The effectiveness of urban revitalization as a growth management tool: 
a case study on Dubuque, Iowa

by

Karen Sue Hanson

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF COMMUNITY AND REGIONAL PLANNING

Major: Community and Regional Planning

Program of Study Committee:
Timothy Borich, Major Professor
Stuart Huntington
Terry Besser

Iowa State University
Ames, Iowa
2001

Copyright © Karen Sue Hanson, 2001. All rights reserved.
Graduate College
Iowa State University

This is to certify that the Master’s thesis of

Karen Sue Hanson

has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy
# TABLE OF CONTENTS

## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>v</td>
<td></td>
</tr>
</tbody>
</table>

## ABSTRACT

vi

## CHAPTER 1. INTRODUCTION

- Overview 1
- Problem Statement 6
- Objective and Research Question 7
- Methodology 8
- Need and Significance 9
- Organization of the Study 9

## CHAPTER 2. LITERATURE REVIEW

- Dubuque, Iowa 11
- Formation of Cities 21
- Dubuque Iowa’s Land Use and Land Use Development 31
- Urban Sprawl and Growth Management 35
- Measurements 41
- Growth Management 42
- Dubuque, Iowa 45
- Infill Development and Urban Revitalization 46
- Measurements 52
- Dubuque Iowa’s Urban Revitalization Program 52
- Dubuque, Iowa’s Transportation Network 55

## CHAPTER 3. METHODOLOGY

- Urban Sprawl 57
- Annexation Rates 60
- Land Density 63
- Dwelling Units 63
- Urban Revitalization and Infill Development 64
- Dollars invested in Urban Revitalization 64
- Urban Sprawl and Infill Development and Urban Revitalization 65
- Future Development within the City of Dubuque 66
- Developer Preference 66

## CHAPTER 4. FINDINGS

- Urban Sprawl 69
- Annexation Rates 69
Dwelling Units 73
New Dwelling Starts 76
Density 79
Urban Revitalization 80
Dollars Invested in Urban Revitalization 80
Building Permits 82
Transportation Findings 85
Initial Conclusions 92
Developer Interviews 93

CHAPTER 5. CONCLUSION 102

APPENDIX 109

WORKS CITED 123
LIST OF FIGURES

FIGURE 1: LOCATION OF DOWNTOWN AREA 17
FIGURE 2: DETAILED LOCATION OF DOWNTOWN AREA 18
FIGURE 3: DOWNTOWN LAND USE DUBUQUE, IOWA 33
FIGURE 4: DUBUQUE, IOWA URBAN REVITALIZATION DISTRICTS 54
FIGURE 5: ANNEXED DUBUQUE COUNTY LAND 1990-2001 71
FIGURE 6: ANNEXED DUBUQUE COUNTY DWELLINGS 72
FIGURE 7: PERCENTAGE OF ANNEXED DUBUQUE COUNTY LAND 74
FIGURE 8: CITY OF DUBUQUE, IOWA HOUSING UNITS 75
FIGURE 9: NEW DWELLING STARTS 78
FIGURE 10: CITY OF DUBUQUE POPULATION DENSITY 80
FIGURE 11: CITY OF DUBUQUE, BUILDING IMPROVEMENTS 81
FIGURE 12: BUILDING PERMITS, CITY OF DUBUQUE, IOWA 83
FIGURE 13: CITY OF DUBUQUE, IOWA NEW BUILDING PERMITS 83
ABSTRACT

With the increasing awareness on the importance of growth management and the need for cities to revive their downtowns many people are beginning to see urban revitalization as an effective tool for growth management. Cases such as Portland, Oregon are being used as examples of cases in which urban revitalization is effective as a growth management tool. However, Portland, Oregon also implements a stringent urban growth boundary. What happens in cities that do not have urban growth boundaries or urban services boundaries, yet also have successful urban revitalization programs? Can urban revitalization cause or contribute to fringe growth or even urban sprawl?

This research is important because many communities may see urban revitalization as a way to combat fringe growth or urban sprawl, when it indeed may encourage it. I think it is important for communities that are initializing urban revitalization plans to understand the affects that such programs may have on the community as a whole.

The results of this case study show that in Dubuque, Iowa strong infill development and urban revitalization programs can indeed cause urban sprawl. The correlation among
urban sprawl factors such as changes in density annexations, and new construction and those of infill development and urban revitalization, such as the improvement of buildings within the downtown area and the redevelopment of underused land show that a definite relationship exists.
INTRODUCTION

Nationwide urban communities are struggling with issues such as the deterioration of the inner cities, a general lack of community, and urban sprawl. During the past decade a great deal of attention has been directed towards these problems and many community leaders are now concerned with finding the right solution for their city's particular dilemma. "Smart growth" or growth management is being touted as the answer to many of the communities' problems, particularly for combating urban sprawl, which is low density, often rapidly growing, development that occurs along a city's edge or in its suburbs (Foder, 1999).

Density and the rate of development alone, however cannot measure sprawl. Sprawl is also development that relies heavily on automobiles and allows for little or no mix use development. When sprawl occurs undeveloped urban space is "leaped" over in order to guarantee that the new development is on the edge or "new" portion of the community. Growth management is seen as a way in which the quantity and quality of urban growth can be managed effectively (Porter, 1997).
The various tools of growth management greatly differ. One particular tool is infill development. Infill development consists of the development or redevelopment of property within the existing city that may not be in use or that are not currently used to their full potential.

Urban revitalization, often associated with infill development, is one common way in which the occurrence of infill development in a downtown is encouraged. Urban revitalization consists of the resuscitation of a declining portion of a city, often the downtown or the inner city area, in order to improve the city’s existing economy and social welfare of that area. Rehabilitation, the restoration of property to its original condition, is also associated with urban revitalization, because many urban revitalization programs provide incentives for making improvements on one’s property. Urban revitalization is more than just the rehabilitation of buildings, however, it also includes economic and social programs.

The general concept behind infill development and urban revitalization as a growth management tool makes sense. By improving the city’s inner core, often the downtown area, you will increase the desire of people to live and work in that area. This in turn will decrease the
number of people who flee to the fringes and suburbs of the city in order to escape the declining inner core.

People often see declining inner cities as the reason for sprawl and general fringe and suburban growth, yet is it possible that by improving the inner cities through infill development and by undergoing urban revitalization that a community may actually cause urban sprawl? By improving the inner city you send many messages to people within the community as well as to others in surrounding areas, or perhaps even nationwide. When a downtown area of a city prospers it sends the message that the city prospers as a whole. Whether it is the economic vitality that attracts additional businesses and industries to the city or new cultural theaters to the area, infill development and urban revitalization can indeed bring people into the entire city and its surrounding areas.

Common sense seems to point to the possibility that infill development and urban revitalization can cause urban sprawl. Who would not like to live in or near a city that has a vital downtown where you can walk down Main Street enjoy the shopping, the museums, the parks, and other attractions? It has been shown in many studies nationwide that people are willing to move in order to improve their
quality of life. A vital downtown indeed improves the quality of life for the members of a community.

Downtowns are unique. They are not the typical strip malls that are being built in suburbia nationwide. In many downtowns, you will find unique establishments that contribute to the overall character of the area. Downtowns are also typically more pedestrian friendly; you have an easier time crossing the street in the majority of downtowns in order to go shopping compared with trying to cross a highway so one can reach many of the businesses and malls located in the newer developments.

In order for infill development and urban revitalization to be a truly effective, a growth management tool it is often implemented with other tools such as urban growth boundaries or urban service areas. There is the question, however, of whether or not infill development and urban revitalization in such cases is a growth management tool or simply a product of the limitations placed on the outer expansion of the cities.

Purely relying on infill development and urban revitalization alone for growth management has its flaws. One of the main reasons is that redeveloping land in the inner city and downtown is expensive. Land values are
often much higher in the already existing inner city than those of the undeveloped fringe areas. Sites in the central urban areas may often have preexisting problems that developers would have to deal with. For instance, an older site may have potential environmental hazards that the new developer would have to clean up or remove from the site before further development could occur.

Less land is available in the inner cities compared to that in the fringe areas and the land within the already existing city is often divided into smaller parcels that may not be conveniently located next to one another. This may cause a developer to look to the fringe area, since it is often cheaper to build on a larger scale than on one small lot here and another small lot there.

The article “The Relationship of Cities and Suburbs” by Ronald D. Utt, 2000, helped me develop the original idea for my thesis. This article’s main premise is that, “the suburbs did not grow because of the decline of the cities” and that by stopping this decline it will not stop the growth of the suburbs (Utt, 2000). He argues that a declining central city will slow suburban growth because it decreases the overall development and economy of the city as a whole. Utt sites the cities of Pittsburgh,
Pennsylvania, Toledo, Ohio, and Wheeling, Virginia as cities that have declining central cities and thus declining suburbs as well. This thesis takes his argument and reversed it, by deciding to look at whether or not successful downtowns and central cities actually cause growth.

Some issues he discussed throughout his article this thesis disagrees with and those issues will be focused on in this study. Utt argues against governments’, particularly federal, state, and regional governments, involvement in developing urban revitalization or urban renewal plans. He feels that they weaken the local government and urban revitalization as a whole.

**Problem Statement**

The overall question that this study seeks to answer is: When a city incorporates infill development and urban revitalization, without other stronger growth management tools, can those development or redevelopment and revitalization effort actually cause urban sprawl? In the following chapters infill development, urban revitalization and growth management, along with their relationship to one another will be examined. Then a case study of the city of
Dubuque, Iowa will be presented showing how widely successful urban revitalization programs in their community have affected their city’s overall growth.

**Objective and Research Questions**

The main research objective of this thesis is to examine the relationship among infill development, urban revitalization, and urban sprawl. To operationalize this research the following questions about development in Dubuque, Iowa will be addressed:

1. What affects did the city of Dubuque’s urban revitalization plans have in those areas as well as the city as a whole?

2. What were the economic and growth conditions before the urban revitalization and infill development “took off”?

3. Is the amount of land undergoing urban revitalization and infill development adequate enough to slow or halt urban sprawl?

4. Did the success of the downtown area bring with it urban sprawl?
5. Are there major or significant limitations for new industries or businesses that would like to locate in the downtown area?

6. How has the transportation network between Dubuque and its surrounding cities affected the patterns of urban growth?

**Methodology**

According to Bailey, 1987, all research assignments follow similar formats, starting with selecting a problem and designing the research methods. Once all the data has been gathered, analysis and interpretation follow (Bailey, 1987). The problem for this thesis has been stated and the main focus of this thesis's argument will lie upon the analysis of the overall urban form of the city, the implemented urban revitalization and infill development plans, and any growth management plans that may be in use. Information for this analysis was gathered through interviews, observations, conversations with city leaders, such as the city planning services department, city manager office, building services department, engineering department, and housing services department, and the analysis of official documents and published works.
Need and Significance

A definite need for this study exists, due to the increase and focus on whether or not infill development and urban revitalization can indeed limit urban sprawl. Most cases for the argument focus on Portland and other Oregon cities, which use infill development and urban revitalization along with stringent growth management techniques. Though initially perceived as highly effective growth management, the Oregon programs are now under scrutiny for their negative effects—namely relaxation of zoning codes, loss of privacy, and a loss of a sense of neighborhood (The Oregonian/Oregon Live website, 2001). Little research has been done on the effect of how infill development and urban revitalization when acting alone will affect urban sprawl. It is concluded in much literature about infill development and urban revitalization that they can limit urban sprawl to an extent, but to my knowledge no study has argued that it could indeed cause sprawl.

Organization of the Study

This thesis is organized into three major sections. The first chapter is an introduction to the overall topic and to the city of Dubuque, Iowa as well. The second and
third chapters examine in detail how the major issues—
infill development, urban revitalization, urban sprawl, and
growth management—pertain to Dubuque, Iowa and the
specific processes of analyzing the available data as well
as the study's findings.
CHAPTER TWO: LITERATURE REVIEW

Dubuque, Iowa

Much of the general information for the city of Dubuque came from observations and experiences during my summer internship. Prior to this employment with the city, I read through a few books in order to gain a better understanding of the city's history and present conditions.

