Development of a Wayfinding System for the Blackstone Canal

An Interactive Qualifying Project Report

Submitted to the Faculty
of the

WORCESTER POLYTECHNIC INSTITUTE
In partial fulfillment of the requirements for the
Degree of Bachelor Science

And to the

Worcester Cultural Economic Development Office

June 30, 2006
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Abstract

Worcester has many of the outstanding attributes that define a creative economy, but they are not well defined spatially. A wayfinding system is a way to promote Worcester and catalyze economic and social development. In this project the historical and present conditions of the Blackstone Canal were researched. It was recommended that in constructing a wayfinding system a brand is developed that is based on the core values that defined the Blackstone Canal district: community business, education, faith, and heritage.

Acknowledgements

I would like to take a moment to recognize several individuals and institutions that help guide the success of this project. I would first like to recognize the Worcester Historical Museum and providing me access to their historical archives and providing with a area to conduct the research. Among the staff of the Worcester Historical Museum I would like to give exclusive recognition to Robyn Christensen, head librarian. Robyn Christensen provided the attention to assure that that appropriate documents were supplied and kept in order. I would like to express my deepest gratitude to Lance E. Schachterle, who took the time to provide me with the appropriate knowledge of good sentence structure, so as to communicate more clearly and affectively. Last but not least, to my project advisor Robert Krueger, his guidance, insight and direction helped in my understanding of the task at hand.

Table of Contents

Abstract 2
Acknowledgements 3
Table of Contents 4
List of Figures 5
Executive Summary 6
1 Introduction 15
2 Background Research: 19
2.1 The Creative Economy: What and Why? 20
2.2 The Problem with Worcester's Creative Economy: 27
2.3 Wayfinding system: Why? 29
2.4 Constructing an Identity: Branding 31
2.5 Summary 33
3 Methodology 34
3.1 What are the Historical Conditions of the Blackstone Canal district? 35
3.2 What are the present conditions of the Blackstone Canal district? 36
4 Discussion and Results: 37
4.1 How the Canal came to be. 37
4.2 The Good, the bad, and the Canal: 40
4.3 The Death of the Canal: 42
4.4 With the Canal came the Irish. 43
4.4.1 The Irish and their faith: 44
4.5 With the Canal came Industry. 45
4.6 Education 47
4.6.1 Education gives birth to Wyman & Gordon. 48
4.7 More Industry 49
4.8 Irish to French Canadian 51
4.8.1 The French Canadians and their faith 51
4.9 From French Canadians to Lithuanians 52
4.9.1 The Lithuanians and their Faith 53
4.10 The Polish 55
4.10.1 The Polish and their faith. 55
4.10.2 From faith to businesses 56
4.11 I-290 cuts off the Life stream 59
4.12 Current Conditions, as of 2000: 65
4.13 Summary: 69
5 Conclusion and Recommendations 71
References 74
Appendix A: MCAS for schools in Worcester 76
Appendix B: Census Data 82

List of Figures

Figure 1(Census Tract 7325, Worcester County Massachusetts) 66
Figure 2 MCAS results for Union Hill School 76
Figure 3 MCAS for Jacob Hiatt Magnet..... 77
Figure 4 MCAS for Grafton Street 78
Figure 5 MCAS for Accelerated Learning Labs..... 80
Figure 6 MCAS for Chandler Elementary Community..... 81
Figure 7 School completed by persons 25 years and over in the U.S. 1969..... 82
Figure 8 DP-1. Profile of General Demographic Characteristics: 2000 84
Figure 9 QT-P32 Income distribution of households and families: 2000..... 85
Figure 10 DP-2. Profile of Selected Social Characteristics: 2000 86
Figure 11 QT-P35. Poverty Status in 1999 of Famlies and Non Family Households: 2000 87
Figure 12 DP-3. Profile of selected economic characteristics: 2000 90
Figure 13 DP-4. Profile of selected housing characteristics: 2000..... 92
Figure 14 QT-H10. Units in structure, householder 65 years and over and householder below poverty level: 2000..... 93
Figure 15 QT-H11. Vehicles available and Householder income in 1999: 2000..... 94
Figure 16 QT-P22, Place of Birtth and Residence in 1995: 2000 95
Figure 17 QT-P14 Nativity, Citizenship, and year of entry, and region of Birth: 2000 ... 96

Executive Summary

The economy is changing! Many of the old models that were used to predict economic behavior in industry sectors have become obsolete. They cease to recognize and take into account the changes that have occurred in the economy, specifically the global, technical, and demographic transformations. The demographic changes have resulted in an increase in wealth and leisure time. This increased wealth and leisure time has led to niche audiences and new markets. The new markets that are rising in response to the demographic changes have created opportunity for arts recreation and tourism activities, as well as a greater emphasis on quality and design of products and services. Second to the demographic changes are the changes in globalization. When it comes to innovation and the creative processes, globalization has created a more competitive market. The standard of global competition has been modified with the need to be fast flexible and forward thinking. Finally the digital economy has provided flexibility for people to do what ever they want when ever they want. This flexibility gives people the option to locate in the community of their choice. No longer are people constricted in their choice of residency. This raises the importance of quality of life within an area and forces communities to look at their support for the arts and culture to attract the brightest of people.

Many are aware of the significant financial impact that the arts and culture have on generating revenue and supporting jobs. The New England Foundation for the Arts concluded that nonprofit cultural organizations and attractions generate 3.9 billion in revenue each year while supporting more than 110,000 jobs within the region (NEC, 2000). What is crucial to recognize apart from this is that the creative economy, which encompasses the nonprofit cultural organizations, provides many of the defining attribute for an area to compete in the new economy.[1]

Worcester, the second largest city in the commonwealth of Massachusetts, has an abundance of cultural activities. Worcester, being home to over 35,000 college students and 176,000 people, features world renowned museums, concert halls, theaters and galleries. Many of these cultural institutions are of international and national importance

[1] The creative economy is a theoretical concept that has various definitions. For a definition of the creative economy refer to 2.1

for example: the Worcester Art Museum, the state's second largest fine art museum, the American Antiquarian Society, a national historic landmark and the oldest national library focusing on early American culture and history. Mechanics Hall is recognized as the nation's finest pre-civil war concert hall and is a national historic landmark. Along with an abundance of pre-existing cultural institutions, Worcester's cultural organizations have recognized the work and programming of contemporary artists living and working in the community. Worcester Cultural Coalition (ND) (hereinafter WCC) found: "The American for Arts Economic Impact Study on the Arts Industry (2000-2001) determined that Worcester's not-for-profit arts activity generates a $48.23 million dollar industry, attracts over one million audience members annually, supports approximately 1500 jobs, and delivers $4.2 million in local and state revenues" (pg 3)

It is clear that Worcester possesses an enormous content of arts and culture. What is the problem? WCC stated: "finding your way in Worcester is an ongoing issue of concern for the City. Many Visitors complain about the lack of signage and inability to successfully navigate the city's streets in an effort to attend a cultural activity." (p. 1). From this it is clear that there is problem in the spatial definition of how Worcester's arts and culture and hence its creative economy are defined. As stated by the WCC (ND) "our goal is to redefine the Worcester Way" (pg 1).

The larger issue at hand is the sustained development of Worcester, specifically in terms of developing its creative economy by attracting creative workers and enhancing the quality of life within an area. In this project, I set out to promote the economic and cultural development of Worcester by redefining the way in which Worcester's was spatially defined. Displaying Worcester with affective signage will help the community and visitors to avoid from getting lost and make Worcester more attractive to the public eye. By redefining Worcester spatially I hope to promote the economic and cultural development of Worcester. The WCC (ND) would like to define "a way finding system that would benefit all of Worcester, stimulating the economy by substantial public display of Worcester's many educational and cultural assets" (p. 2). An "effective wayfinding system program presents a simplified layering of selected information that allows the visitor to navigate through unfamiliar territory with confidence and to gain a sense of place in the process." (WCC, ND, p. 3)

The WCC (ND) gave a description of the ideal situation;

> "The ideal plan is such that is it would divide the city of Worcester into a logical system of districts, corridors, or neighborhoods, and will develop for each signage elements with a distinctive graphic design, using attractive colors, logos, and motifs reflecting the unique character_and history of the area. With this ideal situation organizations and businesses will be able to use these new division designations to describe their location in marketing materials, and collaborative maps and websites can affectively utilize schematic depictions of the divisions in city wide promotions. When a visitor is driving along the highway through the city, signs will be visible to the individual indicating the appropriate exit for each division; if it is necessary to drive through one division to reach another, signs along surface arteries will provide further direction. The use of designated graphic design elements at gateways and on street signs will allow the visitor to readily identify which division he is in, and as he nears his destination, directional signs will point the way to cultural, educational, recreational, and important civic locales, as well to parking facilities."(p. 3)

In order to design an affective wayfinding system for the city of Worcester, I needed to know what content is relevant. As stated in the ideal situation, districts will be represented with logos that accurately reflect the history and character of that area, but what is the history and character of a particular district under study? This project consisted of site research on the Blackstone Canal district. The site research constituted studying the history and present conditions of the Blackstone Canal district. From this research, I was able to propose recommendations for how the Blackstone Canal district and its people could define their community. Upon completion of site research, conceptual development involved: what are the properties of an affective way finding system, and what is the relevant content to the district under study? (i.e. Blackstone Canal district) One of the main objectives of this project was to have the people involved in the development of the community's identity. The importance of having the community involved in site research is because the wayfinding system is a community resource. With the construction of the appropriate content, by having the people involved, an affective wayfinding system can be constructed.

The aims of my research were geared to establishing successful content so in the future an appropriate wayfinding system may be constructed that promotes the true

character of the district. The content extracted from the site research was based on the historical conditions and present conditions of the Blackstone Canal district. The results of the research displayed a character, which was in embedded within the community, and show much potential for formulating a bases of a brand identity. With the understanding of the community and my recommendations one will be able to generate signs, logos, and icons that accurately reflect the identity of the Blackstone Canal District.

The creative economy, according to the NEC, is defined by the creative cluster, creative workforce, and creative community. Similarly, according to the U.K., the creative economy is defined solely by its creative industries. In either case, it has been shown that the creative economy is a key contributor to a region's economic competitiveness in the new economy, with the new economy being a result of demographic, global, and technical transformations. Not only does the creative economy help an area economically, but in addition it provides an enhanced quality of life. An enhanced quality of life in a city renders itself to be more desirable, more desirable in terms of displaying the regions historical and cultural content. The reason why Worcester should care is it has the rich cultural and historical attributes that could help to define an enriched quality of life for many of the citizens of Worcester, they are just not well defined spatially. People are getting lost. For Worcester to have a leading competitive edge in today's new economy it must make use of its many cultural and historical attributes to better attract tourists and draw in creative people. The issue is not the quantitative level of historical attributes that compose Worcester but the way they are defined spatially. A wayfinding system will help to better spatially represent Worcesrter's creative and historical attributes, and help to identify Worcester's brand identity as a "home for the arts" (WCC, ND, p. 1).

