 4.3).

It seems interesting that the Mayor is located more than half way down the list. One might expect the Mayor to rank higher. However, the Mayor is not involved with local organizations besides those required as part of the Mayoral duties. According to several interviewees, he is quite busy because he commutes to the Grand Forks area to work and also has a contract to mow City-owned land during the summer. Other interviewees commented his maintaining the status quo, which they did not feel was always a good thing.

Closeness Centrality

Closeness centrality refers to how quickly or directly an actor is able to connect with other entities in a network. In its simplest form, this measures the path between two nodes. The length of the links (or number of relationship lines) that are required to connect two nodes refers to its closeness. For the social network analysis, closeness centrality ranks entities based on how quickly the node has access to all of the other nodes in the network. The nodes with the fewest numbers of links to connect to the other entities has the highest degree of closeness. They also have the greatest degree of visibility regarding what is going on in the network as a whole,

essentially giving them strength within the network. The top ten list regarding closeness are provided in Table 4.4.

Table 4.4 Closeness Centrality Score

Rank and Individual Characteristics	Closeness Centrality Score
1. Mayor’s Wife and Park District Secretary	1.00
2. Former Business Owner and Former Elected Official	0.9915
3. Former Law Enforcement Officer and Fire Fighter	0.9887
4. City Council Member	0.9859
5. Park Commissioner	0.9641
6. Former City Council and Current School Board Member	0.9614
7. Park Commission Chair	0.9484
8. Former Park Commissioner	0.9233
9. School Board and PTO Member	0.9233
10. Mayor	0.9184

This chart is quite different from the prior two charts. Closeness indicates closely linked relationships. The first person on this list scored fourth and eighth on the prior charts, but came out on top on this chart. This indicates she has a lot of close linkages which give greater visibility to the network.

School board and PTO member ranks regarding closeness are much lower than the rankings in prior charts. This is likely due to the fact that several of these individuals live outside the community. While they are well-networked, they are generally not very connected to Emerado individuals, businesses and city government.

Eigenvalue

Eigenvalue, which measures the close proximity to other highly-close entities, values the most central entities in the overall network. It is developed measuring the main pattern of distances among all of the network entities, and indicates centrality regarding positional advantage.

It somewhat surprising but seems to make sense that the trailer court owner would have a high Eigenvalue. He houses approximately half of the City, so he is well known (even if the trailer court is not liked by many non-trailer court residents). He attends City Council meetings, and many in the community know him, to varying degrees.

Person #2 on the list also makes sense given his involvement both with the City and the school, making him known to people in both areas. Many of the other individuals listed either serve on a prominent board or organization, such as the fire department, city council or park district, or are otherwise actively involved in the community, and generally in multiple avenues, which increases their exposure to a variety of people, giving them positional advantage in the overall network. The presence of Park Commissioners and Fire Fighters on this list makes sense because they are part of their organization’s network, and they are known to the community because of their involvement with said groups. The top ten Eigenvalue scores are included as Table 4.5.

Table 4.5 Eigenvalue Score

Rank and Individual Characteristics	Eigenvalue Score
1. Trailer Court Owner	0.3678
2. Former City Council Member and Current School Board Member	0.2789
3. City Council Member and Fire Fighter	0.2569
4. Park Commissioner	0.2406
5. Former Park Commissioner	0.2355
6. Fire Fighter and Former Local Law Enforcement Officer	0.2315
7. Business Owner	0.2181
8. Former Business Owner and Former City Leader	0.2178
9. School Janitor, Bar Cleaner and Former Lions Club Bookkeeper	0.2070
10. Air Force Base	0.2002

Combined Centrality, Degree, Betweenness, Closeness and Eigenvalue Rankings

It seems logical that combining the individual rankings for each of the five ranking lists into one table would help view the ranks for most of the top-ranking individuals and provide perspective regarding the individuals that scored highly in each of the five areas (Table 4.6). While not a perfect model, it does seem that it provides clues to overall effectiveness in networking.

The model was developed by obtaining the ranking for all of the individuals in the network for each of the five categories independently. The highest 50 individual scores for each category (such as centrality, betweenness...) were ranked and numbered in that order, with 1

being the highest score and rank in each category, and 50 the lowest or poorest rank. In order to be considered for inclusion in this chart, a ranking of at least 50 was required in every category.

There were several instances where more than one individual had the same score in a category (before ranking). For example, several people had 18 first-tier network links. The first person should be given a #6 centrality ranking. It would be unfair to randomly give the other individuals with 18 first-tier links a differing ranked number. For this reason, there are four sixes (and no seven, eight or nine ranks) in this column. The next possible centrality rank number is 10, although that does not show up on the combined chart as that person was not as highly ranked in other categories and did not get listed on this chart.

To determine which individuals got included in this chart, the individual ranks of each person were added together and the sum was divided by 5 (since there are five categories) to determine the “Average Rank” which indicates how the individual did overall per category. The lowest average rank was a score of 3, as no one scored high in every single area.