_Dubuque on the Mississippi_ by William E. Wilkie, 1987, provided a strong and highly detailed history of Dubuque from its foundation through the 1970s, particularly the changes that have occurred in the downtown area, which is currently undergoing infill development. Emphasis on Dubuque's history, and the changes the downtown has experienced throughout its history. Some particular changes focused on how the downtown has changed and transformed since the advent of the automobile. For instance, several changes have been made in the past several years in order to accommodate the growing need for additional parking within the downtown area.

Randolph W. Lyon, 1991, provided information on virtually everything that has existed in the past or that currently exists in the city of Dubuque. His book,
Dubuque: The Encyclopedia, is written in encyclopedia format increasing its ability as a reference book, for instance to look at a particular building or block area in the downtown in order to see how it has changed over time.

The economic state of Dubuque plays an important role in the analysis, therefore the "Retail Trade Analysis, 1999: Dubuque & Dubuque County, Iowa" prepared by Dr. Kenneth E. Stone and Georgeanne M. Artz, was consulted in order to gain a better understanding of Dubuque and Dubuque County's recent retail economic history. Another source on the background of Dubuque's economic history came from the Iowa PROfiles website, which is prepared by Iowa State University's Department of Economics. This website also provided additional information on the Dubuque's economic past.

Julien's Journal, written and produced in Dubuque, is a monthly publication, which discusses various community topics. During the past couple of years sprawl and downtown development have gained significant interest. Various articles from several past issues were used. Those articles addressed such topics as the formation of the Joint City/County Planning Committee, the preservation of area farmland, the Downtown Visioning Project, historic
preservation, and many others. It was very useful because it took accounts from local city and county leaders as well as citizens of the city of Dubuque and the Dubuque County.

The city of Dubuque, Iowa is located at the junction of Iowa, Wisconsin, and Illinois. Its eastern border is the Mississippi River and to the north and south is mostly open space or agricultural land. The western edge of the city is bordered by the city of Asbury and additional agricultural land and open space. The city is built among the bluffs that occur naturally along the Mississippi River. This gives the city a very unique topography and design layout. Two major highways run through Dubuque. US Highway 20 connects the city with Waterloo, located ninety-three miles west of Dubuque, and with East Dubuque, Illinois, located directly across the Mississippi River. US Highway 151 / 61 connects the city with Cedar Rapids, located seventy-four miles south of Dubuque, and then runs through the city to Wisconsin, eventually connecting it with the cities of Platteville and Madison.

Dubuque began as a mining community when lead was discovered in the area during the 1830s (Wilkie, 1987). It grew rapidly in the 1850s when the railroads began to cross Iowa (Wilkie, 1987). This, along with the city's location
along the Mississippi River, made it Iowa’s largest city at the time. Throughout its history Dubuque’s economy has relied heavily on manufacturing and industry. In the 1800s the major industries were lead, lumber, breweries, and meat packing industries. Presently the city of Dubuque’s major employers are: John Deere Dubuque Works; Dubuque Community School District; Mercy Medical Center; Medical Associates Clinic P.C; Alliant Energy; Flexsteel Industries Inc; The Finley Hospital; City of Dubuque; Eagle Window & Door Inc; and Advanced Data-Comm Inc (Dubuque Chamber of Commerce website, 2001). The city still relies heavily on industry with John Deere and Flexsteel Industries as major employers, but now, like many cities nationwide, the service sector’s importance is increasing.

Dubuque County consists of the following twenty-four cities: Asbury, Balltown, Bankston, Bernard, Cascade, Centralia, Dubuque, Durango, Dyersville, Epworth, Farley, Graf, Holy Cross, Luxemburg, New Vienna, Peosta, Rickardsville, Sageville, Sherrill, Worthington, and Zwingle. Dubuque is clearly the largest city in the county with a 2000 census population of 57,686 out of a county population of 89,143 (US Census Bureau website, 2001). The nearest metropolitan city, a city with a population of
50,000 or more, is Davenport, Iowa located seventy miles to the south with a population of 98,359 (US Census Bureau website, 2001).

The city of Dubuque has become well known for its historic and vital downtown. It is considered by many to be a leader in historic preservation, not only in the state but in the Midwest as well. However, what people consider the exact location of the city’s downtown tends to vary. For some people it may include all land located below the bluff line, while others limit the area to blocks located along a few particular streets. For the purpose of this study the downtown area will be the area defined by Main Street Limited, a private corporation that focuses on community, economic, and architectural issues that occur in Dubuque’s downtown. This same location is used by several of the City of Dubuque’s departments in their projects and studies. It is a seventy-two-block area beginning at the corner of Loras Boulevard and Bluff Street, then follows the natural bluff line south to the corner of Bluff Street and Dodge Street, also known as US Highway 20. From that point it continues east along Dodge Street and follows the

---

1 General information regarding Main Street Limited was obtained during my summer internship with the city of Dubuque, Iowa in the summer of 2001.
shore line until reaching Kerper Boulevard, which it follows to White Street. Upon reaching White Street, the area continues north to the corner of White Street and Loras Boulevard, where it then continues west until it reaches the original starting point. This region includes the future site for the America’s River Project, a nationally known development that will focus on the Mississippi River and will bring multiple community and cultural attractions to the area. Map 1 on page 18 shows the location of the downtown area within the city of Dubuque, while Map 2 on page 19 shows the area in greater detail.

The “fringe” areas include recently annexed land and land located near the outer edges of the city. The city can only grow to the north, west, and south given that its east edge is the state line and that the Mississippi River forms that same edge. During the past year the city of Dubuque has taken a great interest in urban sprawl and smart growth issues. Until recently the city had no growth management plan. However, the city formed a Joint City / County Planning Committee in order to develop a plan to manage growth and limit sprawl while allowing the city of Dubuque to continue to grow and expand. Another major goal
Figure 1: Location of Downtown Area Dubuque, Iowa. Source: City of Dubuque Planning Services Department, 2001.
Figure 2: Detailed View of Downtown Dubuque, Iowa. Source City of Dubuque Planning Services Department, 2001.
is to lessen the impact of Dubuque’s growth on nearby communities and the local rural residents.

Suburban communities are often small towns or other cities that are adjacent or located near the central city. The city of Dubuque has no suburbs within the traditional definition of the word, with the exception of Asbury - see Map 1. Five basic types of suburbs exist: edge-cities, bedroom suburbs, “blue-collar” suburbs, splinter suburbs, and mushroom suburbs (Platt, 1996). Edge-cities are technically a full-fledge city in its own right, having the ability to support all urban functions independently. Bedroom suburbs, such as the city of Asbury, are communities with large-lot housing, no manufacturing, and limited commercial activity (Platt, 1996). For example, Asbury with a population of over 2,000 has no manufacturing and only two commercial businesses. Another type of suburb is the “blue-collar” suburb that started as industrial areas then grew to include other factors of a city (Platt, 1996). Splinter suburbs are quite small and are located rather randomly from the central city (Platt, 1996). The final type of suburb, the mushroom suburb, is one that quickly develops from a small rural village to a major urban entity (Platt, 1996). However, for this study all
communities within Dubuque County and the city of East Dubuque, Illinois will be considered to be Dubuque’s “suburbs” due to the transportation network that allows for quick and easy commuting from those towns to Dubuque. Of all communities in Dubuque County the community of Dyersville is the most independent of the city of Dubuque. Though several of the remaining communities do have job opportunities, most of them still rely heavily on Dubuque for employment, entertainment, and multiple services, thus classifying them more along the lines of bedroom communities. This holds especially true for the communities such as Asbury, Holy Cross, and New Vienna. Some communities such as Peosta, Cascade, and Epworth, may be viewed either way, since they to rely heavily on Dubuque, but are also experiencing commercial and retail expansion.

As ideas for my thesis developed, using Dubuque, Iowa as a case study became more evident. Dubuque was chosen as the focus of this study for following reasons:

- The city has an impressive downtown and a multitude of events occur there, as well as within the community as a whole.
• It is clearly an example of a community that has successful infill development, urban revitalization programs, and a healthy downtown, yet it is also experiencing fringe growth.

• Over the past years the city experienced substantial growth, yet it had no growth management plan incorporated and until this year had no plans to begin to establish a growth management program. This is an important fact for my study because it focuses on the effectiveness of infill development and urban revitalization as a growth management tool. Had the city implemented other growth management tools, such as urban growth boundaries, it would not fit this particular study.

• Selecting Dubuque for the case study was also an advantage, since by working this past summer as a planning intern additional insight on how the community functions and a concept of its goals for its future development could be gained.

**Formation of Cities**

Several theories exist on how cities develop and the form that they establish. Social scientists, such as E.W.
Burgess, 1967, Homer Hoyt, 1939, Edward Ulman and Chauncey Harris, 1945, all developed theories on the formation of cities. This is relevant to the thesis because it will help demonstrate the connection among infill development, urban revitalization and urban sprawl. Resources relevant to this topic included works by Amos Hawley 1981, M. Gottdiener 1994, Christopher H. Exline et.al 1982, and John P. Blair 1995.

Hawley, 1981, analyzed how cities form, grow, and function. It covers topics like urbanization and the decline of cities. The second half of his book discusses how metropolitan areas form and are organized and the problems that are associated with those areas. Though this book was written in 1981 and his theories stem from previous work he had done in the 1950s, the issues are still relevant to today, and many of Hawley's theories still apply to cities in the United States.

M. Gottdiener, 1994, looks at the theories behind French sociologist Henri Lefebvre's urban space, which support today's new urbanist ideals. The theories addressed in this book look at the deconcentration, or the dispersal of people's activities across space, with the focus on the effects of government programs and subsidies,
real estate development, and the overall globalization that the world faces.

*The City: Patterns and Processes in the Urban Ecosystem*, by Christopher H. Exline, Gary L. Peters, and Robert P. Larkin 1982 reviews the history of world urbanization and the urban ecosystem, an idea which stems from Hawley's urban ecology theory. It discusses the factors of spatial change in urban societies. The book also focuses on city and suburban relationships.

John P. Blair, 1995, showed how the market of an area could affect the overall development within a community. It discusses such things as the central place theory and how the demands and supplies within the market can affect changes to the city, including spatial changes.

One of the most basic models for how a city develops is the concentric zone model developed by E.W. Burgess in the 1920s. This model consists of a series of "rings" that make up various sections of the city (Burgess and Bogue, 1967). Always in the center of the city is the central business district, surrounded by a transition zone, with the rings continuing out to homes of the working class, homes of the moderately wealthy, and finally reaching the "commuter zone" (Burgess and Bogue, 1967). This theory
often does not hold true for many of today’s cities, which have multiple centers for their activities. The few examples of where the concentric zone model still exists are only found in the smallest of towns that even today have only one main economic center, often the downtown of a community. This theory also tends to promote the idea that sprawl exists due to the fact that people try to escape the expanding business center; as the economic center grows, it pushes into the residential areas, forcing people to move further away. Gottdiener and others believe that urban sprawl does not stem from the agglomeration of the central city, but due to social structures of peoples lives (Gottdiener, 1994).

In the beginning of its history the city of Dubuque clearly represented the concentric zone model. The commercial and financial institutions developed in the downtown area, which was the center of the community and the only center for the community. Industries and residential areas continued on outward. It could be argued that the city still shows some signs of representing this model. For instance, the homes in the community follow a similar pattern to what Burgess and Bogue presented. People on the edge of the city and in the surrounding
cities clearly represent the commuter zone. However, it is difficult to argue that people are moving from the center of the community to escape the expanding business center, since today in Dubuque businesses centers are located in various locations throughout the city and regulations, such as zoning, protect residential uses of land surrounding the area.

Later in the 1930s Homer Hoyt developed the sector model in which the city still had a primary central business district, but in various “spokes of the wheel” other businesses and residential areas would exist (Hoyt and Homer, 1939). His theory was based on a social or economic hierarchy that determined the location of residences, businesses, and industries (Hoyt and Homer, 1939). Hoyt’s theory also stated that spatial expansion of the city occurred when groups moved out of their present location due to other groups moving into that location; this part of the theory specifically focused on the wealthier individuals and businesses being the ones to move out when poorer individuals and businesses moved in (Hoyt and Homer, 1939). For the city of Dubuque a significant number of lower income individuals reside in the downtown area. However, several wealthy homes and neighborhoods do
exist in the older neighborhoods, particularly the Langworthy Historic Preservation District and the homes along Grandview Avenue.