The purpose of this project was to capture an accurate representation of the Blackstone Canal district's character. In terms of character, I focused on what are the core values and attractions that define the culture of the Blackstone Canal district. What was crucial in this research was the connection of why and how, as apposed to what. This was achieved by looking at relationships of events of the past and their connections with the present.

The research topic was centered on analyzing two questions:

1. What are the historical conditions of the Blackstone Canal district?
2. What are the present conditions of the Blackstone Canal district?

The historical research provided an understanding of the relationships among issues that have influenced the past, continue to influence the present, and will certainty affect the future (Berg, 2004, pg 324). From this content a general understanding of the Blackstone Canal district's culture was established. With knowledge of the present conditions as well as the past, relationships were drawn and a better understanding of the culture was developed.

Upon establishing a thorough understanding of the Blackstone Canal district and how it came to be, the content of an affective wayfinding system, that does justice to the Blackstone Canal district, was established through recommendations. In addition the economic and cultural standing of the district was established and further recommendations were concluded.

There is little debate regarding the overall economic success of the Blackstone Canal district. Many sources agree that the construction of the Blackstone Canal was a. economic flop for builders and investors. The canal only operated successfully for seven years; but, when the rail system finally got its feet off the ground, business for the Blackstone Canal Co. suffered. Eventually the company went bankrupt and had to sell of water rights in order to pay off what share holders they could; but, many share holders and investors did not receive their appropriate dividends and made nothing. Was the Blackstone Canal a failure? Ask any share holder at the time and they might hang you for such a rhetorical question.

The Blackstone Canal was not a failure in many ways. The Blackstone Canal, the working spine of the Industrial Revolution and a magnet for Irish immigration: brought increased trade, wealth and economic development, an increase in population, and acted as a catalyst for fostering economic development in neighboring areas. It was a result of theses changes that made the City of Worcester what it is today.

The Blackstone Canal brought life to the city by bringing in Immigrants who valued fundamental components of a stable community. For many of them, this meant religion, education, and preservation of one's heritage. It was these core values that gave

many of the immigrants the strength to work the long shifts in the mills, and it was the hard workers in the mill that helped shape Worcester during the Industrial Revolution.

These core values were not exclusive to the Irish, but shared amongst many: the Polish, Lithuanians, and French Canadians. They all shared a common link in the value of their faith and education. Although they practiced their faith separately, they all practiced economic development as one.

Today the Blackstone Canal district is a byproduct of Green Island, as a result of the construction of I-290. Many of the specialty stores that were tailored to the consumer are no more. King Neptere Seafood Inc, The Fruit and Garden outlet, and Maurice the Pant's Man are all gone. Millbury Street which was ounce busier than Main Street struggles for its economic survival in drawing in outside people, due to negative external perceptions. Many of the revitalization efforts that were geared towards restoring Green Island to what it was are replaced with new efforts to turn it into a tourist attraction, with the implementation of a canal replica. The Green Island revitalization Task Force, which wanted to preserve the ethnic pride and character within the streets, is no more. The Blackstone Canal district needs a method to figure out what it is all about and share it with the rest of the world.

When asking myself what stories I felt were important to the Blackstone Canal district, I could have said it was the Providence Merchant John Brown and his vision for using the canal as an affective way to transport goods, or Nathan Heard who had the idea of marketing his goods with *by the canal* equals *freshness*, but these were just preliminary events to the bigger picture. After studying this district and its historical conditions and looking at the present conditions, I have concluded that it was the Blackstone Canal that gave birth to the city, but it was the people that gave birth to the canal, the neighborhood and hence the city. As a result I think that it is important to, if not preserve, but recognize the rich heritage that exist or existed in the Blackstone Canal district, by recognizing the people.

Recent talk is for a replica of the canal. Much promotion centers on the notion of "Free the Blackstone", a saying that rebounds off the tragic fait of how the canal was buried and to become part of the Worcester sewer system. Although it is sad that the canal was dissolved ounce its economic feasibility ran dry, it is also sad what the I-290

did to the Green Island district. I am not siding sympathetically with one or other, but I am more trying to establish a common link of tragedy between the two events. It was tragic in the sense that the implemented change of I-290 did consider what was already there (i.e. Green Island), but only looked at what they wanted it to be. It is for this reason that I, after long thought, propose that a wayfinding system will help to promote the surfacing beauty of what the Blackstone Canal is and was, by marketing some of the core elements that defined the strength of its community: heritage, faith, education, and community businesses.

The Blackstone Canal district is and was an area that valued its heritage, faith, education, culture, and generation stores. It was the people of this heritage that supplied much of the driving workforce for the mill during the Industrial revolution. It was these same people that built the homes that many people still live in today. It was the same people that brought their faith and preserved it and would not compensate it in order to be accepted. It was these same people that built schools for their children to ensure the survival of their offspring. It was these same people that started businesses and specialty stores that would provide a service for their community. Much like the canal was the backbone for the industrial revolution; the immigrants were the backbone or working spine of Green Island and Worcester.

Karen Finucan (1999) in her article "Way to go" summarized that wayfinding systems are a great way to market an areas resources, alter negative perceptions, evoke a sense of an area's history and character, and improve streetscapes. The primary focus is to take into account the negative image that has plagued the community for the past couple of decades. Foley (1986) commented in Business Week that one of the biggest problems is the image of the community. I propose that negative perceptions be altered by marketing the Blackstone Canal district's resources. In this case, its resources being the history and character that ounce filled the streets.

In regards to the future efforts to construct a wayfinding system for the city of Worcester, preliminary attention must be centered on constructing a brand or several brand identities for the Blackstone Canal district. It is my hope that with proper attention being devoted to establish an affective brand, a wayfinding system can be constructed that will market the areas resources, alter any negative perceptions, evoke a sense of the

Blackstone Canal district's character, and improve streetscapes. The following are recommendations that should be considered when formulating the districts brand.

Recommendation: The Blackstone Canal, working spine of the Industrial Revolution and magnet for Irish Immigration, acted as a catalyst for fostering economic development. The Brand should symbolize the canal's contribution in industrializing Worcester and assuring that it will never again be compared to areas such Lancaster or Stow. The Blackstone Canal gave birth to the city.

Recommendation: Although it was the Blackstone Canal district that gave birth to the city, it was the people that gave birth to the Blackstone Canal, the Green Island neighborhood and hence the city. When developing a plan for revitalization the city should not just consider marketing resources that are concrete locations, but culture too, specifically the core values that were shared amongst the people of the Blackstone Canal district and Green Island: heritage, faith, education, and community businesses.

Recommendation: The Blackstone Canal district was a melting pot for Irish, Lithuanians, Polish, and French Canadians. Although they were of different origin they all shared a common link of appreciation. They all valued fundamental components of a stable community: heritage, education, faith, and community businesses.

Recommendation: The brand should concentrate on voiding the negative image that has plagued the area. The brand should focus on giving life and recognition to the core values that supported the foundation of the Green Island community.

1 Introduction

The economy is changing! Many of the old models that were used to predict economic behavior in industry sectors have become obsolete. They cease to recognize and take into account the changes that have occurred in the economy, specifically the global, technical, and demographic transformations. The demographic changes have resulted in an increase in wealth and leisure time. This increased wealth and leisure time has led to niche audiences and new markets. The new markets that are rising in response to the demographic changes have created opportunity for arts recreation and tourism activities, as well as a greater emphasis on quality and design of products and services. Second to the demographic changes are the changes in globalization. When it comes to innovation and the creative processes, globalization has created a more competitive market. The standard of global competition has been modified with the need to be fast flexible and forward thinking. Finally the digital economy has provided flexibility for people to do what ever they want when ever they want. This flexibility gives people the option to locate in the community of their choice. No longer are people constricted in their choice of residency. This raises the importance of quality of life within an area and forces communities to look at their support for the arts and culture to attract the brightest of people.

Many are aware of the significant financial impact that the arts and culture have on generating revenue and supporting jobs. The New England Foundation for the Arts concluded that nonprofit cultural organizations and attractions generate 3.9 billion in revenue each year while supporting more than 110,000 jobs within the region (NEC, 2000). What is crucial to recognize apart from this is that the creative economy, which

encompasses the nonprofit cultural organizations, provides many of the defining attribute for an area to compete in the new economy.[2]

Worcester, the second largest city in the commonwealth of Massachusetts, has an abundance of cultural activities. Worcester, being home to over 35,000 college students and 176,000 people, features world renowned museums, concert halls, theaters and galleries. Many of these cultural institutions are of international and national importance for example: the Worcester Art Museum, the state's second largest fine art museum, the American Antiquarian Society, a national historic landmark and the oldest national library focusing on early American culture and history. Mechanics Hall is recognized as the nation's finest pre-civil war concert hall and is a national historic landmark. Along with an abundance of pre-existing cultural institutions, Worcester's cultural organizations have recognized the work and programming of contemporary artists living and working in the community. Worcester Cultural Coalition (ND) (hereinafter WCC) found: "The American for Arts Economic Impact Study on the Arts Industry (2000-2001) determined that Worcester's not-for-profit arts activity generates a $48.23 million dollar industry, attracts over one million audience members annually, supports approximately 1500 jobs, and delivers $4.2 million in local and state revenues" (pg 3)

It is clear that Worcester possesses an enormous content of arts and culture. What is the problem? WCC stated: "finding your way in Worcester is an ongoing issue of concern for the City. Many Visitors complain about the lack of signage and inability to successfully navigate the city's streets in an effort to attend a cultural activity." (p. 1). From this it is clear that there is problem in the spatial definition of how Worcester's arts

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and culture and hence its creative economy are defined. As stated by the WCC (ND) "our goal is to redefine the Worcester Way" (pg 1).

The larger issue at hand is the sustained development of Worcester, specifically in terms of developing its creative economy by attracting creative workers and enhancing the quality of life within an area. In this project, I set out to promote the economic and cultural development of Worcester by redefining the way in which Worcester's was spatially defined. Displaying Worcester with affective signage will help the community and visitors to avoid from getting lost and make Worcester more attractive to the public eye. By redefining Worcester spatially I hope to promote the economic and cultural development of Worcester. The WCC (ND) would like to define "a way finding system that would benefit all of Worcester, stimulating the economy by substantial public display of Worcester's many educational and cultural assets" (p. 2). An "effective wayfinding system program presents a simplified layering of selected information that allows the visitor to navigate through unfamiliar territory with confidence and to gain a sense of place in the process." (WCC, ND, p. 3)

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In order to design an affective wayfinding system for the city of Worcester, I needed to know what content is relevant. As stated in the ideal situation, districts will be represented with logos that accurately reflect the history and character of that area, but what is the history and character of a particular district under study? This project consisted of site research on the Blackstone Canal district. The site research constituted studying the history and present conditions of the Blackstone Canal district. From this research, I was able to propose recommendations for how the Blackstone Canal district and its people could define their community. Upon completion of site research, conceptual development involved: what are the properties of an affective way finding system, and what is the relevant content to the district under study? (i.e. Blackstone Canal district) One of the main objectives of this project was to have the people involved in the development of the community's identity. The importance of having the community involved in site research is because the wayfinding system is a community resource. With the construction of the appropriate content, by having the people involved, an affective wayfinding system can be constructed.