Although the chart was anticipated to show the top ten individuals, there are 11 individuals listed on the chart because there were two people ranked as number 10. Both individuals had the same “Average Rank”.

Further analysis might allow the rankings for each category to have a weighted value, but for purposes of this study, it is clear that the individuals scoring high overall scored fairly high in most areas. A weighted scale would perhaps shuffle the overall rank a bit, but it likely would not provide significant new information. Further, it would be difficult to justify how each measure was scaled as more or less important for the weighted scale calculation.

With that said, the chart does highlight the significance of involvement with the various community organizations. Clearly the Fire Department, Park Commission, City Council, and School Board/PTO are organizations of influence in the community.

Table 4.6 Combined Ranking

Rank and Characteristics	Centrality Rank	Between-ness Rank	Close-ness Rank	Eigen-Value Rank	Average Rank
1. Fire Fighter and Former Local Law Enforcement Officer	1	4	3	6	3.5
2. Former Business owner and Former City Leader	3	2	2	8	4.5
3. Park Commissioner	6	5	5	4	6.5
4. Park Commissioner and Mayor's wife	4	8	1	11	7
5. City Council Member, Fire Fighter and Postal Clerk	6	10	4	3	7.25
6. Trailer Court Owner	6	11	11	1	8.75
7. School Board and PTO Member, Former State Legislator	2	1	17	14	9
8. Former Park Commissioner	11	9	8	5	9.75
8. School Board and PTO Member	6	3	8	16	9.75
10. Former City Council Member	17	16	6	2	14.5
10. Mayor	4	6	10	34	14.5

Color Key/Scale	0-5.9	6-10.9	11-15.9	16-20.9	34
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Note: Combo Rank Score column is not included in the color scale, as it has larger numbers.

The individuals on this list really come as no surprise. They have all been on the prior lists several times. When looking at a listing like this, it is easy to spot the more dominant individuals and organizations. Tables 4.7, 4.9 and 4.10 further evaluate community organizations that are dominant in the community.

Sub-question 2. What are the Characteristics of those with the Strongest Social Networks?

In analyzing the social network diagram, of the 10 individuals with 18 or more connections (see Table 4.7 – Number of Connections for Highly Degree Centrality Individuals). Six were retirees (or spouse of a retiree), two were current or past Mayors or City Council members, four were Park District members, three were business owners (one business is in Grand Forks), two were fire fighters, and two were a school-board and/or PTO member.

Table 4.7 Characteristics of the Highest Degree Centrality Individuals

Number of Connections for Highly Connected Individuals	Retiree or spouse	City Council or Mayor (current or past)	Park Dist.	Business Owner (current or past)	Fire Dept.	School Board or PTO
25					X	
24						X
23	X		X	X		
19	X		X			
19	X	X				
18	X	X			X	
18			X			
18	X		X			
18				X		X
18	X			X		
	6	2	4	3	2	2

Emerado’s groups have a high rate of bonding, meaning they are strongly linked to individuals within the organization and community. There is a much lower rate of bridging, both between community organizations and outside the community. This impacts development and redevelopment because it reduces the ability for shared knowledge that is new to the community and organization when individuals all think the same ways and have the same information sources. It also reduces the ability for creating positive momentum, synergies, and building upon successes when each entity functions individually.

Specific individuals within the community can be counted on to make a difference or to give their opinion on how to make things happen. Ask anyone who they count on when they need to make sure that something needs to happen, and they will have a different “go-to” person. In a community, when dealing with community actions, the list can define the dominant individuals. The movers and shakers of the community, the people that can be counted on to make positive changes happen, are provided on Table 4.8. It is important to note that interviewees could specify more than one person for this list, and also that 10 of the 25 interviewees did not name anyone for the list.

Table 4.8 Specific People who Create Change

Movers and Shakers	Frequency
Non-Resident, Retired Business Owner and Participant in the Park Board	4
City Council Member	3
Mayor	3
Mayor's Wife and Park Commissioner	3
City Council Member	3
Former Mayor/City Council Member and Current (new) Police Chief	2
Park Commission Chair	2
Park Commissioner	2
City Contractor	2
Retired Business Owner	1
Current Business Owner	1
School Board Member	1
School Parent Teacher Organization Member	1
School Parent Teacher Organization Member/ School Board Member	1
City Clerk	1
Business Owner	1
No response or name was provided	10

Sub-question 3. What Types of Social Network Density Exist in Emerado?

Network density is a formal calculation that can be done to determine the degree to which individuals interact in relation to the degree that might be possible to interact. After reviewing the results of the mathematical calculation, analyzing the types of nodes in the Emerado Social Network Analysis (SNA) diagram (Figure 4.12) will be helpful in understanding the overall makeup of the SNA.