The multiple nuclei model by Edward Ulman and Chauncy Harris developed in 1945 focused on the idea that a city actually has more than one center (Harris and Ulman, 1945). Cities have multiple centers because of the amount of space they occupy, the value of the land in various locations throughout the city, and the modern transportation system (Harris and Ulman, 1945). Zoning laws and regulations play a role as well in being a deciding factor for the location of many homes and businesses within any city. Zoning can limit and encourage businesses to locate in certain areas, either because it limits where certain businesses can locate or because it creates a more ideal location for businesses to be situated. Many cities today have regulations that separate residences from manufacturing and industrial sites. This forces the development of multiple nodes. The modern transportation system creates other nodes as well, not for only the downtown area, but nodes in the land located along major highways and streets.

For the city of Dubuque, the downtown was the only major center in the city until the mid 1900s. With the
development of John F. Kennedy Road and both Highway 20 and Highway 61 / 151, major centers began to develop towards the south and west ends of the city. The advancements in the transportation network and the increase use of the automobile made it more feasible for people to travel from the bluffs down to the lower land.

The formation of cities may occur in many ways, but how does the shape or form of a city affect its growth? The laws and regulations on the land and its uses influence the form that a city takes. Those same regulations may limit the amount of land available for development, creating a higher value on the land within existing districts (Kaiser, et.al, 1995).

Land values are based on their location within the city. For instance land value is the highest in the center of the city (Exline, et.al, 1982). This in turn affects where people will live and where businesses and industries will locate (Exline, et.al, 1982). Residences and businesses base their location on where they will receive the greatest benefit. If it is cheaper to buy and develop land in the fringe areas, then residences and businesses will locate there unless there are other factors keeping them where the land is more expensive. A couple of reasons
for this are that businesses like to locate near resources that will help lower their costs of production or allow them to be near other businesses that are similar to their own (Exline, et.al, 1982).

In Dubuque you will notice that many unique specialty shops are located along 4th Street and Bluff Street as well as other block areas in the downtown. They form unique niches, which help attract the people in the area and tourists to those locations. The Mississippi River also plays a major role where businesses and industries will locate; almost all major industries that rely on river transportation are located along the city’s harbors.

Due to the modern highway systems, new businesses that cater towards automobile transportation began to appear along major roads, such as K-Mart, Wal-Mart, and Target, which are located along US Highway 20 in Dubuque. Those businesses often require large amounts of land for their buildings and parking lots. Since the central city has been developed and the remaining land is limited in size, it creates higher land values for lots of land, forcing those businesses to move to the fringe areas where land may be more readily available and more economic to develop.
The economy of a city plays an important role in its form and its shape. For instance a healthy economy is one that is also able to attract additional businesses and industries. With additional businesses and industries one can easily expect growth in residential development due to the increase of jobs.

The economic history, from 1980 to 2000 was examined for Dubuque. This information was obtained from Iowa State University Extension’s Retail Trade Analysis, which looks at the following categories for the area: goods and services; retail firms; dollar sales; pull factor; effective buying income; expected and actual sales; surplus or leakage factors; and its overall performance.

During the past two decades the city of Dubuque’s retail businesses increased 151% compared to a statewide average of 116%. The overall retail strength of the city is rather strong. Dubuque experienced higher sales than what is expected by a community of its wealth and size (Stone and Artz, 2000). The city experienced 65.3% more sales than expected in building material sales in the year 2000 (Stone and Artz, 2000). Also in 2000 the city of Dubuque performed higher than expected in the following categories: general merchandise, home furnishings,
specialty stores, and services (Stone and Artz, 2000). Areas where the city performed lower than expected included: food, apparel, eating and drinking, and wholesale (Stone and Artz, 2000).

The pull factor, which is the local per capita sales divided by the state per capita sales, shows the sales activity of an area, while taking into consideration the population factor, the inflation factor and the state's economy (Stone and Artz, 2000). The city of Dubuque, for the year 2000, had pull factors over 1.0 for all eleven categories, which include: building materials, general merchandise, food, apparel, home furnishings, eating and drinking, specialty stores, services, wholesale, and total sales (Stone and Artz, 2000). When compared to the other cities in the top ten of Iowa's population - Dubuque ranks ninth - the city of Dubuque ranks no lower than eighth and as high as second in those categories (Stone and Artz, 2000). The city did especially well in its performance in building materials and general merchandise (Stone and Artz, 2000).

These categories help demonstrate Dubuque's strengths. This is where the city will want to place extra focus on when planning their future economic development. Given the
current events and the upcoming America’s River project these areas can easily be expected to grow and expand. The city can most likely expect to add additional retail and specialty stores to the area, which will in turn spur employment. Based on the city’s current economic health and planned future it is very realistic to expect significant development - business, industrial, and residential - during the next few years.

**Dubuque Iowa’s Land Use and Land Use Development**

Understanding Dubuque’s land use and land use development is critical for understanding the city’s growth and whether or not it is experiencing sprawl. How land is being used and the rate at which it is being developed is significant in determining sprawl. Edward J. Kaiser, et.al, talks about land use planning in the United States. Major topics the book covered were: the formation of cities; the importance of issues such as the economy and demographics in the process of planning for land use; and the role that transportation and infrastructure play. This book along with Exline, et.al’s gave a lot of general information and an overall understanding about the categories of my research for the case study in Dubuque,
Iowa. For instance, both discussed the various functions of the urban form and how they all react with each other. The process under which a city forms affects the layout and the land use of the city, which in turn affects the transportation and other infrastructure as well as the general economy of the city.

Based upon the City of Dubuque’s zoning ordinance and zoning map, Dubuque’s predominant land use is single-family housing. It is found throughout the city, particularly in the western portion. The majority of the manufacturing and industrial uses within the city lie in the outer fringe areas and along the Mississippi River, which allows for easier barge access. Commercial businesses are located downtown and along the highway corridors and two of the city’s major arterials, John F Kennedy Road and the Northwest Arterial. The downtown area is a mixture of uses including all types of residential uses, commercial uses, office uses, industrial uses, and institutional uses. Map 3 on page 34 shows the land use, as of the summer of 2001, for the city of Dubuque’s downtown area.

The city’s 1995 comprehensive plan included specific plans for the downtown region. These included urban revitalization programs and plans for future development
Figure 3: 2001 Downtown Land Use Dubuque, Iowa. Source City of Dubuque Planning Services Department, 2001.
located along the Mississippi River (Carstens, January 2001). In order to accomplish those plans a joint effort among the Downtown Planning Commission, Main Street Limited, and the Dubuque Area Chamber of Commerce, established a list of goals (Carstens, January 2001). The first goal was the Vision Downtown process. This step was carried out during my summer internship with the city. The city carried out an extensive campaign to have citizens answer a questionnaire regarding what they would like to see in the downtown’s future. Vision Downtown was promoted throughout the community via the newspaper and television stations.

The city’s comprehensive plan includes a future land use map in which the city has laid guidelines for the types of development that they would like to see happen within the city. When the city developed the plan one of their main goals was to keep the citizens of the city involved. Almost 5,000 citizens participated in various activities that would impact the Dubuque’s future (Carstens, January 2001). One activity that involved the community was to have citizens color maps with what they desired for future land uses within the city (Carstens, January 2001).
Population and employment forecasts were also included in the Dubuque Metropolitan Area Transportation Study. Woods and Poole Economics of Washington D.C. last updated those figures in November of 1998 (ECIA, 2000). When determining those estimates it was assumed that figures for Dubuque County would represent the surrounding areas in Wisconsin and Illinois as well (ECIA, 2000). By the year 2020 the area is expected to see an employment growth of 20,382 jobs; the majority of this growth will be focused in only a few of the traffic zones designated by ECIA (ECIA, 2000). Of that increase 14,527 are expected to occur in the following areas: Asbury Square Mall, Dubuque Technology Park, Dubuque Westside Industrial Park, the downtown Dubuque, and the portion of East Dubuque, Illinois between US Highway 20 and the Mississippi River (ECIA, 2000). With the exception of downtown Dubuque, all remaining employment growth will occur in areas that currently exist on the furthest fringe areas of the city.

**Urban Sprawl and Growth Management**

Urban sprawl, defined as low density, automobile dependent, growth occurring within and along fringe areas and suburbs, and growth management, which is tools or
policies implemented in order to control urban sprawl, became hot topics and significant political issues in the 1990s, especially in rapidly growing areas. In Iowa it was an issue largely discussed in Polk County and Dallas County, which were experiencing rapid urban growth from cities such as Ankeny, Des Moines, West Des Moines, and Waukee. Major concerns of sprawl include environmental issues, such as the potential or actual destruction of natural habitations. Other concerns were more political or economical. For instance in Iowa the preservation of valuable farmland was a concern, not only for the general economy but also for the political image of the state. Additional research on sprawl included several books.

Eben Foder, 1999, looks at how communities could better themselves if they could control the degree of growth that took place. Foder looks at the myths of growth, i.e., that growth/sprawl is equal to economic prosperity. One of the biggest influences on this particular thesis is what Foder calls "The Catch 22 of Growth," which is, "The better you make your community, the more people will want to live there, until it is no better than any other community" (Foder, 1999). Later Foder talks about the overall cost of sprawl and what communities can
do in order to prevent it or at least diminish its spatial expansion.

Jerry Weitz, 1999, looked at programs in Florida, Georgia, Washington, and Oregon, in examining growth management in general and particular growth management tools implemented by the states. What I gained most from reading this book was the relationships among different governments when establishing effective growth management programs. This applies to Dubuque cost of sprawl and what communities can do in order to prevent it or at least diminish its expansion.

Andres Duany, et.al, 2000, discuss the issue of sprawl facing many cities in the United States. Their ideas are based on the “New Urbanist” form of development, which has as its main principle the idea that designs for future development should encourage mix-uses with pedestrian and transit friendly transportation networks. They discuss their theories on why sprawl occurs and what communities can do to stop sprawl from continuing. Particular reasons Duany, et.al, cite for sprawl are: housing subdivisions, shopping centers i.e. malls, office parks, civic institutions out of place in new developments, and roadways that encourage increases in traffic and automobile use in
general (Duany, et.al, 2000). They feel that sprawl can be combated if all levels of government work together and place emphasis back on design, make the government proactive, and to “think globally, act locally, but plan regionally” (Duany, et. al, 2000). In other words look at not what only affects development in your city has in its own community but the affect that occurs on surrounding cities as well.

Porter, 1997, looks at numerous growth management tools and how they can be applied and how they have been applied in communities across the United States. He looks at growth management techniques that are employed at local levels and at regional and state levels as well. Porter also discusses the downfalls that may come with the use of growth management systems.

As mentioned before urban sprawl is a term that has gained significant notoriety during the past decade. It is in the news and is mentioned regularly in political debates and in proposed and enacted government regulations. Urban sprawl is often confused with urban growth. Many people use the terms as if they were one and the same, though they are quite different.
Urban growth results from the increase of people, businesses, services, and industry in a city or community. It is an expansion of the built environment, or even the economic and social environments. It is a rather general term that depending on its contest can be seen as either a negative or positive thing. Urban sprawl, like urban growth, is also the expansion of the built, economic, and/or social environments in a community. The difference between urban growth and urban sprawl lie in that urban sprawl is characterized as being new development located on the edges of cities or just beyond their boundaries. It is development that "leap-frogs" over undeveloped land in order to gain a position on the "newest" areas of a community, or in communities also known as suburbs. Most often sprawl is largely automobile dependent. Sidewalks are scarce, as are pedestrians, and in many instances of sprawl public transportation is limited as well. Land uses are often strictly divided. Residences are not mixed in with commercial businesses. Urban sprawl is never viewed as a positive thing. Instead it is seen as creating negative effects and a multitude of problems for its communities.
One may ask how urban growth can become urban sprawl. For the United States the country has always experienced urban growth. Urban sprawl however, is a relatively new phenomenon, beginning in the post World War II era. Urban sprawl requires advancements in technology, communications, and transportation, as well as an increase in the wealth or its citizens.

Personal automobile usage allow for individuals to locate their residences further away from their place of work. It also allows for businesses to locate themselves a greater distance from pre-existing business locations. The ability to do such a thing allows for development to occur farther away on the edge of the cities, as well as a way for people to escape their old, declining neighborhoods to go to a new and upcoming neighborhood.