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of the community and my recommendations one will be able to generate signs, logos, and icons that accurately reflect the identity of the Blackstone Canal District.

2 Background Research:

The role of the arts and culture is becoming increasingly more important in today's new economy. Most people are familiar with the arts and culture and what they bring to the communities through: theater, dance, museums, galleries, libraries, sculptures, orchestras and more, but the economic impact is something that has been unnoticed. The New England Foundation for the Arts found that nonprofit cultural organizations and attractions generate 3.9 billion in revenue each year while supporting 110,000 jobs. While these numbers may be impressive they only represent part of the contribution the arts and culture industry supply to a regions economic competitiveness and development. By encompassing the nonprofit organizations, commercial businesses, and the individuals engaged in or trained in an artistic or cultural field, we have what is known as the creative economy.

In order for Worcester to promote economic and cultural development I felt it must address not only how its artistic and cultural assets are spatially defined, but are they being used to attract creative people. The problem is that Worcester's creative economy is not well defined spatially. Many visitors have complained about the lack of signage to successfully navigate the streets of Worcester. This lack of signage and an inappropriate spatial definition retards economic and cultural development. A wayfinding system will introduce signage that will better define Worcester spatially, defining not just Worcester's preexisting assets but also what the community feels is important. Prior to

the implementation of a wayfinding system appropriate content had to be established. To establish this appropriate content the notion of branding was integrated.

2.1 The Creative Economy: What and Why?

John Howkins (2002) stated that the creative economy will be the leading economic form for the 21st century. In 2001 it was estimated that the market size of the creative economy was $2.5 trillion and growing at an average 2.5% per year. At this rate it is estimated that by 2010 the market size of the creative economy will be $4 trillion (Ryan, 2003).[3]

If we ask ourselves, what is the creative economy? As there are various definitions, Ryan (2003) summarized that in general the concept of the creative economy revolves around the notion intellectual property or ideas. Ryan (2003) proceeded to show that the creative economy can be divided into 4 categories copyright industries, patent industries, trademark industries and design industries. The problem with this theoretical definition is it does not analyze how these industries relate to the public as a whole, but it does allow one to look at the immediate economic return.

The New England Council conducted a study in which the creative industries were analyzed along with their relation to the public. This analysis was used to construct a hybrid definition of how the creative economy is defined. According to the New England Council's June 2000 study the creative economy is composed of three sectors: the creative cluster, the creative workforce and the creative community. The creative cluster encompasses enterprises and individuals that produce cultural products. This includes nonprofit organizations, commercial businesses, and people who work in the arts

[3] For more information on the creative economy from a global perspective refer to Ryan, P.

and culture. The creative workforce is defined as the thinkers and doers, trained in specific cultural and artistic skills, who drive the success of leading industries that include arts and culture. The creative community is defined by geographic areas with a concentration of creative workers, creative businesses and cultural organizations. The NEC (2000) reported that the creative cluster supports 245,000 jobs; consequently, this is 3.5% of the total New England job base, which provides a supporting annual payroll of 4.3 billion; furthermore, the growth rate being 14% is greater than the general job market of New England, which is 8%. Internationally the creative economy has been known to bring in outside revenue's 6.6 billion from cultural tourism (NEC, 2000). Ryan (2003) reported that in the U.S. the creative industries were estimated to employ 10 million people, which is more than 7% of the total U.S. workforce. What is important to note is how this definition brings the industry sector (creative cluster) and unites it with the workforce and the community. Three sectors that make a whole.

The understanding of the role of the arts and culture in today's economy and the conceptual definition of a creative economy is not an idea that is exclusive to New England. The British Council has developed its own understanding of the creative economy. According to the British Council the creative economy is defined by its creative industries and creative businesses. How the creative industries are defined is governed by the definition that was adopted by the Creative Industries Task Force, which was established by the Prime Minister in 1997, and states:

> **"Those industries that have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property" (British Council, 2006, Creative Economy: Definition)**

The reason for this definition is that there has been no conclusion on where the boundaries of the creative industries cross over with the cultural industries and the entertainment industries (British Council, 2006). Although there is some over lap, the adoption of this definition allows one to look immediately at the "questions of economic return through wealth and job creation" (British Council, 2006, Creative Economy: Definition, ¶ 3). In accordance with this definition a list of sectors was derived by the British Council: advertising, architecture, art and antique markets, crafts design and design fashion, film and video, interactive leisure software, music, performing arts, publishing, software and computer services, and television and radio. Recalling the definition set by the NEC, it is clear that how the U.K. defines their creative economy is by the creative cluster.

The importance of these creative cluster sectors was not realized until the late 1990's for the U.K., when the number of jobs in their creative sector grew by more than 30%, this was 7 times faster than the workforce as a whole (Ryan, 2003). Presently, the 1.3 million workers in the creative industries now make up 4.4% of the U.K. labor force (Ryan, 2003). Once the understanding was made that the creative industry was the fastest growing sector of the U.K.'s economy, its importance for job creation and or growth was recognized.

Although there may be other areas that define their creative economy differently, it has been found that the U.S. and the U.K have the world's leading creative economies, in retrospect of the creative economy being defined in terms of industries alone (Howkins, 2002). In the U.S., which was noted to have the most dynamic creative industries, the creative economy was estimated to make up 10% of the total economy,

with a market size value of $1 trillion (Ryan, 2003). It was reported that in 2001 copyright related industries such as advertising, film, music, publishing, performing arts, computer software, T.V., and Radio generate annual revenues of $700 billion, of which $90 billion was generated from global sales (Ryan, 2003). It was also reported that since 1980 these copyright industries have grown 2.5 times faster than the U.S. economy (Ryan, 2003). Similar to the U.S., the United Kingdom's creative industries were reported to export more than they import, by a difference of $16 billion. In addition the 1.3 million creative industry workers comprise up to 4.4% of the U.K. labor workforce (Ryan, 2003).

The creative economy, as was stated by the New England Council [NEC] in their June 2000 study, The Role of Arts and Culture in New England's Economic Competitiveness, is a key contributor to New England's economic competitiveness. Other than the fact that The New England Foundation for the Arts found that nonprofit cultural organizations and attractions generate 3.9 billion in revenue each year while supporting 110,000 jobs, the creative economy helps to provide many of the necessary skill for a economy to flourish. Before we can understand the creative economy and how New England holds this competitive edge we must look at some of the recent changes that have occurred defining, the new economy.

The economy is changing as was stated by the NEC (2000) many of the old models that were used to predict economic behavior, such as industry sectors, competitive factors, and occupational demand have become obsolete. "The new economy that is emerging favors knowledge, communication, and innovation" (NEC, 2000, p 8); as

a result, the role of arts and culture has increased in the development of the economy. The NEC (2000) summarized the role of the creative economy in today's new economy.

1) "Demographic shifts have created niche audiences and new markets ideas in response to increased wealth and leisure time. This implied opportunities for art, recreation, and tourism activities;" (p. 8)

2) "Globalization has created a more competitive environment when it comes to innovation and creative processes. With increased international competition in the cultural industries, the need to be fast, flexible, and forward thinking is all the more important;" (p. 8)

3) "As a result of the digital economy it has been made more possible for people to do what they want, from wherever they want. This implies people are more likely to locate in the community of their choice. This increases the importance of the quality of life issues, and makes communities and businesses more conscious of contributing factors like the arts and culture in order to attract the best and the brightest;" (p. 8)

In addition to there being changes in today's economy, in the past decade, the way in which people work in the environment has changed. As was stated by the NEC (2000), the way in which business is done has been radically configured by technology, management, and lifestyles. The new qualities that define the workplace are flexibility, collaborative spirit and the ability to think outside the box (NEC, 2000). Several studies show that an arts education helps develop the particular capabilities required by the workplace. The necessary skills were found to be analysis, synthesis, critical judgment, creativity, and imagination (Boston, 1996).

It has been found that regions that have had the competitive edge tend to be those that display what is known as collaborative advantage (NEC, 2000). A region that has a strong collaborative advantage is one that is successful at nurturing industry clusters. These areas that have been successful at nurturing industry clusters have developed high quality economic institutions that are responsive to the specialized needs of existing and

emerging clusters in that area (NEC, 2000). The NEC (2000) made the case that the creative clusters should be part of the economic clusters deserving attention from the region's policy makers and business community. The economic data that was used to support this claim analyzed commercial and nonprofit sectors and the role of the artist in both sectors. In addition the data allowed the NEC to compare and contrast industry clusters. It was found that the components of the creative cluster all share the same roots. As was stated by the NEC (2000) the creative cluster employs nearly a quarter of a million people in New England, which sub mounts to about 3.5% of the total job base, and supporting a annual payroll of 4.3 billion.

The NEC conducted an employment comparison that compared the creative cluster to other economic clusters: as a result, they concluded that the creative economy supports as many jobs as the computer equipment industry. In addition to supplying a percentage of the job market, the creative cluster must attract income to the region and export goods and services. In 1998 it was found that approximately 15 million people traveled throughout New England primarily for cultural events, spending more than 6 billion. 8 million of these visitors came from outside regions. The creative cluster was found by the NEC to link other clusters in the region. In conclusion it is clear that the creative cluster alone provides a substantial amount of economic stability for a region to develop.

With the changes in the economy that are a result of the demographic, global, and technical transformations, the role of creativity will become even more important factor in the role of New England's economic competitiveness. As was stated by the NEC the creative cluster will increase the competitiveness of other clusters in the area by: 1)

providing creative content to the new media industry, 2) providing new markets for technology products, 3) improving existing markets for manufactured products through industrial design, and 4) attracting and providing creative workers in the expanding knowledge creation cluster. As was concluded by the NEC (2000) June 2000 study: the creative cluster and creative professionals who work both within the cluster and outside of it embody the vary characteristics of the new economy, where innovative, imaginative ideas are vital to job creation and technological progress.

As was stated previously the creative workforce is "defined as the thinkers and doers in specific cultural and artistic skills who drive the success of leading industries" (NEC, 2000, p 4) and "has many of the professional qualities required to compete in the new economy, such as creativity, design, technical skills, advanced conceptualizing and the ability to respond to rapid change" (NEC, 2000, p 4). The creative workforce possesses the necessary skills for the new economy and workplace; as result, it provides the city with the necessary economic competitiveness to compete in today's economy.

The creative economy is a key contributor to the economic competitiveness but it must be embraced. We have seen the creative workforce has many of the required skills to compete in the new workplace. We have seen that the creative cluster employs a quarter of a million people in N.E. and that cities that give attention to their creative industry sectors have developed high quality institutions. The question is how do we attract these creative workers and sectors?