Network Density Calculation

Network density refers to how individuals or nodes link or connect to each of the other nodes. This study included a total of 159 nodes and 336 connections. The number of nodes (159) is used to calculate the upper limit on the number of connections. The sum of the connections from one node to the others measures how influential the node or actor is. With 159

nodes, there is a possibility of 12,561 connections (calculated using $(n*(n-1))/2$ where $n=159$ nodes) (Hanneman and Riddle, 2005).

The network density is equal to the actual connections in the network divided by the total possible potential connections. In this case, the 336 connections in the network get divided by the 12,561 total possible connections for a low network density of 0.02675 or 2.7 percent.

Networks which are more connected are better able to withstand changes, such as individuals leaving the network. The more connected or influential the individual leaving the network, the greater the negative impact to the network will be. Actors who have a greater number of first line connections have the greatest potential to be influential. Individuals with the least number of first line connections have the least likelihood of being influential. Individuals with a moderate number of connections in their first line could be more or less influential depending on if they are connected to others who are influential, otherwise their individual influence will be low (Hanneman and Riddle, 2005).

When the 25 interviewed individuals noted the people, organizations and businesses in which they maintained connections, the information was utilized to develop a social network diagram. After analysis of the diagram, it was noted that the Social Network Analysis had the following characteristics: of the 159 nodes, 114 were local nodes and 45 were non-local nodes, as shown in Table 4.9. Community members have much more interaction amongst themselves than they do with others outside the community.

Table 4.9 Types of Nodes in the Emerado Social Network Analysis Diagram

Types of Nodes	Local Nodes	Non-Local Nodes	Total Nodes
Person	90	9	99
Organizations	19	33	52
Businesses	5	3	8
Total Nodes	114	45	159

Part 2 of the Research Question - What Role do Social Networks Play in Community Development and Redevelopment?

Individuals involved with organizations or people outside of Emerado create bridging capital that benefits the community. If Emerado residents only associate with other Emerado residents, there would be less access to knowledge, information that might only be known by individuals outside of Emerado. Potential job leads, grant opportunities, legal information or other important leads, information or details might be missed out on simply because a group is homogeneous and knows no one other than people like themselves, who know information similar to what they already know.

The role of social networks in community development and redevelopment has been addressed several times throughout this research. Describing the social network analysis diagram for Emerado and identifying the organizations thought to be creating or preventing change help to summarize the impact that social networks have on community development.

Description of the Social Network Analysis Diagram for Emerado

One of the strongest social networks is the School Board / Parent Teacher Organization. They have extensive ties to regional community development organizations, ties to external professional groups and organizations, as well as a track record of success. They have good momentum and an upbeat perspective.

Figure 4.12, as depicted previously, shows the network of the most-connected person in Emerado. It also displays the Social Network Analysis for Emerado, because the individual's network includes all of the nodes and links identified by interviewees. The graphic features one large circle, surrounded by a series of smaller circles. The individuals and organizations located in the large circle primarily have bonding capital, with few, if any, known links to individuals outside the core community network. Individuals who are in the center of the smaller circles around the perimeter of the larger circle have a greater degree of bridging capital/weak ties than most community members, and therefore the strongest social network. Within each small, perimeter circle, spokes extend out from the node in the center of the small circle toward individuals, organizations, or businesses not commonly known to (or acknowledged during the interview by) most of the community members. The other nodes in the perimeter circles share few connections if any, with other local actors. These weak ties provide individuals and the

community as a whole with unique advantages. Weak ties bring new information and ideas due to their exposure to people outside of the core social circle of the community. This is the basis for the formation of a strong network.

Individuals with the strongest social networks generally have the greatest ability to make a positive impact on their community and foster positive community development. These individuals have large numbers of network linkages and reach a broad spectrum of the community, connecting closely with many individuals and serving as a bridge to connect weak ties to the greater community. They are also generally highly involved in community organizations.

Organizations play a strong role in community development. Two questions during the interview process shed light on the change-making potential of organizations, but view it from a different angle than social network analysis by asking individuals which organizations or individuals in the community create or prevent change.

Organizations Creating or Preventing Change

The 25 interviewees were asked two questions about action taking. Specifically, they were asked whether there were groups (or individuals) taking action on issues (Appendix A, Question #5) and, further, who is having an influence on things – essentially asking whether powerful people or entities are making change or preventing change from happening (Appendix A, Question #7). From these responses, a list was developed regarding what individuals said regarding the organizations that were creating or preventing change.

Highlights of the results of these questions are included as Tables 4.10 and 4.11. Responses that were voiced two or more times are included in the tables. It is perceived that the Park District is creating change, while the City Council is both creating and preventing change. This is not surprising since many interviewees actually stated that the City Council both creates and prevents change, depending on whether they support or oppose a proposed action. As an example, several interviewees noted a specific past incident where pipeline workers wanted to park campers in Emerado for a summer, but were unable to do so after their request was denied by the City Council. The additional campers would have brought rent to landowners and business to the small restaurants and other community businesses. Several individuals are still bothered by this prior denial. A similar request was heard by the City Council in December,

2013, and subsequently approved by the City Council. Half of the interviews occurred prior to this action. Many of the remaining interviews that occurred after the approval included individuals who were not necessarily aware of the approval.