The general increase in personal wealth has also contributed to the effect that the transportation system has on sprawl. For instance, most Americans own an automobile and even more are financially able to own an automobile. This makes it feasible for businesses to cater to the automobile-dependent consumer. Business will also begin to focus more on the automobile-dependent consumer, due to the increasing preference and reliance many people
place on the use of their car. The wealth that the nation as a whole is experiencing also allows for businesses and industries to transport their goods quickly and easily across the nation as well.

The advancements made in the telecommunications industry have also greatly impacted the urban form. Since the late 1990s the Internet and extensive use of the World Wide Web have allowed people and businesses to communicate with each other quickly, cheaply, and effectively. The nation as a whole has seen an increase in the number of individuals who are able to work at home. These telecommuters communicate with their businesses via the telephone and the Internet. Not only does this affect individuals, but businesses as a whole. People and businesses if they are able to telecommunicate, can often locate virtually wherever they want. No longer do they have to locate in one particular place. Instead they can locate in rural areas if they so desire.

**Measurements**

Some people argue that sprawl cannot be measured while others argue that there is a definite way to measure not only sprawl but also its effects. This study will look at different ways to measure sprawl, including: the number of
annexations per year and the amount of land that is annexed; the change in land density over time; the number of new dwelling units in the city compared to the suburbs; and the change in the value of surrounding agricultural or rural land (Porter, 1997).

**Growth Management**

The rate of urbanization is increasing in the United States and with the continuation of the growing population and development attention is being directed towards managing the new growth. The idea of managing growth in our communities first arose after World War II and then again in the 1960s when an overall importance on preserving our environment was being emphasized (Porter, 1997). Though many definitions of growth management exist, there is a general consensus on what growth management is. Growth management begins with the initiation by some form of governmental body in order to create a sense of balance between growth and the preservation of a community, while focusing on community values and development needs (Porter, 1997). The federal, state, or local governments can enforce growth management.

Growth management tools and their applications vary greatly. Some applications may be more technical while
others are more political in nature. Others are considered strong or effective, while others are weak. In general, there are six basic approaches to growth management. These include: urban growth boundaries, development policy areas, exactions, extra-jurisdictional controls, limits on growth, and infill development or redevelopment (Porter, 1997).

Urban growth boundaries appear to be an extremely effective method of growth management (Porter, 1997). It is a definite boundary in which all growth must be contained. It is considered to be a strong growth management tool, because it limits the degree of changes or alterations that can be made (Porter, 1997). It is very technical in nature although it does carry certain political issues along with it. Some people feel that it may limit their rights to own property or that urban growth boundaries place limits on the city’s economy.

Development policy areas are broader and are often a purely technical form of growth management. The local governmental body divides the city into three different categories (Porter, 1997). The first category, the urbanized portion, is the area that is already developed and has existing neighborhoods, while the second category,
the urbanizing districts, are where the current and immediate development will occur (Porter, 1997). The third category is the urban reserve in which a city can set aside land for future development needs (Porter, 1997).

Exactions are what a developer must contribute to a community due to a condition based on their planned development (Porter, 1997). Often the developer has to pay in some way for the impact that the development will have on the community (Porter, 1997). For instance, if a development is expected to increase the number of families with children in a particular area a developer may be required to donate land, services, or money to put towards that area’s school district. Another example would be if the developer were building in a community where open space was limited; the developer could then be required to set aside land for a park.

Extra-jurisdictional controls are agreements between two different governing bodies (Porter, 1997). States vary in how and to what degree they allow cities to control development that occurs outside the city’s limits (Porter, 1997). With extra-jurisdictional controls a community can work with another governing body or bodies, often another...
city or the county, in deciding how growth will be managed in such areas (Porter, 1997).

Limits on growth is a very stringent method of growth management. This often occurs when a community wants none or limited development to occur within their community (Porter, 1997). At times a community may place a moratorium in their community, which will stop all development until it is lifted (Porter, 1997). The final type of growth management, infill development, will be discussed in the following chapter.

**Dubuque, Iowa**

Before writing its comprehensive plan in 1995, Dubuque had no strategy for establishing a growth management plan for the community. The city formed a planning commission with Dubuque County called the Joint City / County Planning Committee, which focuses largely on planning the fringe area of the city of Dubuque and to allow for orderly development in those particular areas (Carstens, January 2001). Updates for the city’s comprehensive plan and the future development of the county’s comprehensive plan will allow them to develop design standards and look at development regionally (Carstens, January 2001). Currently
there is no growth management plan enacted. The city and county are still negotiating certain possibilities.

**Infill Development and Urban Revitalization**

Infill development encourages the use of land already within the city limits, particularly that in the central city, rather than focusing development on the undeveloped fringe areas and suburbs. It focuses on vacant lots or underdeveloped lots (Porter, 1997). Playing an important role in the infill development process is urban revitalization. Urban revitalization programs provide the financial and governmental backing needed in order to help promote such development. The following sources provided information on infill development and urban revitalization.

*Making Infill Projects Work*, by the Urban Land Institute in collaboration with the Lincoln Institute of Land Policy, discusses the basic fundamentals of infill development. It examines what makes infill projects successful and the various roles developers, private owners, and public entities play in the development of infill sites. At the end of the book it looks at several examples of infill projects that had occurred throughout the nation.
Paul S. Grogan and Tony Poscio, 2000, dealt with cities that experienced significant declines in their inner cities. It gives several examples of cities that suffered from poverty, crime, pollution, and other problems and how different acts, either by the government or the people in the communities, bettered those areas of the cities. Though it does not relate directly to Dubuque, which like most Iowan cities does not suffer from high crime rates or pollution, it still talks about the positive effects that revitalization efforts can have on cities.

Oliver E. Byrum, 1992, describes potential solutions to inner city deterioration. This book focuses largely on poverty as being a major force behind the declination of the inner city, and it also focuses on cities with larger populations than Dubuque. However, it also outlines what makes a community successful and what methods are effective in improving the conditions of the inner cities.

Infill development is most likely to occur where there is an already sound economy and a vigorous expansion rate (Smart, et.al, 1985). It is important to note that infill development, when implemented in a rapidly growing area, does not mean that it will accommodate all potential growth but instead will help limit the amount of expansion to the
fringe areas (Smart, et. al, 1985). The most famous case of infill development exists in Portland, Oregon where infill development along with stringent urban growth boundaries has gained national attention.

The Urban Land Institute has conducted several studies on infill development to determine what makes it successful and where infill development is most likely to occur. Typically successful infill development will occur in communities that are economically sound (Smart, et.al 1985). Other factors include the physical terrain of the land, the type of developers in the area, municipal support, and community reaction to infill development (Smart, et.al, 1985).

Urban revitalization is the revival of a declining area within a city, most typically the downtown or the inner city area, in order to improve the overall economic and social health of a city. It differs from regular development that occurs in modern or expanding portions of the city. As development of new residential, commercial businesses, and industries continue to occur along the fringe areas and in the suburbs, often the inner cities and downtowns suffer as people and businesses flee to those newer areas. In order to save their downtowns, cities
incorporate urban revitalization districts or urban revitalization plans to encourage the recuperation of areas in decline. Urban revitalization plans can either focus on the built environment, the social environment, or a combination of both environments.

Two basic forms of urban revitalization of the built environment exist. One is brownfield development. Brownfields are sites that have been polluted by previous industrial or commercial sites and the clean up of such sites amounts to brownfield development (Porter, 1997). Local, state, and national governments all have set standards on brownfield development (Porter, 1997). The main reason that brownfield development is considered to be a form of urban revitalization is that it makes additional land within the inner city available for future development.

The other major form of urban revitalization is in the form of building rehabilitation. This is one of the more common forms of urban revitalization, which involves structural improvements of buildings within the already existing city or those in specified locations within the city limits.
Urban revitalization may also focus on social changes within the communities as well. Urban revitalization programs may include social services, such as police protection, improvement of area schools, and the provision of services to a variety of ages (Utt, 2000). By providing a safe place to live and quality schools for children, communities can increase the appeal of their inner cities. Crime and poor educational facilities are often two of the major reasons families leave the inner city for the suburbs (Utt, 2000). By providing a safe place to live and quality schools for children, communities can increase the appeal of their inner cities (Utt, 2000). Crime and poor educational facilities are often two of the major reasons families leave the inner city for the suburbs (Utt, 2000).

In Iowa, urban revitalization programs offer tax abatements to designated areas within a city. The Iowa Code Section 404.1 allows cities and counties within the state to designate a location as an urban revitalization district if that particular location meets one of the following criteria: an area in need of rehabilitation to improve the health and safety of its residents; an area in need of rehabilitation in order to improve the condition of buildings, increase land values, and improve the overall
character of a community; an area that wishes to preserve or restore the historic significance or its buildings; a specific economic development area; or an area in which public improvements will be applied to housing development (State of Iowa Legislative website, 2001).

Once a reason for establishing an urban revitalization district has been met then the city or county within the state must meet a list of criteria (State of Iowa Legislative website, 2001). The locality has to write a plan including a legal description of the area, a list of all property owners within the area, the value of all the proposed district’s properties, existing zoning and land use in the area, any future improvements in services provided by the city or county, a statement on whether or not any relocation will occur, a list of tax exemptions, and any additional loans or grants that will fund improvements in the area. After the plan has been developed all property owners are notified and a public hearing is held. Once all required hearings have been completed then the local government can accept the urban revitalization plan (State of Iowa Legislative website, 2001).
Measurements

By looking at changes in the land density, much like you would to measure urban sprawl, you can also measure infill development. Another way to measure infill development and urban revitalization is to look at the amount of money invested in the revitalization neighborhoods. Infill development can be measured by the amount of improved square footage in the existing buildings within the city or by the number of building permits requested in an area undergoing infill development. Such indicators will show how much infill development is occurring, what type of development such as, residential, commercial, industrial, or other uses, and whether or not it is increasing or decreasing with time.

Dubuque, Iowa’s Urban Revitalization Program

Dubuque has four urban revitalization programs: Jackson Urban Revitalization District, Upper Main Urban Revitalization District, Washington Urban Revitalization District, and West 11th Urban Revitalization District. The city is currently working on urban revitalization plans for three historic districts: Old Main Historic District, Langworthy Historic District, and the Cathedral Historic District, which is an expansion on its existing program.
All of the city’s urban revitalization programs are based on the State of Iowa’s Urban Revitalization Act. This will allow residential property, or offices that have their primary use as residential, to have partial or total property tax exemption for up to ten years on any improvements that are made to the property. The purpose of the program is to increase the “long-term property improvements” in those areas (City of Dubuque Historic Preservation Pamphlet, 2001). See Map 4 on page 54 for locations of the city of Dubuque’s urban revitalization districts.

The city of Dubuque will allow tax exemption only on improvements made to existing structures and not on new buildings. The building must have a residential use as its primary use in order to qualify for the program. The city assessor will then designate an improvement that increases value to the property. Some examples of such improvements are: building additions, new plumbing, brick restoration, or window replacement. It excludes things such as roof repair, painting, or replacing wiring and plumbing (City of Dubuque Historic Preservation Pamphlet, 2001).

In order for an improvement to be accepted as an exception an application is filed with the city clerk, then
a housing inspector will visit the property (City of Dubuque Historic Preservation Pamphlet, 2001). If the application qualifies, then the city assessor will make the final decision and if approved the improvement will be exempt from property tax for ten years (City of Dubuque Historic Preservation Pamphlet, 2001).

Figure 4: City of Dubuque, Iowa Urban Revitalization Districts. Source City of Dubuque Planning Services Department 2001.
Dubuque Iowa's Transportation Network

It has been stated that, “settlement patterns depend more than anything else upon transportation systems,” (Duany, et. al, 2000). Transportation problems have and always will exist in our cities. Some like Duany et al argue that by increasing the number and size of roads one encourages sprawl, because it lessens the negative impacts of commuting (Duany, et. al, 2000).

Indeed suburban growth, at its current extent in the United States, would have been impossible had it not been for the widespread use of the automobile (Exline, et.al, 1982). The Federal Aid Highway Act of 1944 subsidized highway development in order to spur economic growth across the nation (Exline, et.al, 1982). This Act along with the Federal Aid Highway Act of 1956, which created the interstate and defense highways, paid for 90% of all interstates, allowing for suburbs to avoid such a large cost, yet receive the benefits (Exline, et.al, 1982).