Cities that have strong creative communities have been found to have an enhanced quality of life which has rendered itself to increase the city's economic competitiveness. The idea is that an enhanced quality of life implies that a city is more

desirable. A city that is more desirable will attract more people and business that reflect qualities found in that community (NEC, 2000). The NEC (2000) stated that enhanced quality of life in a city makes that city more attractive to workers as well as companies willing to relocate or expand businesses. Expansion Management (1999) stated: employees, particularly managerial and technical workers, are more selective about their choice of residency. If companies want to attract the best, they need to seriously consider the appeal of their current and future location (NEC, 2000). The attraction of workers and businesses through the development of the quality of life of a city is of importance due to its affect on a cities economic competitiveness and formulated the bases for this project.

2.2 The Problem with Worcester's Creative Economy:

Worcester already has many of the definitive elements of a creative economy. Currently several projects are underway to advance cultural and economic development, these include: new city-wide Cultural Map, Main South Arts District[4], and City Square Downtown Redevelopment Project[5]. In addition the city of Worcester has collaborated with the WCC to work towards developing a cultural economic agenda to "draw upon Worcester's rich and diverse cultural assets to foster economic development and create a strong cultural identity for the city of Worcester." (WCC, ND, p 1) Several plans for economic redevelopment were as follows: $560M in private and public investments in the landmark City Square project, $35M towards Gateway Park[6], $300M to build an attractive roadway center to the Mass Pike, and $60M for a state of the art vocational

[4] http://www.worcestermass.org/development/artsdistrict.html
[5] http://www.worcestermass.org/development/center.html
[6] http://www.worcestermass.org/development/gatewaypark.html

school[7]. Theses are just a few of the projects intended for Worcester's economic development.

Worcester, with its diverse population of 172,648, has many industries and organizations that could be used to make Worcester a more attractive place: The Worcester Art Museum[8], which is the second largest fine art museum; American Antquarian Society[9], a national historic landmark and the oldest national library focusing on early American culture and history; Worcester Center for Crafts[10] one of the country's oldest and busiest centers for contemporary craft education; and Mechanics Hall[11], recognized as the finest existing pre-civil war concert halls in America. In addition the American for Arts Economic Impact Study on the Arts Industry, 2000-2001, concluded that Worcester's not-for-profit arts and activity "generates $48.23million industry; attracts over one million audience members annually; supports approximately 1,500 jobs: and delivers $4.2 million in local and state revenues" (WCC, ND, p. 3) With its diversity, arts, and history, Worcester has enormous potential for a flourishing creative economy and needs spatial definition.

The problem is Worcester's creative economy is not well defined spatially; people are getting lost. As was stated by the NEC (2000) the ability for a creative community to attract and retain creative workers and business is vital for the region's economic competitiveness. The WCC (ND) stated that: "finding your way in Worcester is an ongoing issue of concern for the city. Many visitors complain about the lack of signage and inability to successfully navigate the cities streets in an effort to attend a cultural

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[7] http://www.worcestermass.org/development/vocationalhs.html
[8] http://www.worcesterart.org/
[9] http://www.americanantiquarian.org/
[10] http://www.worcestercraftcenter.org/
[11] http://www.mechanicshall.org/

activity." (p. 1) With the importance of attracting creative people and businesses, and the problems Worcester faces with people getting lost, methods must be implemented that will improve the spatial definition of Worcester's creative economy, so as to make Worcester more attractive.

2.3 Wayfinding system: Why?

Due to the problem statement by the Worcester Cultural Coalition that people are getting lost in Worcester while going to cultural events, it clear that the way Worcester is defined spatially is not desirable. Many people are getting lost when navigating themselves to cultural events. The revenues from art and cultural events are significant. The American for the Arts Economic Impact Study on the Arts Industry, 2000-2001, determined Worcester's not-for-profit arts activity generates $48.23 million industry. (WCC, ND, p. 3) In addition, the revenues generated from cultural tourism, as a result of creative cluster, have been estimated to be in the billions. The way in which Worcester fails to be spatially desirable proposes a problem to its ability to attract outside people, specifically the tourist, as well as local people. As stated by the NEC (2000) in 1998 it was estimated that approximately 15 million people traveled throughout New England primarily for cultural events, spending more than 6 billion. From this I can concur that the revenues brought in from cultural tourism can be strengthened or weakened in terms of the cities spatial definition.

It has been found that a wayfinding system will significantly benefit a city's many cultural and historical attractions by making them more spatially accessible to the tourist. Worcester Cultural Coalition stated:

> "wayfinding is the art and science of redirecting people in motion. To direct visitors without overwhelming them with too much information, an affective wayfinding program presents a simplified layering of selected information that allows the visitor to navigate through unfamiliar territory with confidence and to gain a sense of place in the process" (p. 3)

Corbin Design helped to install a wayfinding system for Indianapolis. With over 21 million visits per year, downtown Indianapolis was experiencing dramatic growth. The goals of developing the new "Direction Downtown" wayfinding program that I found relevant were:

- To identify downtown as a destination from the Interstate highway system;
- To enhance downtown's public image through unique, helpful graphics;
- To better organize and present information about downtown destinations to make them easier to find;
- To simplify traffic patterns by guiding drivers through downtown along specific routes;

Corbin's solution for organizing the information centered on the creation of four quadrants, based on the historic city plan, originally derived from the plan for our nation's capital. The family of signs included vehicular and pedestrian elements to direct visitors to over 60 attractions.

> "Visitors, residents and merchants alike have praised the program's effectiveness. The Society for Environmental Graphic Design recognized our work on the project with a 2000 Merit Award." (Corbin Design, 2000, Corbin Design: Indianapolis)

A wayfinding system for the city of Worcester would help to benefit Worcester's many cultural events by making an improvement on how they are represented spatially and making it more appealing. Thus far we want to make Worcester more appealing, by bringing attention to what is already here: culture, people, and history.

In apart from making the city more accessible to the tourist with improvements to Worcesters spatial definition, we would like to make Worcester more appealing to the public in general. The development of a wayfinding system has been found to be successful as part of the process for revitalization of a city district. Karen Finucan (1999) in her article "Way to Go" summarized that wayfinding systems are a successful at marketing an areas resources, altering negative perceptions, evoking a sense of a area's history and character, and improving streetscape. This is exactly what we set out to do.

In order for Worcester to establish a sustained development it must look at attracting creative people and creative businesses. In the new economy, the longevity of a city goes beyond the trade of goods, flows of capital, and investments (Ryan, 2003). The prosperity and economic edge of a city is dependant on its ability to attract, retain and develop creative people. (NEC, 2000) The creative class/ creative workforce are part of the driving force behind economic growth and urban revitalization, as was argued in the NEC study (2000). In Florida's (2002) book "The Rise of the Creative Class", he argued that in the U.S. the regions and urban areas with the best economic performance have the highest number of creative workers, on average up to 35% of the workforce. The key to Worcester developing its economic growth and revitalization is through the development of how it spatially presented, to make it more appealing to the creative worker and creative businesses.

2.4 Constructing an Identity: Branding

What we must note is that a wayfinding system does not make a city appealing on its own. A wayfinding system merely helps focus the publics attention to what is already there; therefore, any successful wayfinding system must have successful content that

reflects the character of the region. How do we establish this successful content and character, through the notion of branding?

Branding a city is a process in which a city's many cultural and historical attribute are used to formulate a brand that uniquely identifies itself, similar to a brand, in terms of a "trademark or distinctive name identifying a product or manufacture" (Dictionary.com, 2006). The brand identity is used to help a city figure out who they are and helps them define it to the rest of the world. As was summarized by Jonathan Baltuch (N.D) if your city does not take time to figure out who they are and take steps to define it to the rest of the world, then it is left to the rest of the world to define you. The importance of branding is obvious when you look at marketing strategies in today's economy. Companies have learned that no successful product will survive unless it has taken steps to define a "clear, positive, and affective brand identity" (Jonathan Baltuch, 2006, p. 1) Erick Swartz (2006), president of Tagline Guru stated, "Rebranding your city/town with a memorable motto or moniker is the most cost effective way to: 1) leverage your assets 2) increase your visibility 3) build brand identity" (p. 1).

The branding process usually consists of seven stages: internal research, external research, logo and brand promise design, comprehensive brand identity package design and implementation, internal education, external education (public relations), and advertising. The following is a summary of the process as described by Jonathan Baltuch (2006) in his article Brand your city: a recipe for success:

- Internal Research: "Lasting Brand is built on the core values and strengths found within a community." What are these core values? Must do a city wide survey, must be developed and distributed to each household within the city.
- External Research: (executed concurrently) Want to formulate an idea of how the city is viewed internationally. The way they are perceived often varies dramatically from the reality that exists.

- Logo and Brand Promise Design: With the internal and external research, you can define core values and understand where that differs with the perceptions. Now design a new Brand Promise. A Brand Promise (a few words) is a phrase or slogan that becomes part of your logo and integral part of your city.
- Comprehensive Brand Identity package Design and Implementations: Makes logo quickly ubiquitous. Logo must appear on all media the city generates.
- Internal Education (Public Relations): With press release, personal meetings and events you can begin to re-educate the public and realigning their perceptions with the reality that exists with in a city.
- External Education: With research you should have a good idea where your cities image is incorrectly perceived. Through press releases, personal meetings and events you can begin the process of re-educating the public and realigning their perceptions with the reality that exists within your city.
- Advertising: Only now do you even think about beginning the traditional advertising to promote your city. With a new logo and brand promise in hand and hopefully a clearer message to deliver you can begin to identify your target audiences. Long after the effectiveness of a single ad wears off the memory of your brand identity will live on in the minds of the public.

The branding process helped me to identify Worcester's many cultural and historical attributes. These cultural and historical attributes were then used as a base to formulate recommendations for the content of Worcester's wayfinding system.

2.5 Summary

The creative economy, according to the NEC, is defined by the creative cluster, creative workforce, and creative community. Similarly, according to the U.K., the creative economy is defined solely by its creative industries. In either case, it has been shown that the creative economy is a key contributor to a region's economic competitiveness in the new economy, with the new economy being a result of demographic, global, and technical transformations. Not only does the creative economy help an area economically, but in addition it provides an enhanced quality of life. An enhanced quality of life in a city renders itself to be more desirable, more desirable in terms of displaying the regions historical and cultural content. The reason why Worcester

should care is it has the rich cultural and historical attributes that could help to define an enriched quality of life for many of the citizens of Worcester, they are just not well defined spatially. People are getting lost. For Worcester to have a leading competitive edge in today's new economy it must make use of its many cultural and historical attributes to better attract tourists and draw in creative people. The issue is not the quantitative level of historical attributes that compose Worcester but the way they are defined spatially. A wayfinding system will help to better spatially represent Worcesrter's creative and historical attributes, and help to identify Worcester's brand identity as a "home for the arts" (WCC, ND, p. 1).