Table 4.10 Organizations Creating Change

Organizations Creating Change	Frequency
Park Board	10
City Council	7
Lions Club	4
Mayor	2
School/School Board	2
PTO	2
Fire Dept.	2
No Response Provided	6

Table 4.11 Organizations Preventing Change

Organizations Preventing Change	Frequency
City Council	10
Mayor	6
Older Generations Not Willing to Change	1
Younger Generations Not as Involved	1
Judicial System (Cleaning Trailer Court)	1
County Health (Cleaning Trailer Court)	1
Farmers (Unwilling to Develop)	1
Slower Pace - Less \$ than Grand Forks	1
Local Business	1
Specific Individual	1
No Response Provided	11

Findings Summary

Emerado seems to have a high level of bonding capital with some bridging capital. Some organizations and groups have pockets of influence and power within the community.

Organizations like the School Board and Parent Teacher Organization have been highly effective at achieving their goals. Organizations like the Lions Club have been effective in general community assistance, but may be more effective if able to integrate their efforts into a wider set of community goals and projects.

Chapter 5 - Conclusions

Findings –Social Capital in Emerado

Emerado has a high level of bonding within the community. However, certain groups and individuals do not interact at all with other individuals. Information gets transferred through the community because of the overlaps between the different networks, but information pertaining to the projects, tasks and accomplishments of individual organizations does not get transferred very well among community members.

The highly disjointed nature within the community makes it difficult for individuals to work together to strive for positive community changes. Most organizations have short term plans, but seem to lack long-term direction and goals. Accomplishments within the community seem to be short-term in nature, with higher costs than necessary. Better, longer-term solutions seem out of reach due to the lack of cohesive planning and interaction among community members.

In most cases, this would be problematic to the community, but in Emerado's case it is a life-safety concern. Several public-safety issues need to be addressed and/or resolved to ensure the continued safety of residents. For example, there is no tornado shelter in the community, even though half its population lives in a trailer court. The Fire Department primarily operates with tanker trucks, even in town, due to issues with the water lines and hydrants, which have been scheduled to be replaced at a relatively slow rate of two hydrants per year until they are all functional. The Fire Department does not currently have the ability to fill the tanker truck indoors, even during the cold winter. They are concerned about the cost of funding a full size water line to fill the truck as quickly as possible, and are instead considering a smaller connection that would slow the filling time, which slows the fire response time. The Fire Department, while a volunteer organization, is highly esteemed in the community and an important element of public safety. If influential people in the community chose to rally behind these important public safety issues, it would be likely that the community would step up and support the efforts. If the community can find funds for a school gymnasium floor and playground equipment, surely they should be able to find a way to fund highly-important Fire

Department and public safety needs. One interviewee suggested the following in regards to building a tornado shelter:

I think it has to be a community effort, obviously. I think if we are going to go to groups, all of the groups need to band together, come up with a plan, come up with a way to finance it, and the labor for it, you know I, I don't know if we can you know whether we would have to come up with picking out a contractor, going out for bids or whatever, but I think everybody should be, should feel at least obligated to try to do something to build a shelter here (Emerado Interviewee).

The community needs to identify and prioritize their issues and get individuals of influence to work together to resolve them.

Findings –Learning from Emerado

The identified social capital and networking patterns are likely evident in many small towns in the rural Midwest. Although organizations are part of the social capital, evaluating only formal organizations is not sufficient. Informal groups carry as much or more significance within a community as formal organizations. The informal social alignments of individuals create unwritten rules for behavior, perspectives, attitudes and opinions. When you can predict the informal group that a person associates with based on their response to a community issue, such as whether the community is better off with a police chief or contracted county sheriff, you know that the community has very strong group affiliations. It is likely that all communities have these types of informal groups, although the strength of each group and the degree they interact likely varies for each community.

It is likely that each community also has certain “hot topics” that get their residents emotional. These topics likely vary for each community. How the community reacts, whether it bands together to make positive changes, chooses to maintain the status quo and do nothing, or resorts to negative behavior (such as casting blame) largely depends on the social capital of the community. Strengthening the social capital of the community enhances the overall community.

Community Strength and Weakness – Perspectives of Emerado Residents

Most people that claim hometowns enjoy where they live and are proud to show off their town to outsiders. It would come as no surprise to many Emerado residents that Emerado residents do not feel a sense of pride in the appearance of their community. The trailer court in Emerado is highly visible. It has aging, thirty-year old trailer homes, that create a less than welcoming sight to residents and visitors entering the community. There is no welcome sign because no one can come to an agreement as to where the sign should be located due to the physically-segmented nature of the community.

When asked what they appreciate or value about the community (Appendix A, Question 4a), there were very few positive perspectives, some neutral perspectives, and many negative perspectives held by community members. One interviewee even went as far as to say they “were not sure why they have not left yet,” even though they have lived and worked in the community for over 18 years.