Transportation systems can greatly affect the overall urban form of an area. Many small communities have experienced dying downtowns due to a highway bypass next to
their communities, while others have experienced somewhat of an economic boom due to the businesses and industries that can locate along the city's major roads (Hamin, 2001).
CHAPTER THREE: METHODOLOGY

When doing research in the social sciences one has various methods that may be applied towards the gathering and analysis of data. Different methods include things such as questionnaires and interviews, experiments, observations, and document study (Bailey, 1987). For this thesis, three methods were applied in order to give a more developed scope of the development situation in the city of Dubuque.

Interviewing was selected for this study. The goal of the interview was to achieve an understanding of the current and potential development patterns within Dubuque. Interviewing has certain advantages, which made it the most desirable option. For instance, it allows the interviewer to be more flexible with questions being asked and allows he/she to ask for clarification if at all necessary (Bailey, 1987).

Interviews guarantee completeness and that the interviewees are responding to the questions themselves, without the influences of others (Bailey, 1987). The disadvantages associated with the interview process are that the interviewee has a lesser degree of anonymity and
that interviews can be costly and time consuming if they involve travel (Bailey, 1987). However, since the interviews for this thesis were done via telephone, cost was not a real issue, nor was time since all interviews were completed within or under ten minutes.

The interviews that were conducted were based on a non-random sample. The city of Dubuque has several developers who greatly range in the degree and type of development that they conduct. The goal was to interview developers that are very active and that performed certain types of development, such as infill development or fringe development. In order to ensure that such individuals were interviewed, the City of Dubuque Planning Services Department suggested eight individuals and firms. The initial goal was to interview approximately six individuals or firms and once those developers were contacted, five were able to participate. The number of those interviewed was based on the total number of developers within the community and the number of developers that focused on infill or fringe development. The majority of developers focused on or did more fringe development than infill development. Based on this three infill developers or organizations were interviewed; they also were responsible
for the majority of such development in the downtown area. The initial goal was to have approximately the same number of fringe developers interviewed as well. The fringe developers interviewed, constructed a significant portion, approximately 40% of the fringe development that occurred during the past few years in Dubuque. Please see Appendix for complete list of questions asked.

Two other methods were used in this thesis - observation and document study. Observation was chosen because it allows for detailed study of the events and occurrences that happen in a particular space of organization. Observation has a lot of advantages such as being able to watch nonverbal behavior and learn in greater detail the events that happen compared to those in interviews. Other advantages include studying the event of organization in its natural environment and over a longer period of time. Disadvantages of using observation as a research method include the lack of control one can have over the setting, the lack of anonymity of those being studied, and the difficulties of quantification of the research (Bailey, 1987).

Document study was used frequently throughout the course of this thesis. With this particular method there
are numerous advantages such as typically being of high quality, low costs, and it allows one to look at the trends over time. Common disadvantages of the document study method; such as having documents be in complete, the lack of a standard format, and how the data must be adjusted over time. Document study involves the process of secondary analysis; secondary analysis often has different goals than the original research (Bailey, 1987).

**Urban Sprawl**

Urban sprawl can be measured in various different ways. This thesis will focus on annexation rates, land density, and the change in the number of dwelling units in the community.

**Annexation Rates**

Annexation plays a very crucial role in measuring urban sprawl, as well as the overall spatial growth of a community. When a community annexes land, they not only add to their spatial size and their economic and social potential, they also decrease the amount of land that may have been used as farmland, rural residences, or natural open space.
Annexation rates are relatively easy to determine. Much of the information is readily available at city halls and county courthouses. Annexations are consistently measured in acreages, which allows for easy analysis. Slight variations occurred in the record keeping process of annexations per community in Dubuque County. For instance, some communities, such as Sageville and Holy Cross were so small that they did not keep track of their annexations, while communities such as Dubuque and Epworth kept rather detailed accounts of their annexations.

Initially, the research was to include the total amount of land annexed from Dubuque County from 1990 to 2001 and then a comparison of the communities that annexed land per year would be shown. However, certain communities were unable to provide the numbers of acreages that they annexed, though it was quite obvious that they would have been one of the largest annexors, if not the largest during those years.

Another complication arose with the inclusion East Dubuque, Illinois. This particular city is obviously neither in the same county or state that Dubuque, Iowa is in. However, since it is located directly across the river from the Dubuque, it is largely affected by choices and
events that occur there. Initially the inclusion of annexed land by the city of East Dubuque, Illinois during the same time frame, was to be included to give a general idea of the rate of growth that occurs there was to occur. However, East Dubuque’s annexation and the state of Illinois and that of the state of Iowa differ significantly in their land annexation procedures.

In the state of Iowa, state or county land may be annexed as long as either the attorney general or county attorney is notified ahead of time (State of Iowa Legislative website, 2001). Annexations can be voluntary or involuntary. Voluntary annexations include an application by the land’s residents and may be then approved by the city council as long as the land is not a part of any other urbanized area (State of Iowa Legislative website, 2001). The city council then files a resolution along with a map and legal description of the land to the county recorder and the secretary of state (State of Iowa Legislative website, 2001). As long as the land annexation does not create an island and is contiguous with the city, the secretary of state may approve the annexation.
Land Density

The change in land density is an easy way to measure sprawl, especially since one of the definitions of urban sprawl is low-density development. Land density is the number of people per land area, acres, miles, etc., within a certain location. To measure sprawl for the city of Dubuque changes in land density will be examined over time. This will be done in order to show the effect of urban sprawl.

Dwelling Units

Another way in which urban sprawl can be measured is by looking at the number of dwelling units being added to a community per year. Addition of dwelling units can indicate a variety of things such as a growing population or movement from older homes to newer homes. When looking at the change in the number of dwelling units it is also important to keep in mind the average household size. A community can easily add numerous dwelling units but if the average household size decreases it will not give an accurate picture of population growth. This is a common misperception in many towns; a large amount of residential development will occur but there will be little to no population growth for the community. This thesis will
examine the numbers for new dwelling units for the time period between 1990 and 2000.

**Urban Revitalization and Infill Development**

**Dollars Invested In Urban Revitalization**

An easy way to measure urban revitalization is to look at the amount of money property owners invest in their properties. This can be done specifically for urban revitalization districts or for older parts of the community as well. For this particular study the entire seventy-two block downtown area will be examined. Examining the entire area is rather relevant to the study. Several urban revitalization and urban renewal projects are within the downtown area. The specific locations that are not within the area would still be impacted to a certain degree from such programs, particularly the business owners. If the surrounding areas were improving their businesses and homes, then they would most likely want to do the same in order to keep a certain image for themselves.

The data for the analysis of urban revitalization came largely from the Main Street Limited in the city of Dubuque. As a private company that works to better the
business community in the downtown area of the city, they keep records of the improvements that occur per business and when possible will categorize those improvements as much as possible.

**Measurements for both Urban Revitalization and Urban Sprawl**

By examining the number of building permits that occur each year within a community one can measure not only urban sprawl but infill development as well. This was done by obtaining information on the total number of building permits acquired within the city of Dubuque during 1990 to 2000 from the City of Dubuque’s Building Services Department and the Dubuque Area Chamber of Commerce.

In addition to the total number of permits the number of permits for the construction of new buildings for residential and commercial buildings was also totaled. That particular number can be used to show the increase of development on the urban fringe, because the majority if not all new construction of such buildings would have to occur there given the severe limitations of available land in the downtown area. The remaining permits show the number of significant improvements that were being made to individuals’ property during the same time frame. The city
of Dubuque requires that all property owners undergoing major or significant alterations to their property obtain a building permit from the city.

**Future Development within the City of Dubuque**

**Developer Preferences**

A survey to local developers in the city of Dubuque was given to five developers or individuals involved in the development process within the city of Dubuque. Those individuals were selected based on what type of development they did, where they developed, and their development history within the city of Dubuque.

For the survey, I chose to do a personal interview over the telephone rather than a mailed survey. I chose this method due to the fact that it enabled me to ask for additional information when necessary and to make sure every question was answered. I then typed the responses as accurately as possible during the interview.

Two questionnaires were designed; one was directed towards infill developers and another was targeted at fringe developers. The developers were selected through a non-random sample based on suggestions from the city’s planning department. The first three questions were the
same and the next two were very similar. The remaining questions were directed towards the developer's specific area, infill or fringe development.

The initial questions were asked in order to gain some background information on the developers. The first question asked the developers how many years they have worked in Dubuque. The following questions dealt with why they chose to develop in Dubuque and what type of development they preferred to focus on.

Beginning with the fourth question, the surveys began to vary slightly. The infill developers were asked how long they had been doing infill development and whether or not they felt that there were incentives or disadvantages for doing such development within Dubuque. The next two questions focus on the future of infill development, particularly what the expected influence of the America's River project on infill development would be. The final question asked the developers their opinion on how infill development affected the fringe area growth.

The developers that focused on fringe development were asked questions about how long they had been doing fringe development in the city. They were also asked whether or not they felt they had any incentives or disadvantages for
doing such development. The final questions dealt with what potential impacts they felt fringe development had in the community and whether or not the America’s River project would have any major affect on development located in Dubuque’s fringe area.
CHAPTER FOUR: FINDINGS

Urban Sprawl

Annexation Rates

One way to measure urban sprawl is to look at the annexation rates of a community. If a community is annexing more than they are growing in population, chances are that the land is being annexed in order to allow for additional, lower density development that is more common in the fringe areas of a community. Cities often annex land in attempts to strengthen their city economically, socially, and politically.

For this particular study annexation rates, gathered from the ECIA Annexation Study, performed in February of 2001. The total county agricultural acres lost was looked at as well as the number of those acres that were annexed by the city of Dubuque. The number of residential, commercial, and industrial units acquired by the city of Dubuque were also noted.

In certain years the city of Dubuque was the major annexer of land in Dubuque County. However, this should not be too surprising considering it by far constitutes the largest percentage of Dubuque County’s population. There
were a few years when the city did not annex any land or when the land that they did annex only constituted for less than half of all land annexed. This shows that smaller communities were annexing land rather frequently as well. This study had hoped to show the extent of the land that certain communities within the county had annexed.

While in the recent years the city of Dubuque’s annexation rate has remained relatively low as Figure 5 on page 70 shows, many other communities within the county have annexed significant amounts of land as well. The city of Dubuque heavily annexed land during the early 1990s and then since 1996 have experienced a decrease in annexations. Other communities as well, also annexed large amounts of land in the early 1990s, though the decrease in annexations has been to a lesser extent than that of the city of Dubuque. Most of the annexed land was very rural and not significantly developed residentially, commercially, or industrially as Figure 6 on page 71 shows. Considering that Dubuque County, like the city of Dubuque, only grew marginally during the past decade, this points towards the development of the fringe areas and in smaller surrounding

---

2 Data for community annexation for areas outside the City of Dubuque could only be found in aggregate. Respective community annexation rates were unavailable.
communities throughout the county, especially since the number of buildings annexed. Figure 7 on page 74 further demonstrates the proportion of land annexation that the city of Dubuque is responsible for.

**Dwelling Units**

Based on US Census Bureau information, the city of Dubuque has virtually remained constant since 1990, when its population only grew from 57,546 to 57,686 in 2000. Even though Dubuque’s population has remained static, the number of housing units within the city grew significantly. This growth may be an indicator of urban sprawl. When housing development increases, it most often will occur in newer areas of the community. Also when the number of housing units that are vacant increases or stays the same, it seems to conclude that the population is not growing as rapidly as the development. It is possible that the increase in housing units reflects an increasing number of young couples establishing households in the city. However, the general population trends do not support this; the population for those between the ages of 20 and 34 has declined during the ten year period. Figure 8 on page 75 shows the trend of housing units in the city of Dubuque from 1980 to 2000.
Figure 7: Information Gathered from the ECIA Transportation Study, original source from the Dubuque County Assessor’s Office, Dubuque, Iowa. February 2001.

Percentage of Annexed Dubuque County Land by the City of Dubuque

[Bar chart showing the percentage of annexed land from 1990 to 2001.]
In 1980 the city of Dubuque had 22,160 housing units, of which 1,053, or 4.75%, were vacant. Rental units, totaled 6,975 units, whereas owner occupied units totaled 14,132 (US Department of Commerce via Iowa PROfiles, 2001). In 1990 those numbers increased to a total of 22,377 housing units with only 940 or 4.2% vacancy. The number of rental units totaled 7,265, while the number of owner occupied housing units grew to 14,172 (US Department of Commerce via Iowa PROfiles, 2001). By the year 2000 the number of housing units grew to 23,819 with an overall vacancy rate of 5.3%. The number of rental units was 7,339 and the number of owner occupied housing units increased to 15,221 (US Census Bureau website, 2001). Of the vacant units homeowner vacancy was 0.8% and rental vacancy was at 8.0% (US Census Bureau website, 2001).