3 Methodology

The purpose of this project was to capture an accurate representation of the Blackstone Canal district's character. In terms of character, I focused on what are the core values and attractions that define the culture of the Blackstone Canal district. What was crucial in this research was the connection of why and how, as apposed to what. This was achieved by looking at relationships of events of the past and their connections with the present.

The research topic was centered on analyzing two questions:

3. What are the historical conditions of the Blackstone Canal district?
4. What are the present conditions of the Blackstone Canal district?

The historical research provided an understanding of the relationships among issues that have influenced the past, continue to influence the present, and will certainty affect the future (Berg, 2004, pg 324). From this content a general understanding of the Blackstone Canal district's culture was established. With knowledge of the present

conditions as well as the past, relationships were drawn and a better understanding of the culture was developed.

Upon establishing a thorough understanding of the Blackstone Canal district and how it came to be, the content of an affective wayfinding system, that does justice to the Blackstone Canal district, was established through recommendations. In addition the economic and cultural standing of the district was established and further recommendations were concluded.

3.1 What are the Historical Conditions of the Blackstone Canal district?

In answering the first question, I made an appointment with the Worcester Historical Museum to have access to their archives on the history of the Blackstone Canal. The avenue of choice was more rigorous, but it paved a way to the true underlying history of the Blackstone Canal and what stories I wanted to tell.

In the process of archival research I focused on two areas to gather the necessary data: The history of the Blackstone Canal, and Green Island. Key ideas were used as a filter to assure the data was relevant, they were: history, heritage, and culture. This proved to be crucial considering the time constraint and the amount of information available. Upon the completion of gathering the data, content analysis was implemented. The purpose of the content analysis was to extract and organize the data, so as to develop an understanding of the topic at hand.

The field notes were fully looked over and surface themes were associated with the various chunks of data. The importance of the surface themes was that they helped to sort through the data. Upon completion of the relevant themes grounded categories were established by going through the data a second time and identifying the category labels

that could be used to sort through the data. With the completion of the grounded categories the surface themes representing various chunks of data were sorted into the most closely related category. With the data coded and organized the question of the Blackstone Canal district's history could be answered and understood.

3.2 What are the present conditions of the Blackstone Canal district?

In order to establish a perspective on the present conditions of the Blackstone Canal district, I consulted the U.S. Census Bureau. The topics that I chose to pursue were: population, age and sex, aging, employment, income, poverty, origins and languages, race and ethnicity and education. Reasons for these choices stemmed from the fact that I felt these were the core elements that helped define culture and character

The U.S. Census Bureau gave definitions on these categories and what these categories communicated about the population. The age and sex information was used to identify the social and economic characteristics of males and females and the age of people including the children and the elderly. Aging gave information about the people 65 years and older. The employment gave information on people's occupation, type of employment, and helped to determine the labor status of the area. The income stats gave me information on the Blackstone Canal's income distribution and family and household income from various sources including earnings, retirement income, and public assistance. The statistics on origins and languages supplied information on the ability to speak English; ancestry; place of birth; citizenship status; and foreign born policy. The information on poverty gave insight as to how many people fall below the poverty line. The information on race and ethnicity gave insight as to people's self classification according to the race or races and ethnicity with which the individual most closely

identifies. The information on education gave insight as to the level of education that was completed by the people of the Blackstone Canal district.

With the understanding of the history I could better understand the present conditions of the Blackstone Canal district. In other words, the present conditions supplied information with the systems present state, where as the history told us the process of how the system acquired its present state. With a thorough understanding of the history and its relation to the current situation I was able to better understand the Blackstone Canal district's culture and formulate a better understanding of its identity.

4 Discussion and Results:

In formulating my discussion I focused my attention on the events that led up to the construction of the Blackstone Canal, the events that followed as a result of the Canal, and how those events have shaped the present. In the analysis I looked for common themes amongst the people, core values, which defined the area.

4.1 How the Canal came to be.

The signing of the Treaty of Paris signified a turning point for America. The Treaty set in stone that Great Britain ceded all its North American territory with the exception of Canada by recognizing the independence of the first 13 colonies. With the accomplishment of wining its independence, the United States soon realized that it faced another struggle, the struggle for the war of economic competitiveness, with many of the nations goods still coming from Great Britain this proved to be a challenge (Arning, 2005)

With many of the nation's goods coming in from Britain, methods had to be derived to transport the goods inland. The task of moving goods inland, from one part of

the country to another, proved to be a challenge. Moving produce and material inland from the populated coast of Providence and Boston was extremely slow due to the lack of roads and transportation routes. It proved to be very costly for local merchants and consumers. During this period it was found that it was cheaper to ship from Europe to Boston, over sea, than from Boston to Worcester, overland.

In 1792, a providence Merchant, John Brown had the idea that using water routes as a means to transport goods would be more efficient. John Brown proposed the building of a canal from Providence, Rhode Island through Massachusetts, up through New Hampshire and Vermont connecting to the Connecticut River and finally into New York with the Great North Hudson River at its destination (Arning, 2005). While the Rhode Island Legislation enthusiastically endorsed the concept, the Massachusetts state legislature, based in Boston, in 1796 saw the building of the Canal as an economic threat. Boston's businesses objected, they said the canal would divert from Boston economic benefit, they believed that Massachusetts commerce should move through a Massachusetts port and not by way of another state. That same year, while Brown was presenting his proposal to the Massachusetts State Legislature, Massachusetts entrepreneurs were planning a revival canal from Boston to Worcester. Although the proposed canal was never built due to a lack of capital and engineering surveys that showed the project to be unfeasible, supporters still had enough political leverage to sink the canal project from Providence to Worcester. The Boston protest was so strong that the Massachusetts State Legislature turned down the Worcester project.

The concept of a canal was buried for several decades until in 1817 construction of the Erie Canal began. The Erie Canal spawned the interest of many merchants in the

Providence and Worcester in terms of creating alternative trade routes with the Blackstone River. Merchants felt that a transporting their goods over water would prove to be more feasible in terms of shipping costs.

The problem with the Blackstone River was that it had many twists, turns and falls; obstacles such as these would increase shipping, which would render the idea of the river not quite so feasible. In 1821 the idea of building a canal was resurrected to resolve the predicament feasible timed water routes. A canal would resolve this issue by implementing methods that were more feasible when traveling on the water.

In Worcester, prominent citizens: future governor Levi Lincoln, printer and publisher Isaiah Thomas, met in Colonial Sike's Coffee House to reconsider the project of the Blackstone Canal. In 1822 a committee was formed to help revitalize the canal project: John Milton Earie, William E Greene, Edwards D Bangs, John W Lincoln, Levi Lincoln.

In 1822 Providence and Worcester merchants formed the Blackstone Canal Co. Worcester expected great things from the canal. The sponsors of the committee said that the canal would double real estate values within six miles and that it was absolutely necessary to Worcester's commerce and economical development. Detractors said that the water would be apt to freeze in the winter causing delayed delivery and increased shipping costs. The sponsors considered it a probable cost and went along with the project. The sponsors of the Blackstone Canal CO. won and raised $750,000, by selling 7,500 shares at $100 each, plus $500,000 in Rhode Island.

The construction of the Blackstone Canal spawned the importance of Millbrook as a waterway in 1828. The Blackstone Canal Co. was authorized to make use of North

Pond as reservoir to supply the canal with a water source. With the Blackstone Canal having exclusive rights of the water power of North Pond, many mill owners were jealous and some even attempted to sabotage the canal in its efforts to transport goods. The mill owners wanted to keep as much water power as they could for their water wheels.

"As the Blackstone Canal was being built shamrocks rained on town of Worcester" (Southwick, 1996). With the construction of the Blackstone Canal many people were excited but not with the shamrocks that were following. By 1920, the small isolated town of Worcester, consisting of 3000, was finding itself with more foreign bodies than it had anticipated. The work on the canal required experienced canal builders. Toby Boland, an Irish born contractor, who purchased some swampland between Franklin and Kelly square, was called in ounce the first efforts to build locks with the American labor ended in disaster. On July 4, 1826, the first group of Irish workers was hired to work on the canal. Initially, the canal was started by the Yankees, but due to their lack of experience they could not handle the job; as a result of the Irish and there success with the Erie Canal, the Irish were brought in to finish the job. By 1827 1,000 Irish workers, skilled canal builders, were employed along the canal route, cutting granite for locks, digging the trench and building the tow path as the canal approached Worcester.

4.2 The Good, the bad, and the Canal:

Although the construction of the Blackstone Canal has been seen as a breakthrough event in which our city was born there were some drawbacks. During the winter the water would freeze which meant that: boats were delayed, goods were delayed, muttering from costumers, and protests form manufactures who resented the canal feeling

that the water power was rightfully theirs. There are even stories of mill owners putting rocks in the canal at the lock gates to impede the water flow and conserve water power for their mills. Even with these drawbacks and despite the fact that it was only prosperous for 7 years, the construction of the Blackstone Canal has been seen as the backbone of the Industrial Revolution and the source that gave birth to the city.

October 7, 1828 marked the arrival of the Lady Carrington, the first boat to port in Worcester as a result of the Blackstone Canal. The canal was stretched forty five miles, through sixty two locks and an elevation change of just over 450 feet. When a boat would come in on the canal, it would make its way up on a tow-line pulled by two horses along Harding Street, north through Kelly Square, continuing along Harding Street through Washington Square and Arriving at the canal basing at Thomas Street. For many, the arrival of these ships signified the birth of Worcester. The canal turned out to be a big boost to business development and spawned economic growth. This insured that "Worcester would never again be compared to places like Sutton Brookfield and Lancaster" (Moynihan, 1994). In essence the canal gave birth to the city.

One of the crucial themes of thought that helped plant the seed for economic growth was the notion that *by the canal* translated into *freshness*. Nathan Heard, a Worcester Merchant, saw this theme as a great way to market his goods. He bought the entire contents of the Lady Carrington. He had the idea of using the canal's speed to promote the idea of *freshness* (Arning, 2005). In several newspapers it read: "By the Canal Nathan Heard has just purchased the Entire Cargo of the Lady Carrington that he offers for sell at the most reasonable prices" (Arning, 2005). For many the phrase *by the*

canal translated into *freshness*, which appealed consumers and helped spawn economic growth (Arning, 2005).