There was an overwhelming negative perspective regarding the community held by many residents. Residents complained about the community being small and lacking amenities. There were frequent complaints related to public safety concerns as well.

Residents complained often about the appearance and crime associated with the trailer court. The trailer court, while housing half of the housing in the community, has a high level of transition and gives the otherwise relatively stable population of Emerado a higher than average rate of turnover when compared to national averages.

There is a lack of participation at community and school events, noted by many individuals. Others complain that there is nothing going on in the town. When events are scheduled, event hosts complain that no one attends the events.

One individual in particular had a very positive perspective regarding the community. They were asked why everyone else had such negative perspectives about the community. That individual thought perhaps the long-term residents remembered the community when it was “in its heyday” in the past. Whatever the reason, it will be difficult for the community to succeed in any community development project without creating a reason for residents to enjoy and appreciate about the community.

Emerado needs a fresh perspective, something to get excited about as a community, and something to rally behind. The long-term issues may not go away, but what can change are the

negative perspectives by residents. Residents choose to live in a particular location. They can also choose to create positive feelings about their choice of where to live, instead of letting minor issues take away their community pride. Emerado has a strong backbone. It has survived several major fires and a tornado that destroyed large portions of the City. The community has the ability to pull together to make positive changes; community members just have to decide they want it bad enough to work to make it happen.

Reflecting on Potential Refinement of Interview Questions for Future Projects

If a similar study were to be conducted in the future, further refinement of the questions would be helpful. Question 2d (see Appendix A) asks “Do you communicate with these organizations, if so how do you communicate with people of these organizations?” It would have been more helpful to know who in the organizations they communicate with, rather than the method of communication (since method of communication provided almost duplicate information as question 3a (see Appendix A) which asks “how do you maintain your connections?”). The follow up question 2e (see Appendix A) was designed in part to get at that information, but seems to fail in that it uses the terms “personal friend.” The term personal friend when asking about connections seemed to bring a variety of responses, none of which were very helpful to the study. Even the next question, 2f (see Appendix A), asking “who you communicate or meet with on a regular basis outside of organizations where you are discussing the community or what is going on the community” seems to be answered differently than it might be if the question asking about “personal friends” was not just previously asked.

Asking to link organizations with personal friends seems to create an emotional response that affects the interview responses. Typically the responses to these questions include some variation of self-analysis regarding their personal friendships, including responses such as a declaration of really not having any or many friends (Interviewee 6), statements regarding how they do not socialize much anymore (Interviewee 17), or one of the more thoughtful and pertinent answers in which the interviewee struggled with calling them friends, but thought associates was a better fitting label, since they would never “call them up and invite them to hang out” (Interviewee 19).

Instead, it seems it would better to ask who the individual communicates with, and then ask if the previously-listed, specific individuals are a close friend or family member. This would allow a more clear determination of whether it was a strong or weak tie, as done in the Ennis and West (2013) study. It would also help remove some of the less helpful gut responses and philosophizing about friends and their personal status regarding friends in general.

In the Emerado study, questions were asked regarding personal friends to help determine how friendships played a role in the social network. It seems that while individual friendships are important, it is the formal and informal group associations that individuals have that shape their perceptions of how they ought to relate to others.

Application of the Snowball Sampling Technique

In this research, the snowball technique was utilized for identifying interview subjects, with some slight modifications. Following a presentation before the Emerado Park Board, all of the individuals that serve on the Park Board offered to be interviewed. Each of the five members were individually interviewed, forming a collective interview base. From these initial interviews, additional interviewees were identified, at the recommendation of the Park Board members.

Emerado is somewhat unique in the number of transitional residents, which impacts use of the snowball technique. The large number of new individuals who recently moved to Emerado includes approximately 28 percent of residents. These individuals (over one year of age) did not live in the community one year ago, according to the 2007-2011 American Community Survey (ACS) of the U.S. Census Bureau. This is almost twice the national average, which is closer to 15 percent. Additionally, there are a high number of rental housing units, and a high degree of vacancy within those rental units. Emerado has approximately 209 housing units, 156 of which were occupied based on the 2007-2011 ACS Census survey. This data gives an approximate vacancy rate of 25 percent, which the data indicates are almost entirely rental units. Of the total 209 housing units, almost half, or 101 units, are mobile homes, with only 54 of those units indicated as occupied. The 102 owner occupied housing units, located throughout the community, are thought to have no vacancies, according to the ACS data.

The apparent degree of mobility of the community is further highlighted by the ACS data pertaining to location of residence one year ago. Of the 362 individuals over age one that were

included in the analysis, 72 percent lived in the same house (compared to 85 percent U.S. average), two percent lived in the same county, but not the same city (nine percent U.S. average), two percent lived in a different county within the same state (three percent U.S. average), 18 percent lived in a different state (less than one percent U.S. average), and six percent lived abroad (less than one percent U.S. average) (U.S. Census Bureau). This trend is in sharp contrast to nationwide statistics. The high degree of mobility may mean that there are shorter and fewer linkages, which may have impacted the number of individuals identified to be interviewed through the snowball technique. Further, the small community size reduces the total number of individuals available to interview.