During the 1980s the increase in housing units came predominantly from rental units, which grew by almost 300
units during that decade. Since the city also lost population during that time period certain factors for this increase should be considered. For instance, the increase in rental units could have resulted from increases in attendance at the city's three universities. During the 1990s the city added approximately 1,500 more housing units to the city. This is an incredible increase for a community that grew less than 1,000 in its population during the same time period. This time the majority of housing units added were owner occupied units, signaling that many people within the community were moving from their existing home into newer homes.

**New Dwelling Starts**

In the 1990s, new residential development peaked in 1993 and began to drop off for most of the communities in Dubuque County. Figure 9 on page 76 shows new residential starts for the city of Dubuque, Dubuque County, other cities within the county, as well as rural/agricultural dwellings. By looking at the chart, one sees that the number of new dwellings was the greatest for Dubuque County. This indicates that residential development is
occurring outside the incorporated areas and in areas that are not necessarily designated for rural or agricultural homes. This type of development is typical of urban sprawl.

Another characteristic of urban sprawl is that development will increase or spread to surrounding communities, particularly bedroom communities. By looking at Figure 9 on page 78 you can see the new residential development within rural subdivisions, other communities, and rural/ag dwellings located in Dubuque County. The Other Cities category includes all cities within Dubuque County with the exception of the city of Dubuque, while Rural Subdivisions include dwellings that are neither in incorporated communities or are classified as rural/agricultural dwellings.

The figure shows that the city of Dubuque experienced a large increase in the number of dwelling units during the early 1990s until 1996. Rural Subdivisions steadily increased, with the exception of 1997 where a decrease occurred. Other communities in the county steadily increased their numbers of new dwelling starts, while rural/ag dwellings remained fairly low in number and slightly fluctuated.
Figure 9: Information Gathered from the ECIA Transportation Study, original source from the Dubuque County Assessor’s Office, Dubuque, Iowa. February 2001.

New Dwelling Starts

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- - City of Dubuque
- - Rural Subdivisions
- Other Cities
- - Rural/Ag Dwellings
The city of Asbury is largely a bedroom community located directly adjacent to the city of Dubuque. Asbury had a 1980 population of 2,017 people and by the year 2000 grew to 2,450 (US Census Bureau, via Iowa PROfiles website). Well, over 85% of the population is age forty-four or younger, suggesting that most of its residents are young, working families (US Census Bureau, via Iowa PROfiles website). Considering that the city of Asbury has only two businesses, it clearly demonstrates the need for the citizens of Asbury to have to work elsewhere in order to earn a living.

**Density**

One of the key characteristics of urban sprawl is low density development. When a city’s density decreases it could signal a movement towards sprawling development. From information gathered from the US Census Bureau’s website, the density of land development was analyzed. Data from 1970 to 2000 were examined. Land density is the number of people in a given location divided by the land area of that same location. In this particular instance, it was the population of Dubuque divided by the number of square miles in the city. Since 1970 the city has experienced a decline in land density, which points to
sprawling development having occurred. Figure 10 shows the results of the calculations.

Figure 10: City of Dubuque, Iowa Population Density per acre. Information gathered from the US Census Bureau.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>4043</td>
</tr>
<tr>
<td>1980</td>
<td>3698</td>
</tr>
<tr>
<td>1990</td>
<td>2630</td>
</tr>
<tr>
<td>2000</td>
<td>2388</td>
</tr>
</tbody>
</table>

**Urban Revitalization**

**Dollars Invested In Urban Revitalization**

To measure the amount of urban revitalization being undergone in the downtown area, data from Main Street Ltd was gathered. The information details the monetary value of all improvements made during the years of 1990 and 2000. Information on the numbers of permits was not readily available by the company and due to the large number of parcels in the area, well over 700, it was not feasible to search the city’s archives.

The improvements listed included façade, plumbing, electrical, and other structural improvements, while excluding the construction of new buildings. The company then totaled the amount of each improvement per property. The amounts were calculated in absolute terms.
Figure 11 shows the monetary amounts of improvements made in the downtown area of Dubuque. The largest area of improvement was in building rehabilitation, which includes interior improvements as well. The city initiated a loan fund for housing rehabilitation in the downtown area, which offered low 3% interest loan to homeowners and to long-term renters for any improvements that they would make on their property (Dubuque, Iowa Housing Services website, 2001). The popularity of this program can lead to expectations that the rehabilitation and façade improvements will increase during the next year.

New construction constituted for two million dollars work of construction and potentially this number is rather low due to the limited amount of land that is available to build on in the downtown area as well as preservation efforts in the community, which discourages the destruction of historic buildings in order to be replace with newer buildings. However, with the America’s River Project beginning its construction phase the amount of new
construction can be expected to increase rapidly in the next five to ten years.

**Building Permits**

Another way in which one can measure development is by examining building permits issued by the city. Building permits are issued for all considerable development or improvements of property within the city’s corporate limits. The city of Dubuque divides its building permits into three categories: new commercial building permits, new residential building permits, and general building permits. For the purpose of this thesis, building permits from 1990 to the year 2000 were looked at. This information was obtained from the Dubuque Chamber of Commerce and the City of Dubuque’s Building Department, and is shown in Figure 12 and Figure 13 both on page 83.

The information received contains details on the number of permits issued each year and the total value of those permits in absolute terms. The vast majority of all building permits were for preexisting buildings in the city. Of all new building permits, residential permits outnumbered commercial building permits. By analyzing the information, there was a significant increase in building permits between 1993 and 1994 and the number of issued
Figure 12: Information gathered from the City of Dubuque Building Services Department, Dubuque Iowa and the Dubuque Area Chamber of Commerce website.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Commercial</td>
<td>30</td>
<td>23</td>
<td>22</td>
<td>14</td>
<td>18</td>
<td>21</td>
<td>19</td>
<td>18</td>
<td>21</td>
<td>27</td>
<td>21</td>
</tr>
<tr>
<td>New Residential</td>
<td>129</td>
<td>125</td>
<td>191</td>
<td>157</td>
<td>128</td>
<td>128</td>
<td>106</td>
<td>75</td>
<td>61</td>
<td>64</td>
<td>55</td>
</tr>
<tr>
<td>Other</td>
<td>1,242</td>
<td>1,502</td>
<td>1,581</td>
<td>1,612</td>
<td>4,239</td>
<td>6,141</td>
<td>2,417</td>
<td>4,599</td>
<td>1,405</td>
<td>1,416</td>
<td>1,415</td>
</tr>
<tr>
<td>Total Permits</td>
<td>1,401</td>
<td>1,650</td>
<td>1,794</td>
<td>1,783</td>
<td>4,385</td>
<td>6,290</td>
<td>2,542</td>
<td>4,692</td>
<td>1,487</td>
<td>1,507</td>
<td>1,491</td>
</tr>
</tbody>
</table>

Figure 13: Information gathered from the City of Dubuque Building Services Department, Dubuque Iowa and the Dubuque Area Chamber of Commerce website.

City of Dubuque, Iowa: New Building Permits 1990 - 2001
building permits remained rather high for three years. This information leads one to believe that a large amount of development and improvements, perhaps in the form of urban revitalization was being done.

New commercial development appeared to be at its greatest in the year 1999 and remained high for the year 2000 and the years immediately proceeding, while permits for new residential development was the greatest in the early and mid 1990s before tapering off as the decade progressed. This helps conclude that urban revitalization and general improvements made throughout the city may indeed attract commercial development, since an increase in commercial building permits occurred a few years after a large increase of building permits for pre-existing buildings occurred. As far as cashed value is concerned the largest monetary value invested in building permits occurred in the year 2000 when almost 80 million dollars was invested into the community. Of those 80 million dollars, approximately 27 million was towards new commercial buildings total amount towards improvements of existing property within the city and almost 16 million was towards new residential buildings. That leaves almost half
the money invested was applied to projects that focused on improving already existing property within the community.

**Transportation Findings**

The ever-increasing use and dependence on the automobile has greatly impacted cities (Exline, 1982). People can now travel further distances in less time than they have ever before (Exline, 1982). This allows for people to locate on the edges of cities or in suburbs, but still be able to commute to jobs within the central city. Parking spaces are also needed and this has required a change in the overall urban design of urban areas (Exline, 1982).

The East Central Intergovernmental Association developed a long-range transportation plan for the Dubuque, Iowa area in the year 2000. The plan includes an inventory of all existing transportation systems within the region, major transportation issues for the area, future goals and objectives, discussion of all planned transportation projects, and the environmental impacts of such planned projects (ECIA, 2000).

In ECIA’s Long Range Transportation Plan they looked at Dubuque County, Iowa and Jo Daviess County, Illinois
along with Jamestown Township, also known as Kieler, Wisconsin (ECIA, 2000). All three states’ Department of Transportation were involved as well (ECIA, 2000). The goals of the Dubuque Metropolitan Area Transportation Study were:

"Goal 1: To support economic development in the tri-state area.
Goal 2: To improve the safety of the transportation system for all users.
Goal 3: To increase mobility and accessibility for both people and freight.
Goal 4: To protect the environment and improve the region’s quality of life.
Goal 5: To improve the integration between transportation modes for both people and freight.
Goal 6: To promote efficient and coordinated transit system management and operation.
Goal 7: To preserve the existing transportation system." (ECIA, 2000).

In the past thirty years the Dubuque Metropolitan Area Transportation Study was the primary advocate for the major transportation system changes (ECIA, 2000). The projects dealt largely with major roadways going through the city,
including improvements on the Wisconsin bridge, US 151/61 through Dubuque, and the IA 32 project.

Dubuque’s land use is largely impacted by the transportation system that it has. Its network consists of a system of roadways that branch out from the downtown (ECIA, 2000). The roadways allow for mobility and access to land throughout the region (ECIA, 2000). In the city of Dubuque the Principal Arterial system has the second smallest amount of miles, but is also the leading system in the number of vehicles, which travel on it (ECIA, 2000).

The Dubuque Metropolitan Area Transportation Study looked at the human environment, while focusing on such things as race, vehicle availability, transportation mode choice, individuals living in group quarters, income and all of the future estimations on the growth of those factors. When looking at vehicle availability for the people in the metropolitan area, it was determined that vehicle availability would denote how many vehicles were available for general transportation purposes for each household (ECIA, 2000). The urbanized region averaged 1.62 vehicles per household, or a total of 38,196 vehicles within the area (ECIA, 2000). Several households, 2,526 or 10.71% of all households in the urbanized area were without
a vehicle and thus were transit dependent (ECIA, 2000). However, almost 54% of all households in the urbanized area had two or more vehicles for their transportation needs (ECIA, 2000).

The location of the majority of individuals without vehicles for their basic transportation use was in the downtown area of the city of Dubuque (ECIA, 2000). This particular area has a population of 1,872 in 1,002 households according to the 1990 census; each household had an average income of only $14,605 (ECIA, 2000).

The study on race showed that based on the 1990 census almost 99% of all individuals living in the urbanized areas were of white/Caucasian ancestry (ECIA, 2000). The total of households without vehicles was 2,526 with 2,501 white households and 25 non-white households without vehicles (ECIA, 2000). Approximately 15% of all black or African-American households were without a vehicle compared to 20% of American Indian, Eskimo or Aleut descent households, 10.7% of white/Caucasian households, and 7.78% of Asian or Pacific Islander households (ECIA, 2000). However, 99% of all households without a vehicle were headed by whites/Caucasians (ECIA, 2000). This appears to reflect the overall population distribution of the city.
The elderly in the urbanized area constitute the largest portion of the population without vehicles for their personal transportation needs (ECIA, 2000). Of all households headed by individuals under the age of sixty-five, 5.4% are without vehicles compared to 26.37% of households headed by individuals sixty-five and older that are without their own vehicles (ECIA, 2000). Slightly over 64% of all households without their own personal vehicle are in households headed by individuals over the age of sixty-five (ECIA, 2000).