4.3 The Death of the Canal:

The initial prosperity of Worcester as a result of the Blackstone Canal proposed a threat to Boston. As it read in an 1829 article the Boston Centinal "If something is not done to counter the effect of the Blackstone Canal Boston will be reduced to a fishing village". In response Boston sponsored a railroad to Providence in 1834 and a railroad to Worcester in 1835. The merchants of Boston wanted a piece of the pie that was being generated by the inner workings of the state. The providence to Worcester railroad would use major sections of the canals tow path as a bed for its rail as it replaced the "weak as water canal route with the strong as steel canal route in 1848" (Arning, 2005*)*

In 1835 one could here the sound of the first train entering Worcester, consisting of twelve cars and two wood burning locomotives; the sound signified the slow death of the Blackstone Canal. Although railroad fare was more expensive, it was more reliable year round. Despite the fact that it was more costly, people still found it beneficial considering its reliability factor. As more and more people utilized the railroad less people used the canal boats; as a result, the railroad soon rendered the Blackstone Canal obsolete. The Blackstone Canal Co. was forced to sell portions of the canal to pay off share holders. Granite blocks from the canal locks were sold off to use on other construction projects, and portions of the canal in Worcester were made into sewer system. In 1850 the canal company had to sell its rights of the dam and water flowage in North Pond to the owners of seven mills located along the Millbrook. Each of the mill owners agreed to contribute to the purchase and maintenance of the water rights in North

Pond, in the proportion in which what value their mill possessed relative to the other mills. Shortly after this, agitation increased for the construction of a municipal sewer system. In 1867, the Massachusetts State Legislature authorized a special act to construct a sewer system in parts of Worcester. This entailed the city of Worcester purchasing the water privileges in the lower mills, which consisted of the canal. The Blackstone Canal which was ounce the "working spine of the Industrial Revolution and magnet for Irish Immigration" (Worcester Magazine, 1994), which gave birth to the city of Worcester, was covered as part of Worcester's sewer system and forgotten.

4.4 With the Canal came the Irish.

In many ways the construction and operation of the Blackstone Canal in early fall of 1828 was a breakthrough event. Not only did it revolutionize transportation in the region, move significant amounts of goods up and down the canal creating all kinds of entrepreneurial opportunities, but it also introduced the first major ethnic group to the Blackstone Valley, the Irish.

When the Canal was being built many people did not like the idea of foreign embodiment residing in Worcester. During the construction of the Blackstone Canal the Irish were kept segregated in camps. The camps were what led to the formulation of Irish towns. The locations of these camps were east of Washington Square, Scalpintown near Water Street, and Dungarven north of Union Hill. With the construction of the Blackstone Canal economic growth was stimulated. Many jobs were created in 1828 with brick and granite sidewalks being laid along Main Street. With all the jobs created gave all the more reason for the Irish to immigrate. In 1830 an estimated 150 to 200 Irish lived in the surrounding towns.

4.4.1 The Irish and their faith:

The Irish not only built the canal they built the neighborhood which was known as Green Island. The Canal drained the area previously purchased by Boland; as a result, he was able to build six to eight tenement homes. This section was around Green Street and called "Scalpintown". Scalpintown was home to the Irish-Catholics. During this time Worcester was a Congressionalist society; this proposed a problem with Irish Catholics not being readily accepted. The Irish, at this time were strong in there belief and not willing to compensate it to the general public in order to be accepted; as a result, their desire to have their own church only increased.

In 1826, Bishop Benedict Fenwick offered the first mass in a small room of the United States Arms tavern, the site of the present Marriot Hotel at Lincoln Square. As the population of Irish immigrant, canal and railroad workers, increased the need for the Irish to have a church they could call their own increased. In 1833 Robert Laverty made a formal request of Bishop Fenwick to provide the Worcester with a priest. The priest that was appointed was Father James Fitton. April 6 1834, Father Fitton said Mass for 60 worshipers form Worcester and the factories of Clappsville and Millbury at a new store on Front East. After this, ounce a month mass was heard in the open air on the rocks near the entrance to the deep cut of the Boston and Albany Railroad. Although the people had their priest they still felt some thing was missing. This thing that was missing was a church that they could call their own. On July 6, 1834 work begun on the foundation for the first Irish Catholic church in Worcester, St. John's church. The original wooden church, which was completed in 1836, was 32'x62' west of the present church. Its construction was overseen by Tobias Boland, who built the first tenements in the area.

The present location where St. John's now stands was a cornfield purchased by Father Fitton.

Once the church was completed, work was initialized on two schools. There was a Sunday school which was presided over by Eliza Whitney and Mt. Saint James which was for older boys, later to become Holy Cross College.

By 1845 the parish had nearly 2000 members and the tiny 32' x 62' church was not sufficient. Under the direction of a newly appointed pastor, Rev Matthew Gibson, the foundation of a new brick church was laid on May 27, 1845. The following year the church was completed and dedicated as St. John's church. As was stated by Loraine Luarie "with this new church as the focal point, the neighborhood of what we now know as Green Island continued to grow" (p. 40).

4.5 With the Canal came Industry.

With the construction of the Blackstone Canal came the birth of manufacturing and urban development. On Green Street was Charles Fox's Red Mill's which was behind Mill Pond. At 177 Madison Street there was William Bradley Fox's Woolen mill, later to become St. Anthony's church, and much later, the first home at Green Island center. In addition the swamp land of Green Island had been drained from the construction of the Blackstone Canal and by the 1850's the streets of the city had been laid.

Many of the mills that sprang up in the Blackstone Canal area, in response to the industrial revolution, provided many jobs for local immigrants; as a result the Green Island neighborhood was an ideal settlement for immigration. On Green Street, across from Ash Street, was the building home of Crompton Loom Works. The Crompton

Empire was started by William of Lancashire England in 1836. Its success is in partly due to William Crompton's patent on the first power loom to weave fancy goods. William engaged in manufacturing looms in Worcester, Mass until 1845 when his factory was destroyed in a fire. Luckily his son George succeeded in the loom businesses, and William was forced to retire.

In 1851 George received an extension of the patent rights and started making looms in Worcester with Merrill E. Furbish at the Merrifield Building on Union Station. After a fire in 1854, George worked out of quarters at Salisbury Mills on Grove Street. Soon he leased space in Charles Fox's Red Mills on Green Street. In 1860, without a partner, he bought the mill and replaced it with a new building. At one point George Crompton employed more men than any of the other competing mills: Washburn and Moen wire mill.

Albert Gordon, a mechanic, and Horace Wyman, a machinist, were employees for Crompton Loom Works. They invested their own earnings into property in the neighborhood. Their investment extended further to that of property for themselves. Gordon built houses on Vernon and Richland Street, which served as renting units. On the corner of Millbury and Harding Street was Flatiron Building. The building was built by Gordon to help insure his son's education. Wyman lived on Providence Street with his family and purchased thousands of square feet of land around Bradly Street.

Crompton owned: Star Foundry on Washington and Lamartine Streets, lots on Ellsworth, Sigel, and Lafayette Streets, 12.73 acres of land between Quinsigamond Ave., Endicott Street and Harding Street, which today is known as Crompton Park. Crompton's

family took up residence on Union Hill over looking the Green Island. The name of the estate was Mariemont, and is now the present site of St. Vincent Hospital

4.6 Education

With the development of industry the neighborhood of Green Island continued to pursue the development of its community with the development of its education system. Ash street school house was up on the hill looking down on Green Street[12]. The school house was built shortly after the city of Worcester became a city in 1848. Rev. Thomas Griffin, in 1872, started a tradition in catholic education. He brought 8 sisters of Notre Dame deNamur to Worcester to start a school for girls. In preparation, father Griffin purchased Captain Lewis Bigelow's estate on Vernon Street, not to far from the square and what is now Ascension property. The sisters took up residence in the manor house estate and 300 girls came to them for their grammar school lessons. By the end of the first year, there were 550 students. This brick school house was to faithfully serve the Worcester area until 1970. A school for boys was opened on Temple Street in 1881. In 1904, a four year high school was opened and St. John's Prep was born. As Worcester was expanding from both an industrial and residential standpoint, her citizens were developing a true sense of civic pride. As stated by Lorraine Laurie in her book "The Island that became a neighborhood", the building of new schools was a concrete expression of the feeling of civic pride within the Worcester area.

The schools on Lamartine Street reflected this growth. On the corner between Scott and Meade Street a school was built in1868. The pupils attending this institution were sons and daughters of some of the earliest settler's of the Island: the Irish, French-Canadians,

[12] Today the Ash Street school house is gone.

and Jews. Behind this was second building that date back to 1896-1897. Today these buildings are used for school department storage**.** Ward Street School was built on the corner of Ward and Richland streets in 1896. The school was demolished when I-290 came through. Now, in its place is a parking lot where the shrine Our Lady of Czestochowa stands. As the triple deckers continued to spring up in the surrounding neighborhoods, the school population continued to increase and by 1917 there were 846 pupils attending school there. Today, because of the declining enrollment and the proximity to the express way only one building remains.

4.6.1 Education gives birth to Wyman & Gordon.

Apart from the elementary and high school level, a preparatory school called Worcester Academy was part of Green Island's development. The institution was started in 1834 as the Worcester county Manual Labor High School. The School focused on preparing boys for college until the 1970's when girls were admitted. The academy was on the former Dale-General Hospital on Providence Street. Two men who attended the academy in 1870's later started a forging business in the Island. These men were Horace Winfield Wyman and Lyman Francis Gordon.

The boys formulated a business, Worcester Drop Forging Works, on the corner of Gold Street Court and Bradly Street. The company forged parts for bicycles, pistol parts, and knuckles for railroads, requested by government. With being a huge success, soon Wyman and Gordon Co. were making copper bonds for trolley cars. At the turn of the century, Wyman and Gordon were producing forged crankshafts for the automobile. The demand created the need to expand. The need to expand meant renovations to old buildings, erecting a few more, and opening a crankshaft factory in Cleveland. The

Wyman and Gordon Company, a little forging shop that begun in Green Island has grown to be one of the 500 largest industrial corporations in America. With manufacturing sites in 5 countries, 17 plants worldwide, and 3400 employees, the company is the global leader in design, manufacture, assembly and integration of complex metal components.[13]

4.7 More Industry

Originally founded in the neighborhood as F.B. Norton & Co, stoneware manufactures had changed its emphasis, ownership and location. In 1870 Frank Norton began making emeny wheels on Water Street. Mr. Norton was the grandfather of the world's largest producer of abrasives, with 126 plants in 27 countries across the world.

Washburn and Moen Company on grove street, had became the largest wire factory in the world having produced the first American made telegraph wire, the first American made piano wire, and the first American made insolated electrical cables. South Works division developed on the corner of Millbury and Ballard, soon became part of American Steel and Wire. Apart from Washburn was S.R Heywood & Company on Harding Street and Winter Street; finer grades of shoes with Goodyear welting were made with the latest mechanical techniques. With these innovations Heywood soon grew to be Worcester's largest shoe manufacture. These mills were home to many new immigrants, immigrants who left there home at the crack of dawn to begin a twelve hour shift.

Apart from the mills there were many other businesses: Worcester stained glass works on winter street, Osgood Bradly car company, makers of railroad sleeping cars, on Franklin and Grafton streets, Abraham Israel Underwear Factory, one of the world's

[13] http://www.wyman-gordon.com/index.htm

largest manufacturer's of wire and hardware, Worcester Lunch Car company with a factory at 2-8 Quinsigamond Ave, made modern dining cars (ex. Luke's Diner), historic Sargent Carl clothing factory at 300 Southbridge Street, brewery at the end of Ellsworth Street established as Bowler Brothers Ltd in 1883, produced sparkling ales and its famous ale Tadcaster. In addition there was: markets, barbers, tobacconists, chinese laundry "Bijou", McGady the saloon and hotel owner, Boepple the sausage manufacture, Polacki the baker, Goodwin and White the dry goods and merchants, Carlson and Northbridge Brothers, furniture dealers.