Apart from the interviews obtained after talking to Park Board members and hearing their suggestions of who to interview, the researcher also knew some individuals personally or had personal friends who knew individuals who lived in or near Emerado, who were also interviewed. For the purposes of this case study, interviews were conducted until such time as there was no new information being obtained and recurring themes continued to be discussed with similar information. A total of 25 interviews were conducted.

Lessons Learned

There were a few general lessons that were learned regarding social networks in general that seem evident in Emerado and may also be applicable to other communities:

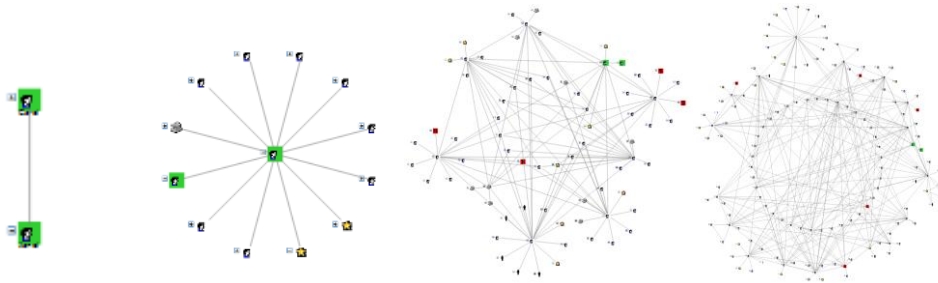
1. Everyone's network starts to look the same by about the third tier if everybody knows the same people. It is really the second tier that has the most influence on a person's success: who you know and who your friends know. Beyond that there is less accessibility to information and other benefits.

2. It seems that you have to get past the "I know someone who could help *but I wouldn't ask unless I REALLY needed help, like it was the last option*" (Interviewee 21). If you know someone who can help you, you should not be afraid to ask for help if you need it, especially if you would be willing to help if someone asked you. You have to be willing to graciously accept help, and kindly ask for help. If you are only willing to give help, it does not work as strongly to your benefit. If you have a network, and you need to figure out how to make something happen,

you need to be willing to stick your neck out and ask questions, such as “who might know about how to...,” “what is the best way to...,” “do you know someone who knows about...”

3. You can have a network with only one person. It is still a good network if connecting to someone well networked. One person’s network (Person 5 – “Young Person”), encompasses nearly the entire social network in four tiers (147 of 159 possible nodes, 305 of 336 possible links). The first two tiers are still the most accessible to the individual, and Person #5 is weak in those tiers. Because they have a strong first line connection even though it is just with one person, they still have remote access to nearly the full community network, which could be helpful to them during a future time of need.

Figure 5.1 Person #5 (“Young Person”, low in bridging and bonding) (Repeat of Figure 4.6)



Tier 1	Tier 2	Tier 3	Tier 4
2 nodes	13 nodes	73 nodes	147 nodes
1 link	12 links	122 links	305 links

4. It seems almost everyone knows someone with a relatively strong network. If anyone in your network knows lots of external people, you can take advantage of those weak links, but you are better able to access them and their weak links if you have a closer relationship to the linking person. If you do not talk to the linking person very often, or just superficially, you may never know what you are missing because unless you ask for specific information, you would never know what or who they know.

5. It seems attitude plays a big role in how much your network helps you. If you see the glass half full and the world full of opportunities, you will start to connect the dots and ask the questions that get you information you need to know. If you see the glass half empty, you may not be able to reap the full benefits of weak tie/bridging relationships. It requires effort to learn what your friends and acquaintances might know or be able to learn from their networks. It takes

energy to figure out how to best use a network to your benefit. If you have a poor frame of mind, it will make it difficult to be successful.

Conclusion Summary

Emerado has a lot of bonding social capital, although if the groups communicated better and developed a common community agenda it would help the community to be more effective. All of the groups really need to start creating a common ground, working and communicating together. Perhaps a shared goal would help with overlooking differences in perspective that currently limit effectiveness.

The community as a whole is lacking in bridging capital and lacks the ability to identify and seek out outside sources of information and assistance. There are people in the community who do have extensive bridging networks. Using these individuals as models for growing bridging capital will be beneficial for many community members.

It seems that to some extent the work of the school is marginalized. Valuing the work of the school organizations equally with other community organizations will help the entire community, especially given the fact that they have been very effective in setting and reaching goals. They are a great model for accomplishing results in Emerado.