Another portion of the study looked at the transportation mode choice people made for their trips to work. Trips to work can be measured in length, costs, time, and emotional stress (Exline, et.al, 1982). According to Exline, et al, “The fundamental influences associated with the move to the suburb - life cycle and population increase, perception and environmental stress, and transportation and distance - must not be considered as independent and unrelated” (Exline, et.al, 1982). In the past, employment and trade were what drew people to locate in the urban areas; however, in today’s society people are drawn to the suburbs due to other location factors (Exline, et.al, 1982).
"Trips to work make up the largest single group of trips and in most urban areas account for about 25% of all trips on an average day" (ECIA, 2000). The largest demand on transportation systems is from those trips made to and from work, and peoples selection of the mode of transportation for those trips is a strong indicator of what form of transportation they will most likely use for other trips that they will make (ECIA, 2000). The study looked at if individuals took public transportation or if they chose individual vehicles and if they chose individual vehicles whether or not they carpooled (ECIA, 2000).

The results of the study showed that 87.5% of all workers, or 23,991 workers, took personal vehicles (ECIA, 2000). Of that total approximately 12.5% or 2,995 workers carpooled (ECIA, 2000). The public transportation category included such modes as walking, bicycling, bus or trolley bus, taxicabs, motorcycles, other transportation means and the category of workers who worked at home (ECIA, 2000). Walking was the main choice in this category, with 2,198 workers or 8.04% of all workers choosing this as their main means of going to and from work (ECIA, 2000). Six hundred and five individuals worked at home; this category made up 2.21% of all workers in the urbanized area (ECIA, 2000).
Given the recent rise in telecommuting this number could be expected to rise over the next years. All other means of transportation contributed to less than 2% of workers way to travel to and from the work place (ECIA, 2000).

Information gathered by Iowa State University’s Economics Department from the US Census Bureau, shows the travel time to work in 1990 for Dubuque County. All workers age sixteen and older were included and totaled 41,584 (Iowa PROfiles: Resources on Line website, original source US Census Bureau). Of those 2,578 worked at home, while the remaining 39,006 worked outside the home (Iowa PROfiles: Resources on Line website, original source US Census Bureau). The vast majority of people worked under nineteen minutes from home (Iowa PROfiles: Resources on Line website; US Census Bureau). This may conclude that most people work in the community in which they live or commute to other communities within a short distance.

Income plays an important role in determining what transportation choices one makes. When looking at households that earned 80% of the average median household income, $21,868 or less, the average vehicle per household was 1.26 (ECIA, 2000). The households that earned at least
120% of the median household income, $32,802 or more, averaged 2.03 vehicles per household (ECIA, 2000).

By looking at the three factors of race, age, and income, the Dubuque Area Metropolitan Study is better able to forecast all trips, which are defined as "movement by any transportation mode from one location to another" (ECIA, 2000).

**Initial Conclusions**

The above findings support the association between infill development and urban sprawl in the case of Dubuque, Iowa. Much of the development that is happening in the community is characteristic of the development that is urban sprawl. Transportation within the city is largely dependent on the automobile. This allows for people to be able to travel further distances to work, to shop, and to participate in recreational activities. It also allows for the development of businesses that cater to the automobile-dependent consumer. The overall density of Dubuque has decreased significantly over the past few decades and the amount of residential development that is occurring, is not necessarily for those moving into the city or for an increasing population, but for those either already living
in the city and for a community that is experiencing a rather flat growth rate.

When the infill development and urban revitalization appear to be at their peak, the development within the entire city appears to increase shortly thereafter as well. This appears to back the Catch 22 of infill development and urban revitalization. It is the improvement of the center of the city that allows for the development to spread out to the fringe areas of the community and to attract additional businesses, industries, and development in general.

**Developer Interviews**

Throughout the history of American cities developers have played major roles in how the city will emerge and evolve (Duany, et al, 2000). Developers provide a community with many of its basic necessities and often at a significant financial risk (Duany, et al, 2000). Many people blame the developers for the sprawl that occurs, though their developments often are based on the regulation imposed on them (Duany, et. al, 2000). Developers must also build what appears to be the type of development in demand, in other words, what is believed to be what the
people want in order to ensure themselves a profit (Duany, et. al, 2000).

A total of five interviews were conducted over the period of two weeks. These individuals were chosen through a non-random sample, based on suggestions from the City of Dubuque Planning Services Department. Three individuals involved in the infill development process were interviewed, while two individuals who largely focused on fringe development were interviewed. The interviews took approximately five to ten minutes. Instead of interviewing all developers, I also interviewed an architect and organizations. This did not alter the main goal of my interview. Developers A and E focused mostly on fringe developments, while Developers B, C, and D focused largely on infill development.

The first question, “How long have you been doing development in the city of Dubuque?” was asked in order to determine how long individuals and firms had been operating in Dubuque. The answers varied. Some individuals had only been working within the city for a couple of years, though their company had existed for quite some time in the city.

The second question, “Why did you choose to develop in the city of Dubuque rather than other cities?” hoped to
gather information on why developers wanted to work in Dubuque. Most wanted to be in Dubuque either because they grew up in the community or nearby and it was a community in which people stayed. Other reasons included that after World War II the area was seen as a potential growth area and the existing infrastructure as well was a positive for doing business there.

In order to understand what type of development is preferred “What type of development do you prefer to do and what type of development do you actually do in the city of Dubuque?” was asked. There was a slight preference towards commercial development over residential development. The reason behind this is mostly economical because of the profit to cost ratio. The infill developers preferred to do or focus on commercial, governmental, or institutional development rather than residential development. This could be explained by the increase in housing units on the outer areas of the community, putting a lesser need on such development in the downtown area.

At this point in the interview, the questions for infill developers and fringe developers began to vary slightly. The responses for infill developers will be looked at first. The fourth question that the infill
developers were asked was, “How long have you been doing developments in the infill areas of the city?” There responses were identical to the initial question on how long they had been working in the city. Sixteen years was the minimum amount of time.

The next question asked of the infill developers, “Are there any incentives to you as a developer in doing infill development in the city of Dubuque? And if so what are those incentives and why?” Programs such as the urban revitalization programs, tax incentives, and the city’s infrastructure were stated as being incentives for doing such development. The encouragement of these projects allow for such development to occur, because as one respondent stated, it is much easier and economical to develop in a cornfield than it is in the already existing city.

The following question asked them about the disadvantages of doing fringe development. It was expected that financial costs and lack of land would be a major issue for the developers and their responses affirmed this, while also stating that parking was an issue as well as design constraints. Historic districts are located throughout the downtown area and those districts have
limitations on what can and cannot be done to the buildings and property located there. The downtown area also became a major center in the community before the dependence of the automobile arose across the nation. Now with this dependence people may be limited to where they can shop or live do to parking limitations.

When asked about what they thought the future of infill development in the city of Dubuque would be their responses were very positive. This along with the following question of, “What affect do you think infill development, particularly the America’s River Project, will have on infill development in the city of Dubuque?” showed that infill development will continue and will be spurred by the America’s River Project. This project is seen as a way to increase additional interest in the downtown area and to open up more opportunities for development in the downtown.

Returning to the interviews with the fringe developers they were asked how long they had been doing fringe developments within the city. Like the infill developers they had been doing their specific developments for the same amount of time that they had been doing all of their development.
When asked whether or not there were any incentives for doing fringe development in the city of Dubuque the answers were divided. One respondent felt that the city was very pro-active in encouraging new development to occur by offering incentives for particular development such as technology parks. The other respondent felt that the city once encouraged development, but no longer does.

The next question asked them if any disadvantages existed in doing fringe development. The disadvantages seen by the developers were the amount of responsibility placed on them as well as the growth not occurring as rapidly as they would like to see.

The following question was, "What do you think is the future of fringe development in the city of Dubuque?" Their responses were not as positive as those by the infill developers. They see it continuing to grow, but the rate of growth will slow down.

The final question asked was, "What affect do you think infill development, particularly the America’s River Project have on fringe development for the city of Dubuque?" Again their responses were not as positive as the infill developers. They see it affecting the city to
an extent, but since it will not increase the overall population, the impact will be limited.

The overall conclusion of these interviews seems to support the initial conclusion that infill development, along with urban revitalization, can indeed cause urban sprawl. Initial analysis shows that older companies have been working in Dubuque for a longer period of time, while those focusing on fringe development are newer companies. This partially explains why they focus more on development in the downtown area, since at the time that they started, it was the only center or the major center for the city. They all began their businesses in the area because they either have always been in Dubuque or the general area, or because it was seen as a place for potential development.

Infill development seems to be more largely focused on institutional, governmental, and commercial development rather than residential development. The fringe development seems to be more of a mix of all developments. One potential reason for not focusing on residential development in the downtown area could be related to the limited amount of land, and the limited amount of residential structures in the downtown area. Many of the new homes being constructed are rather large with large
lots, which is just not a very realistic form of development in the downtown area. Fringe developments can basically be any type since available land on which to develop really is not much of an issue.

Infill development in the city of Dubuque has definite advantages, particularly the urban revitalization programs and other governmental programs and those by Main Street Limited. Overall the city government within Dubuque is viewed very positively and very proactive in the entire restoration and redevelopment process in the downtown area. When citing the major disadvantages for doing infill development, there were no real surprises. The development in the area is largely constrained by the limited amount of developable land and costs of doing such development.

Fringe development experiences the advantages of a proactive city government as well. Since there is a large interest in attracting more businesses and people to the community it is relatively easy to do such developments. However, a disadvantage is that the growth in the community is occurring rather slowly at the time so it somewhat limits the possibilities.

Those who focused on infill development view the future of infill development rather positively. They feel
that especially with the America's River Project that there will continue to be a rather significant increase in the development in the downtown area. Also if additional steps, such as reopening the Main Street corridor, are done then that should encourage additional business growth as well. They also see development on the fringe areas of Dubuque as benefiting from the America's River Project and infill development as well.

Those who focus on fringe development feel that the future of fringe development will continue to grow, though initially its growth will be somewhat slow. However, they do feel that infill development and particularly the America's River Project will affect and has begun affecting the entire community and will encourage additional development in the outer portions of the city.
CONCLUSION

In conclusion when the infill development and urban revitalization programs are strong and successful, in the case of the city of Dubuque, Iowa, can potentially be associated with urban sprawl. Here the general question of weather growth causes growth was examined. This thesis helped conclude that a certain Catch 22 does exist with infill development and urban revitalization. By improving the inner core of a city or community, it makes it more appealing for businesses and people to move or stay there or within the general vicinity, such as in neighboring suburbs or communities. The improvements in the urban revitalization areas encouraged development and the general vitality of the area. This in turn may have caused the effect to extend towards the fringe and surrounding communities.

The city of Dubuque, despite a flat population growth rate during the past decade, annexed significant acres of land during the 1990s, thus decreasing its land density. The city also experienced rapid development in the number of housing units added to the city. This initially may lead some to believe that the population is increasing as
well however, in reality the population barely grew and the vacancy rate of the housing units increased substantially. The increase in housing units came during a time when urban revitalization and infill development was at full force. All of the above results show that the city is clearly experiencing urban sprawl. The results of the transportation study also pointed to the increasing dependence on the automobile by the people in the Dubuque Metropolitan area.

The strength of the community’s urban revitalization program and infill development is evident when one looks at the amount of money invested in improvements in the downtown area. If you add to this the monetary value of the America’s River Project, the downtown area of Dubuque can easily be expected to continue to invest large amounts of money into the area. The building permit data shows that a large number of improvements are being made to pre-existing buildings throughout the city, as well as the addition of new buildings in the community. Interviewing the developers, it showed that they felt that urban revitalization and infill development did affect the city as a whole, and that with the increase in infill
development development in the fringe areas would occur as well.

Growth, or more specifically urban sprawl, cannot be halted unless more stringent growth management techniques are applied in order to help contain the growth. When infill development does appear to be a strong growth management technique it is often when other techniques, such as urban growth boundaries are applied, that actually contain the growth within a given space.

Though infill development and urban revitalization, seem to cause urban sprawl in the case of Dubuque, Iowa, infill development and urban revitalization still have numerous positive affects that benefit the community as a whole. It definitely provides Dubuque with numerous benefits, such as improving the economy, the city’s aesthetics, the general health and safety of its citizens, along with their general welfare. These programs plainly have definite benefits for the community. However, all the consequences of infill development and urban revitalization need to be recognized before their implementation, such as the potential for urban sprawl or rapid growth due to the city’s strong urban health. This is especially true for the city of Dubuque, which is in the process of
implementing a 1.8 billion dollar America’s River Project in its downtown. By recognizing the potential for such results communities could implement growth management tools to help curb urban sprawl.