The Green Island district was in close proximity to work opportunities in the larger mills, factories and shopping districts. This rendered itself to be of use to immigrants who were looking for work. Many of them would leave their home for sunrise carrying the lunch that their spouse had packed as they headed for a twelve to fourteen hour shift.

Although the Blackstone Canal helped to partially drain the swamp area in 1828, initializing the early development of the Green Island area, the great Mill Brook "Sewer Project" (1878 to 1881) finished the job removing the water that consisted of the brook, the canal, and Mill Pond. The Sewer Project spawned the construction of many three deckers and "Workers houses" that were built in Lafayette, Ellsworth and Sigel Street. (ex. #26 Lafayette Street workers house, #24 Sigel street triple decker constructed of brick and dates back to 1888.) Up the street from there was Stead House; according to historians this may be one of the oldest houses in the area. On 124-128 Millbury Street was Dulligan Block, a commercial residential building that was erected in 1898.

At the turn of the century we can conclude the Green Island area had many of the defining attributes that encompass an industrially rich community. The Irish immigrants with their deep ethnic heritage and love of their new found home who helped shape the Islands future.

4.8 Irish to French Canadian

Although emphasis has been put on Irish immigration, the ethnic heritage reached further. The French Canadians were among the first inhabitants of the Island. In the 1830's sources disclose that the French Canadians worshiped with the Penobscot Indians at Fr. Fitton's Christ Church on Temple Street. With similar values and work ethic to that of the Irish, French Canadians stayed in Worcester as a result of the numerous work opportunities in the Factories and mills. Apparently entire families could be employed at single factory, to of the largest employers being Washburn & Moen Co and Heywood Shoes.

4.8.1 The French Canadians and their faith

The language and Catholic faith were most important to the French Canadians; as a result, they had a desire, similar to the Irish, to create a church they could call there own. The first such parish to do such was Notre Dame Des Canadians; following this was Holy name of Jesus, St. Joseph's and St. Anthony's. In the process of the construction of their church, Rev Joseph Brouillet of Notre Dame des Canadians parish purchased the old Fox Mills Wool Weavers located on Vernon square (later on Kelly square) in 1885. Next year sisters of St. Anne started the Holy Family Parochial School. On July 18, 1904 Bishop Thomas Beaven blessed the building as a church and dedicated it to St. Anthony of Padua. They became a parish in 1908.

The parish of St. Anthony's, in the early years, encompassed 600 French speaking Catholics. The parish encompassed the area between Providence Street and the railroad tracks on Southbridge Street and between Green Street Bridge and the Millbury town line. Many of these immigrants lived on Lunelle, Ellsworth, Lamartine, Lafayette, Washington, and Gold Street. In 1929 a statue of Saint Anthony was placed to celebrate its 25th anniversary.

As time preceded the population of the parish dwindled as a consequence of an influx of immigrants from other countries, the spreading of industry, and the demolitions from I-290 in the early 60's. To make ends meet the people of the French Canadian parish ran carnivals each summer on Kelly Square. In addition the youth group did much to keep the parish alive along with community service work. St. Anthony's school closed in the Late 1950's. The upstairs of the school became Green Island Center, while the convent became a study for the African American Sisters of Our Lady of Good Council. The last mass of St. Anthony's was held on December 28, 1975; the building was sold and demolished the following spring. The statue of St. Anthony's de Padua that still remains in the minds of many people as the Kelly Square landmark is now at Notre Damn Mausoleum. The statue represents the hardworking, independent French Canadians of Green Island.

4.9 From French Canadians to Lithuanians

The Lithuanians first arrived in Worcester in 1869, by 1890 there were 400. Originally being farmers, the Lithuanians worked in the mills, but some opened markets bakeries and shoe stores. They settled on Providence Street, Union and Vernon Hill, in Quinsigamond Village and in the Island. As did the Irish and the French Canadians, the

Lithuanians also wanted their own church. With help from St. Casimir's Benefit Society (founded in 1891) and Fr. Joseph Jaksits, a petiton of 400 names was presented to Bishop Beaven. With the involvement of the community, the first mass for the Lithuanian people was said on October 21, 1894 in the basement of Sacred Heart church on Cambridge Street; later masses were said at Notre Dame. Joining with the Polish who also lacked a church, the Lithuanians bought a plot of land on Waverly and Ledge streets and erected a wooden church. The name of the church to this day is uncertain but several of the names are: "Immaculate Mary Church", "The Nativiy", "St. Casimit's". Fr. Jakstis became first pastor and since he spoke both Lithuanian and Polish he could minister to both people. This beneficial and implied that the same church could be used for the Polish and the Lithuanians. Although the Polish worshiped at 9am and the Lithuanians at 10:30am the Polish soon wanted their own church. Under the leadership of Rev. John J. Jakaitis, in 1916 the first exclusive Lithuanian church was completed. Following in 1924, Fr. Jakcitis saw the building of a school. It was at this school that the sister's of St. Casmir taught Lithuanian to the children of the immigrants to insure the preservation of their culture.

4.9.1 The Lithuanians and their Faith

As the Lithuanian population continued to increased there arose the need for a new church. In 1925 a new parish and church was started on Sterling Street for Vernon Hill and South Worcester. The new parish was called "Our Lady of Vilna" and Rt. Rev Msgr. Constantine A. Vasys was named pastor. In addition there was another church, on the corner of Endicott and Bigelow, All Saint's Lithuanian National Catholic church. Supposedly the church dates bask to the 1890's. Rev. Stanley B. Michiewitz was in charge of the Lithuanian church until 1913 when it ceased to hold services. Until now,

the building was used to hold Swedish services and as a school. Today the building is used as a Carpenter's local No. 107.

In addition to educating there children and preserving their heritage, 65 members from St. Casimir's formed an association, the "Lithuanian Naturalization and Social Club". The purpose of the club was to educate Lithuanians to becoming citizens. The head quarters was located on 12 Vernon Street, but was closed in 1959 to make way for the Expressway I-290.

The preservation of the ethnic heritage was carried to the businesses on Millbury Street. The ethnic shopping area on Millbury Street supplied old world delicacies as well as daily necessities. This allowed the Lithuanians to celebrate holidays like "Kucia" in there traditional way. In addition to the ethnic shopping area, the Lithuanians owned many businesses that provided a service to the community. On 15 Millbury Street there was a Lithuanian co-operative shoe store. Ceaser Wackell had a saloon on 94 Millbury, the present location of Charles Restaurant. Joseph Dirsa, an undertaker, was located on Ellsworth Street. Mr. Cincky had a funeral parlor on Harding and Ellsworth Street. Joseph Glavickas sold meats at 233 Millbury, now Pernet Family Health Clinic. Duda National Bakery on Ashmont Ave was remembered for its steam bread. Charles Miskavich, Aldona Cepulonis owned Kauna Bread at 165 Millbury Street in the late 1930's. Each of pure rye weighed 12 lbs and was delivered daily by the railway express from Water Viliet, N.Y. There was Dedynus Confectionary Ice Cream store, located on Millbury and Lafayette Streets (Now Charles restaurant property). Aldona, a local member of the community, remembered it by its triangle doorway. When Dedynus died, Staley Wackell, first Lithuanian city councilor and son of Ceaser Wackell, and his wife,

Antinica, operated it until 1936. The Wackell name was carried on to other businesses, the Wackell Insurance Agency 14 Millbury Street.

The Lithuanian people continued to arrive until the 1950's. Since the Lithuanian people valued religion, education, there new life in Green Island was promising. The Lithuanians left their mark on education, business, law, and government, the military, and social services. As a result Green Island proudly displays its Lithuanian heritage.

4.10 The Polish

The Polish immigrated because of overpopulation lack of available land to cultivate, insufficient industrial development, and political pressures in their native land. The Polish first came to Jamestown, Va. in 1608, by 1860 there were 30,000 polish people in the United States. By the turn of the century the wave of Polish immigrants had spilled over to Worcester. The city clerk's office had on record resident's with last names such as Czechowicz, Kaminski, Stalanski, Lewuck, and Bojanowski.

Francis Bojanowski was the first Polish resident of Worcester to become an American citizen, having sworn his oath of allegiance on October 25, 1894. According to his daughter he was very instrumental in helping other Polish immigrants to attain citizenship within Worcester.

4.10.1 The Polish and their faith.

With their religious beliefs running parallel with the Lithuanians, they joined with the Lithuanians in purchasing some land and erecting a church on Waverly Street. By 1901 the Polish desired a church of their own. They purchased land on Richland Street and on May 23 of the following year, they met at Hotel Vernon to discuss the establishment of a parish and the building of a church. The first mass was said in the new

church, called St. Mary's on August 15, 1906, with Rev. John Z. Moneta serving as first pastor. With the establishment of a new parish, at the turn of the century there were 150 Polish families in Worcester.

With the establishment of their faith, the Polish were able to further implement their mark of heritage with the formation of social and political clubs. 1) The Polish Naturalization Independent Club first met in the New Hall of St. Mary's church. 2) The Polish National Alliance of the United States of North America provided insurance and political education programs. 3) Polish Falcons, now white Eagle Polish club fractional organization, met at Father Mathew's Hall on Green Street.

With the construction of their social development and their parish, they recognized the need for a school. On September 5, 1915 announced the opening of St. Mary's school. In 1936 the high school was introduced as a new addition to St. Mary's. The Sister's of the Holy Family of Nazareth served and still serve as teachers for the Parish.

The institution of St. Mary's focused on providing children with the opportunity to learn both Polish and English. In addition to learning the language they could learn the history and customs of both America and Poland. Pastor Rt. Rev. Msgr. Boleslaus A. Bojanowski saw to the continued growth of the parish. Since 1950 the parish has been known as "Our Lady of Czestochowa".

4.10.2 From faith to businesses

The Polish Immigrants had their stamp on businesses. In 1921 Joseph P. Buynisks, first registered pharmacist of Polish origin in MA opened his first store on 87 Millbury Street. In 1916 the store moved to its present location at the Corner of Millbury

and Lafayette Street and added a U.S. Postal substation. During the 1920's the store became known as Vernon Drug Company and was popular amongst the local Vernon Hill residents.

According to Joseph Buyniski's wife he had great faith and courage and felt that by hard work and willingness to be of assistance to the people in the Island, it was possible to succeed (Laurie, ND). This tradition was carried on by his children and rippled through Green Island. On February 19, 1982, Vernon Drug observed its 70th Anniversary with the honor of being the oldest family owned drug store in Worcester.