Emerado is a community with a lot of transition, but is also home to a lot of caring long-term residents who want to improve the community. By helping residents find ways to improve the community, helping increase social capital and other capital, it will help the entire community. It will likely not be easy given the tentativeness that many residents have towards getting involved, but, as one interviewee stated, when people can see the benefit to them, they can change their perspective. Attendance has been poor at most past events, but there has not really been a strong mobilizing force to motivate individuals to care about their community. Often times a tragedy can be very mobilizing for a community, as it draws everyone together. Ideally change will occur before a disaster strikes.

The struggle will be to create a mobilizing effect with a long-term vision and goal and development. Creating visions and goals with the assistance of the entire community will help them feel connected and part of the effort. A strong vision, a strong leader who wants to create

change, combined with small early successes will help propel currently uninterested individuals towards caring about their community and working to make a difference.

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Appendix A - Interview Questions

1. Demographic Info
 - a. Can you tell me a little about yourself and how you came to live (or work) in Emerado?
2. Networks
 - a. Can you tell me about the groups or organizations (inside town) you are associated with (for example: church, volunteer organizations, active with the school or fire department...)
 - b. Can you tell me about the groups or organizations outside of town you are associated with (for example: legislators, air base, Grand Forks organizations...)
 - c. Do you feel there are patterns to the groups and networks that exist and who participates (particular people who always participate/never participate, participate in some groups but not others, or are included or not included)?
 - d. Do you communicate with these organizations, if so how do you communicate with people of these organizations?
 - e. Do you have connections with personal friends through those organizations, (do/did you know each other prior to or outside of the organization)?
 - f. Who do you communicate with or meet with on a regular basis outside of organizations where you are discussing the community or what is going on in the community?
3. Ways to communicate:
 - a. How do you maintain your connections? (For example, do you see each other at a monthly card club, connect by phone, email, Facebook...?)

6. Are you connected to these groups (or individuals) that are making change? (some people have connections, others will not – this will provide two ways of grouping individuals and their networks)
7. Who is having an influence on these things? (are there people who are powerful making change or preventing change from happening?)
8. Do you have suggestions about individuals that should be considered for an interview?

Appendix B - List of Codes

The initial coding included a very extensive list of codes. This list was consolidated after several times going through coding, creating categories with subcategories. The list below is the consolidated list of codes developed after working through coding and the code lists several times. The consolidated list makes it easier to see patterns than having lots of lists of codes with such unique features that each category is used just once or twice. The codes are categorized as follows: Part A. Change Making; Part B. Communication / Communication Tools; Part C. Informal Connections; Part D. Formal Organizations and Participation Patterns; and Part E. Strengths and Weaknesses.

Part A. Change Making

- 1) Positive change
 - a. Doing good job/satisfied
 - b. Networking possibilities
 - c. People making change happen (list)
 - d. Need for change recognized
- 2) Organizations Impacting Change
 - a. Emerado City Council
 - b. Emerado Park Board
 - c. Volunteer fire department
 - d. Emerado-Arvilla Lions Club
 - e. Church or church board
 - f. Emerado School Board or Parent Teacher Organization
- 3) No change needed - Status Quo (is desired)
- 4) Preventing Change
 - a. Blame something for change not happening
 - b. Trailer Court
 - c. Farmers not willing to develop land around Emerado
 - d. Elections not promoted so no new candidates
 - e. No bank, loan difficulties
 - f. Young people do not care
 - g. Old people do not get out
 - h. No one doing enough (to make change happen/passing the buck)
 - i. No agenda for change (change is somewhat random and unplanned)

- 5) Unsure
 - a. Unsure how to make change happen
 - b. Unsure who is creating or preventing change
 - c. Unsure who leaders/groups are
- 6) Mayor/election/police issue comments
 - a. Sheriff is best
 - b. Police chief is needed
 - c. Mayor is not doing enough
 - d. Mayor is doing fine
 - e. Mayor recall election
- 7) Connections
 - a. Connected to people/groups making change
 - b. Not well connected in town

Part B. Communication / Communication Tools

- 1) Fliers
- 2) Newspaper
- 3) Church bulletin
- 4) Facebook
- 5) Avoid/minimal Facebook
- 6) City Website
- 7) Phone calls
- 8) Cell Phones – texting
- 9) Email
- 10) Methods of as direct communication as possible
- 11) As little as possible
- 12) Know enough about community events
- 13) Do not know about community events in time

Part C. Informal Connections

- 1) Informal “crowd” or “group” participation
 - a. bar crowd
 - b. non-bar people
 - c. trailer court people
 - d. retirees
 - e. young (adult) people
 - f. older people
 - g. old town site people
 - h. farmers
- 2) Interview candidate suggestions (listed)