The city of Dubuque does recognize its growing need to implement a growth management plan, and during the past year have been working with county officials on developing a joint growth management plan. Many individuals hope that this plan will limit the amount of sprawl that occurs in the city in order to protect surrounding communities and agricultural areas. It is often seen as a way in which the area could help protect its natural features, particularly the bluffs, from future development. The only downfall to this plan is the lack of participation of other communities, particularly Asbury, that are major contributors to sprawl themselves.

The city of Dubuque, Iowa, in general is very proactive in its planning functions. Based on opinions during the interview process, conversations with people in the community, and observations of the daily routine of the planning department the city bases a large amount of their decisions directly on public input and then makes their decisions accordingly. With the increasing interest in
growth management nationwide as well as in the city, the city’s growth management plan along with Dubuque County will help encourage the development and continuation of the regional planning process. This will continue to involve not only the people within the city but those throughout the county as well.

If resources were unlimited, as well as a completely supportive community, it would be suggested that the city of Dubuque, along with other communities, adopt strong growth management tools to help combat sprawl. It is important that urban revitalization and infill development continue in the city of Dubuque with their current strength, for the community and surrounding areas as a whole depend greatly on it for their economic and social well-being. However, it is important to realize the impact of such programs, especially the impact on urban sprawl. The city could incorporate an urban growth boundary, or at least place some limitation on the amount of land that can be annexed into the community during a particular period of time. It would also be essential for Dubuque County to regulate the development of land within the rural regions, to combat the sprawl of rural subdivisions, because without that regulation urban sprawl could still result.
Looking into the future it is realistic to expect that the infill development and urban revitalization efforts will continue to remain strong in the downtown Dubuque area, especially with the addition of the America’s River Project and the encouragement that it will provide to other such developments. Urban sprawl will also be expected to continue in the upcoming years, until a growth management plan can be produced and enacted by the participating governments. Once an additional growth management technique is implemented, the urban sprawl rate can be expected to decrease, however to what degree depends greatly on the overall strength of the technique.

Additional studies on the cause and effect relationship between infill development and urban sprawl need to be conducted in order to obtain a greater understanding in the cause and effect relationship that may exist. Along with these studies or as separate studies the various growth management tools should be tested in communities with urban revitalization and growth management in order to determine the most effective techniques.

These studies will be beneficial to the planners and communities that experience aggressive urban revitalization and infill development. It will enable them to have a
better understanding at what their community is facing and possible ways in which to prepare for the potential sprawl they may experience. Dubuque, as well as other communities, that are undergoing urban revitalization projects could limit sprawl through the usage of urban growth boundaries, applied within reasonable limits. They could also regulate the density of the development that does occur along the fringe areas of the communities.
APPENDIX

Interview Questions and Developer Interviews

- Question 1: "How long have you been doing development in the city of Dubuque?"

- Question 2: Why did you choose to develop in the city of Dubuque rather than other cities?"

- Question 3: "What type of development do you prefer to do and what type of development do you actually do in the city of Dubuque?

- Question 4 (Infill Developers): "How long have you been doing developments in the infill areas of the city?"

- Question 4 (Fringe Developers): "How long have you been doing developments in the fringe areas of the city?"

- Question 5 (Infill Developers): "Are there any incentives to you as a developer in doing infill development in the city of Dubuque? And if so what are those incentives and why?"

- Question 5 (Fringe Developers): "Are there any incentives to you as a developer in developing in the fringe areas of the city? And if so what are those incentives and why?"
• Question 6 (Infill Developers): “What are the disadvantages of doing infill development?”

• Question 6 (Fringe Developers): “Are there any disadvantages existed in doing fringe development?

• Question 7 (Infill Developers): “What do you think about the future of infill development in the city of Dubuque?”

• Question 7 (Fringe Developers) “What do you think is the future of fringe development in the city of Dubuque?”

• Question 8 (Infill Developers) “What affect do you think infill development, particularly the America’s River Project, will have on infill development in the city of Dubuque?”

• Question 8 (Fringe Developers): “What affect do you think infill development, particularly the America’s River Project have on fringe development for the city of Dubuque?”

• Question 9 (Infill Developers): “What affect do you think infill development, particularly the America’s River Project, will have on fringe development in the city of Dubuque?”
Question 1: “How long have you been doing development in the city of Dubuque?”

Developer A: 1982

Developer B: Personally a couple of years, while the company has been in Dubuque for fifty-three years.

Developer C: Personally two years, while their business has been operating in Dubuque since 1887.

Developer D: Since 1985, their organization is the oldest of its kind in the nation.

Developer E: From about 1980/1981, with some other development experience prior to that.

Question 2: Why did you choose to develop in the city of Dubuque rather than other cities?”

Developer A: It was where he lived and the job was hands on and allowed him to see things happen.

Developer B: Dubuque was seen as a real growth area after World War II, plus it had the Mississippi River and the fact that it was located at the junction of three states going for it.
Developer C: They have always been here.

Developer D: It was initiated as part of a nationwide pilot program.

Developer E: The people in Dubuque are “die-hards,” they will often stay around in the area. The infrastructure is very attractive, including the water system, education system, and the general support from the community.

Question 3: “What type of development do you prefer to do and what type of development do you actually do in the city of Dubuque?

Developer A: He does all types of development, such as commercial office parks and residential structures. The commercial development is more of a long-term investment where the residential development is something where they will buy and develop the land and sell off individual lots. He has no particular preference.

Developer B: They do all but residential. They have
done some residential in the past but those projects are very few and very limited. They focus mostly on public institutions and governmental buildings. They focus mostly in the downtown area as well.

Developer C: They don’t do developments, but they concentrate their businesses in the downtown area.

Developer D: They focus on the overall economic development and design and preservation of the historic architecture of the downtown area. They also look at the organization of businesses and the overall promotion of the downtown area, by promoting festivals and other activities. They do nothing outside of the downtown area and leave those target areas to the Greater Dubuque Organization.

Developer E: They prefer to do residential, though it is very expensive to do. They do residential and commercial development. The commercial development is really tied to and dependent on the economic indicators of the community.
Question 4 (Infill Developers): “How long have you been doing developments in the infill areas of the city?”

Developer B: For fifty-three years.

Developer C: Since 1887.

Developer D: They have worked with such development since 1985.

Question 5 (Infill Developers): “Are there any incentives to you as a developer in doing infill development in the city of Dubuque? And if so what are those incentives and why?”

Developer B: Yes, Main Street Limited and the City of Dubuque offer a lot of incentives to do restoration in the downtown area, such as the urban revitalization programs. The city has good infrastructure and the city government is very easy to work with.

Developer C: Yes, the downtown rehabilitation loans, the urban revitalization and urban renewal programs, as well as additional state and federal tax programs.

Developer D: Absolutely, and they seek out as much assistance as possible. Since brand new facilities in cornfields are the easiest
things to develop as far as construction goes, there is a definite need for the new programs relating to the downtown area. The downtown rehabilitation loan fund, sponsored by City’s TIF program, just ran out of money; it was very successful. The state considers it an enterprise zone to develop. Tax credit programs at the federal and state level as well as those branches giving out loans, when the rehabilitation of downtown buildings for new uses is undergone. The Dubuque Main Street Limited loan pool, which is also sponsored by the four local Dubuque banks, also offers a loan with a rate below the market rate. and sponsored by four Dubuque banks.

Question 6 (Infill Developers): “What are the disadvantages of doing infill development?”

Developer B: There was a need a few years ago to overcome parking problems; it has since been addressed and the parking is adequate. Other disadvantages include the amount of land that is available and that most of the
property being rather small or only a single floor within a building. If property is within the historic districts, it has a lot of regulations to work around, though overall they like the program. The Ice Harbor Project [America’s River Project] has initiated new design guidelines, which will restrict some development, but that too is seen as being more of a positive than a negative.

Developer C: The initial perception, which she believes is correct is that it is very expensive. However, it is a choice. You can make a building in the downtown an exceptional place if you put enough hard work into it. It will increase your general pride in what you do as well as the city as a whole.

Developer D: The positives far outweigh the negatives. In the downtown there are very few opportunities to start from scratch, and there are some constraints, especially as far as design goes. Also, there are parking
problems, no cars originally existed downtown and now there is a car in every household or two cars. People drive everywhere.

Question 7 (Infill Developers): “What do you think about the future of infill development in the city of Dubuque?"

Developer B: It will increase, especially things to do with recreation.

Developer C: Hopes that it will continue to be good and to increase as well. It will help if they open the Main Street corridor [currently a pedestrian mall]. If businesses are to survive in the area they need traffic and the people that go along with that. They hope that opening Main Street and increasing infill development will attract people to locate their businesses there, to shop there, and to live there.

Developer D: Fantastic, 188 million dollar America’s River Project is causing and creating availability for development on the 4th St Peninsula. There will be a dramatic
increase and it will spur a lot of infill in those districts, especially in the reuse of historic buildings, which will certainly be generated. General interest in downtown will increase even more.

Question 8 (Infill Developers) “What affect do you think infill development, particularly the America’s River Project, will have on infill development in the city of Dubuque?”

Developer B: There will definitely be an increase and it is already having its effect on the community. It has already spurred more reconstruction in the downtown area.

Developer C: Yes, especially if things are done to Main Street as well.

Developer D: [No answer, stated in previous question]

Question 9 (Infill Developers): “What affect do you think infill development, particularly the America’s River Project, will have on fringe development in the city of Dubuque?”

Developer B: It won’t have too much of an affect, and hopefully the downtown will be more of a focus.
Developer C: They hope that the increase in the job opportunities will benefit the downtown mostly, but realistically they would need residential fringe development to provide for additional housing. Therefore housing development in the fringe area would most likely increase.

Developer D: They believe that visitor traffic and quality of life will gain many fold from the government investments and incentive programs. The entire city will benefit greatly. It’s [the downtown] essential, it’s still the core of business and government, and if you ignore that then you’ll rot from the inside out; it’ll be nice on the outside but terrible in the inner area. It’s crucial to have a strong downtown.

Question 4 (Fringe Developers): “How long have you been doing developments in the fringe areas of the city?”

Developer A: 1982

Developer E: Since 1980/1981. The first development was a subdivision just outside of Dubuque.
Question 5 (Fringe Developers): “Are there any incentives to you as a developer in developing in the fringe areas of the city? And if so what are those incentives and why?”

Developer A: Yes, the city is very pro-active and very interested in allowing the community to grow. There are several financing incentives for residential development, technology parks, and industry to lure people to the community.

Developer E: There used to be but not really any more.

Question 6 (Fringe Developers): “Are there any disadvantages existed in doing fringe development

Developer A: The growth isn’t occurring fast enough and that limits the amount of development that can be done. He does feel that the situation is slowly changing and expects it to continue to grow.

Developer E: You have to be responsible for everything, things that normally would be the city’s responsibilities, on the outer edges of the community.
Question 7 (Fringe Developers) “What do you think is the future of fringe development in the city of Dubuque?”

Developer A: It will continue to grow though initially that growth will be slow.

Developer E: It will slow down slightly due to a struggle that the city has with various developers in the community.

Question 8 (Fringe Developers): “What affect do you think infill development, particularly the America’s River Project have on fringe development for the city of Dubuque?”

Developer A: He thinks that the community as a whole will be affected by the America’s River Project. For example there is large amount of development planned the West End Group Loft Development, which is a huge shopping development on the west end of Dubuque.

Developer E: Yes, some at least. However, they feel that the project really won’t cause an increase in the population, which is what is really necessary in order for the development to increase.
WORKS CITED


City of Dubuque, Iowa Planning Services Department. GIS maps, Summer 2001. Planning Services Department, 50 W 13th Street, Dubuque, Iowa 52001.


Hamin, Elisabeth. Community and Regional Planning 584, Sustainable Communities course lectures. Iowa State University, Ames, Iowa. 2001.


Iowa State University, Department of Economics. Iowa PROfiles: Public Resources Online. Iowa State University, Ames, Iowa. October 2000. Downloaded November 15, 2000 from the website http://ia.profiles.iastate.edu/county/dubuque.html