Part D. Formal Organizations and Participation Patterns

- 1) Formal Organization Participation
 - a. Emerado City Council
 - b. Emerado Park Board
 - c. Volunteer fire department
 - d. Emerado-Arvilla Lions Club
 - e. Church or church board
 - f. Emerado School Board or Parent Teacher Organization
 - g. Smaller groups: Emerado homemakers group, Red Hatters, Lioness group.
- 2) Organizations outside Emerado
 - a. Bowling leagues
 - b. Golf club membership
 - c. Church and church board membership (outside of Emerado)
 - d. Professional organizations
- 3) Participation Patterns
 - a. Same people participate
 - b. Old do not participate
 - c. Trailer court people move to quickly to participate
 - d. Not a lot is happening in Emerado
 - e. Bar people do not mix with church people
 - f. No time to participate (kids, jobs, computer...)
 - g. No one cares about the community

Part E. Strengths and Weaknesses

- 1) Strengths
 - a. Volunteer Fire Department
 - b. Lots of 20 year olds
 - c. Older people volunteers
 - d. Flexible regulations
 - e. Mayor does his job/tries best
 - f. Pride in Community
 - g. Not a whole lot (negative)
 - h. Low rent
 - i. Small town feel
 - j. Low crime/safe
 - k. Nature
 - l. Social interaction/friends and neighbors
 - m. Trailer court
- 2) Sense of place comments

- 3) Negative attitudes (little positive to say about community)
 - a. Not a whole lot positive to say
 - b. More strengths listed than weaknesses
 - c. Request for positive comments elicited negative response or delayed response
- 4) Weaknesses
 - a. No one participates / Nothing is going on
 - i. Older people are unable to get out
 - ii. Not a lot for kids to do
 - iii. Transient do not stay long enough to get involved
 - iv. Younger adults do not care about the community
 - v. Do not know neighbors/homebodies
 - vi. Neighbors used to help neighbors more
 - vii. Emerado days a failure – lack of participation
 - b. City Government
 - i. Rigid attitude
 - ii. Makes assumptions
 - iii. Not business oriented
 - iv. Prevents change
 - v. Defensive
 - vi. No one goes to meetings unless something is bothering them
 - vii. No one willing to commit to trailer court clean up
 - viii. Small things get ignored
 - ix. Mayor and City Council operate behind the scenes
 - c. Communication (lacking)
 - i. Fliers not helpful if you do not go to the businesses
 - ii. School backpack fliers do not go out in the summer
 - iii. Bar is only way to get info
 - iv. Not everyone uses Facebook
 - v. Signage for City
 - vi. Everyone knows everyone else's business
 - d. Transient people
 - e. Too small/businesses fail
 - f. Aging population
 - g. Financial
 - i. Bank needed
 - ii. Housing developers do not come here
 - iii. Businesses fail
 - iv. Trailer court scares away progress
 - v. Want low rent without trailer court ails
 - vi. Shopping limited

- h. Public safety
 - i. Fire hydrants not working
 - ii. Fire Department neutralizing impact between community groups
 - iii. Fire department willing to settle for second best in key areas
 - iv. Fire department needs people age 20+
 - v. Police/Sheriff issue
 - vi. Tornado shelter needed
 - vii. Tornado siren not working
 - viii. Water costs too much
- i. Upgrades/Maintenance (non-trailer court)
 - i. House maintenance needed
 - ii. Landscaping updates needed
 - iii. Overland flooding
 - iv. Park Upgrading
 - v. Sewer upgrades
 - vi. Slow to fix (water main...)
 - vii. Updating needed
- j. Trailer Court
 - i. Animals/rodent issues
 - ii. Should be condemned/demolished
 - iii. No one is doing anything about it
 - iv. Drug/crime/sexual predator issues
 - v. Empty buildings/junk/messy
 - vi. Attracts wrong crowd
 - vii. Trailer court parent do not participate at school
 - viii. Stigma
 - ix. Transient (move in and out)
 - x. Maintenance issues
 - xi. Gives city bad reputation
 - xii. Owner does not care
 - xiii. Owner wants to do well but overwhelmed
- k. School
 - i. More rooms needed
 - ii. Parent participation is low
 - iii. Kids activities limited (especially summer)
 - iv. Small school, few kids

Appendix C - IRB Approval

KANSAS STATE
UNIVERSITY

University Research and Compliance Office

TO: Stephanie Rolley
Landscape Architecture
302 Seaton Hall

Proposal Number: 6745

FROM: Rick Scheidt, Chair 
Committee on Research Involving Human Subjects

DATE: 06/21/2013

RE: Proposal Entitled, "Community Networks: A Social Network Analysis of Emerado, ND"

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written - and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §46.101, paragraph b, category: 101b, subsection: 3.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.



Appendix D - Community Receptiveness

A summary of the results of this research were presented on April 1, 2014 at the first meeting of the Emerado Development Committee. This group was formed to help encourage and create positive community development. The committee was very receptive of the research results, and was especially interested in Figure 4.1 which graphically represents the researcher's perspective of how the Emerado groups and organizations interact. The graphic was created based on interview data. It was noted that it seemed very accurate.

Social network diagrams, including nodes and links were explained, and the diagrams of the five example people were presented. Additionally, the chart showing the top ten individuals ranked by centrality was also presented. The committee seemed very interested in the results and learning how the data can benefit the community.