The theme of long running family owned businesses was not exclusive to Buyniski. On the Corner of Millbury and Lafayette Street was "Charles Restaurant". In 1983 it celebrated its 60th Anniversary as the oldest family run restaurant under the same ownership in Worcester. Charles Paul Sharameta, a polish immigrant, founded the restaurant in 1923 as "Charles Lunch". The location provided old world delicacies to the new immigrants and meals that were good, hot, and plentiful to workers of steel mill and factories near by.

Charles son-in-law, Stanley, remembers Millbury Street as a melting pot with various ethnic shops. A two way traffic trolley ran down the middle of the street. With the drastic changes in the 1950's specifically the implementation of I-290, the ethnic influences declined. Charles restaurant became a noted seafood and steak house. Although the appointed establishment did not reflect the heritage of the Polish immigrants it still managed to succeed in drawing in local politicians such as Mayor Jimmy O'Brien, Matt Joseph Stacey, and Harold Donohue.

Although the ethnic influences dwindled in the diner, the commitment to providing a service to the community carried on. Ciborowski Insurance Agency of Worcester on 135 Millbury Street was founded in 1911 by the father of Henry J. Ciborowski, Jacob Ciborowski. According to Jacob's wife, he began selling insurance from the front room of their home at #59 Millbury Street, where the present Municipal Parking lot is located. Samuel B. Sadick owned a hardware and leather dealer, located at 64-72 Millbury Street, that was founded after his arrival in 1913. Samuel was fluent in Russian, Polish, German, Jewish, and Lithuanian. This proved to be useful when providing a diverse range of Items to the Green Island district. The store was large and had practically everything someone in the community would need. Many costumers recall asking for a specific nail and Sam being able to retrieve the nail and ring the individual up in minutes. The tradition of a family businesses and having it of value to the community carried on to Samuel's son next door, when his son opened a plumbing supply store. Similar to his father, Samuel's son provided excellent service to his fellow residents of the Green Island district. Samuel Sadick finally retired in November 1975 at the age of 99.

The list of businesses owned by Polish immigrants continued well past Samuel Sadick: Abraham H. Noar founder of Noar Oil Co. on water street, Andrew Gebski, president of former Millbury Furniture store on 190 Millbury Street, O.J. Konczanin, owner of a printing and music shop which grew into Economy Furniture on 76 Millbury Street, Lucian Karolkiewicz the undertaker, Henry Freeman the baker, Peter Rojcewicz the Ward Street grocery store proprietor, Leopold Kozakiewicz, Marian Malecki a 1949

immigrant owner of the former Uncle Tom's Café at 124 Millbury Street. The children of Polish immigrants continue the tradition as they stand tall as loaders in many fields.

As was stated by many locals the Green Island area was a true "melting pot" in terms of the level of diversity that existed in the area. What was important was not so much that the Green Island district housed the Irish, French Canadians, Polish, and Lithuanians, but that they contributed to making their mark in terms of religion and ethnic heritage. In addition what is also important to note is the level of commitment in economic and social development, by focusing their aims to establish businesses that serviced the community and parishes that provided a home to their ethnic heritage.

4.11 I-290 cuts off the Life stream

Despite their effort in establishing their community there was little they could do to avoid the drastic changes that the construction of I-290 would bring. The construction of I-290 meant taking down houses, destroying landmarks, forcing businesses to relocate, and shutting off street. In essence the life source of Millbury Street was cut off by the implementation of I-290. In the 1950's and the early 1960's Millbury fought for a change of plans. Some people proposed moving west of Millbury street while others favored going through the "Old St. Vincent Hospital". In any event the expressway plowed through the east section of the neighborhood. With this the Green Island lost: Millbury Street School, the entire Ward Street School, bakeries on Foyle Street, the Lithuanian Naturalization Club on Lower Vernon Street, the Polish Naturalization Independent Club on Foyle Street, the stage area of the "Rialto Theater", 25% of the housing stock and roughly 25% of the population. The Millbury Street municipal parking lot called for the

demolition of more houses and stores including Freeman's Bakery Inc., 73 Millbury Street, which was forced to relocate near Chandler Street.

Since the Construction of I-290, Green Island has struggled for its economic life. The construction of I-290 not only removed many businesses and institutions, which were the life of Green Island, but cut off many of the convenient routs that led to Millbury Street. The flow of traffic from downtown, which at one time drew shoppers from all over Worcester County, was generous enough to spill over onto Shrewsbury Street and Water Street. The people, that were the life stream of Millbury Street, were cut off. To get to Millbury Street people would have to walk over the expressway by way of Vernon Street Bridge or go under the expressway by means of tunnels on Endicott or Seymour Streets. The shortcuts provided by Foyle, Taylor, Richland, Worth, and Wade streets were no more. With the expressway cutting off access to and from Vernon Hill, destroying housing immigrants had built, and leveling businesses the population dwindled from 3700 to 1900 and the number of housing units dropped from 1468 to 821. Millbury Street, which was ounce busier than Main Street and a melting pot for Poles, Lithuanians, French Canadians, Jews, Hispanics, Asians, Albanians, Italians, Irish, and Lebanese, was sentenced to death by being cut off from its life source. As if the stab form I-290 was not enough, in 1981 a 60 million storm water flood control project resulted in the demolition of 11 commercial and residential buildings, and 23 housing units. In addition 34 housing units were torn down due to fire and Abandonment.

Today the Blackstone Canal district is a byproduct from the Green Island district. Being bound by railroad tracks and I-290, the area is home to many of the economic fruits that ounce were the basis of the Green Island's prosperity.

Projects have been implemented by the Green Island Revitalization Task Force with the purpose of revitalizing the Blackstone Canal district area. In the 1980's there was the revitalization of the Rialto Theatre. The theater was newly renovated after being halfway demolished with the implementation of I-290. Additional, small funded projects were: a new bill board that sits atop Messier's Diner, and plans to replace "Charles Restaurant" with housing. The construction of 4.7 million elderly housing projects at 2 Lafayette Street was suppose to bring in a new market of people to the Millbury Street businesses, as was stated by Loraine Laurie the Businesses Worcester (Aug 22- Sep 4 1988). Lorraine Laurie is a unofficial historian of the area and community liaison for the Green Island Residents Group Inc. As stated by Lorraine Laurie in Business Worcester "the biggest challenge left is making people aware that there are businesses down here that can respond to their needs" (Green Island, 1988, p. 1).

Other areas that were planned for revitalization were Water Street and small residential pockets, which grew up around the Mills of the 19th century. Although most of the old factories the Fox mills and Crompton Loom Works no longer exist some of the housing stock that was built with the mills is still standing. Much of the residential housing dates back to the 1880's and even fewer to the 1850's. Civil War vintage and Victorian-era housing is scattered in the streets surrounding the former Lamartine school complex. In the 1980s many neighborhoods had retained their traditional residential, industrial and commercial mix with Wyman Gordon Co as the major industrial presence of the 1980's and still is to this day. Rev. Michael Foley, chairman of the Green Island Revitalization Task Force, wanted to promote the revitalization of Green Island with the

intention of maintaining its character of being a traditional, residential, industrial and commercial mix.

The problem of making the outer public aware of the businesses that exist on Millbury Street can be attributed to the image of the community that is depicted. Michael Charchaflian owner of Oscar's Cleaners, which is now known as Oscar's Coin-op has been in the area for almost 70 years. He found that in the late 80's businesses was good and he was able to open up other locations such as St. Morits on Shrewsbury Street. Michael, being optimistic to the progress of the area as expansion and growth become a reality, said that:

> "the biggest challenge currently facing the community is to increase the standards of the area. The community should stand against things that bring down the image of the community. The construction of a bar or a liquor store should not be implemented if the members of the community feel it will have a negative affect on the image of a community" (Green Island, 1988, p.1)

In addition Don Davis of King Neptere Seafood Inc. on Millbury Street agreed that the biggest problem the neighborhood faces is restoring their image (Green Island, 1988). The crucial element is that despite the renovations that have been taking place in the surrounding areas of Worcester, people are still coming to the specialty stores that are in the Green island area: Oscar's cleaners, King Neptere Seafood Inc., The Fruit and Garden outlet, and Maurice the Pant's Man. Davis felt that the Green Island area needs to promote the idea that the area is a good place to do businesses; in the past people coming in have seen failing businesses. Considering the fact that King Neptere Seafood Inc, Oscar's Cleaners, Fruit and Garden outlet, and Maurice the Pant's Man have been in

businesses for 50 years plus, gives some insight well the Island holds for doing businesses.

Apart from the Green Island Revitalization Task Force, which is no more, more affective methods were put into motion, when the City of Worcester and the Blackstone Canal, in 1996, were recognized for their role in giving birth to the American Industrial Revolution and were made part of the John H. Chafee Blackstone River Valley National Heritage Corridor. The decision to add Worcester to the Blackstone River Valley National Heritage Corridor was a result of legal efforts. In 1994 on April 23 a hearing was held to review the bill that would add Worcester and other communities to the Blackstone River Valley National Heritage Corridor. During the process the people had to look at how Worcester was affected by the construction of the canal. Kenneth Moynihan: chairman of the history department at Assumption College spoke at the hearing on how Worcester was affected by the construction of the Canal: the Irish, business development, and birth of a city. With Worcester achieving its historical recognition meant more funding for revitalization.

On August 9th, 2000 City Manager Thomas R. Hoover announced that the Transportation Bond Bill recently approved by the Massachusetts State Legislature will include a $200,000 state grant to support an extensive feasibility study of the Blackstone Canal. City officials stated that the extensive funds will allow for the first time the development of a comprehensive as to how the city can utilize rich history to develop the local economy. Thomas R. Hoover was most enthusiastic with the importance of the Blackstone Canal playing a role in the development/revitalization of the city by stating:

"As we work to create our vision for the future, it is imperative that the city take a look at an integral piece of its past as a source of future development - the Blackstone Canal. We are grateful to our delegation for their diligence in securing this funding - this is an important first step to ensuring that the Blackstone River, as it did in the past, will play a key role in future growth in the City."

In the June of 2003 marked the release of the master plan to "Free the Blackstone", a replica of the Blackstone Canal. The plan was produced by Rizzo Associates, ICON Architecture, The Williams Group, and Daniel R. Benoit and Associates. The construction of the plan set out to accomplish three goals: revitalize the Green Island neighborhood, create Worcester's South Gate, and preserve and interpret the historic area.

The plan called for integrated implementation of a coordinated set of public and private initiatives that taken together will redefine Worcester's historic canal district, creating a revitalized mixed use neighborhood and an attractive water-based urban amenity for the entire city. During the construction of the plan, the plan recognized four inherent differences within the community. The plan seperates the area into four distinct sectors: Madison North, Green Island, Quinsigamond Avenue, and Brosnihan Square. Core elements of the plan involved: telling the canal districts story, Maximize the Canal district's waterfront potential, respect the area's historic fabric, take full advantage of underutilized parcels of land, designate three themed gateways: Washington, Kelly, and Brosnihan Squares, establish Kelly Square as a new front door to Worcester and the canal district, organize the plan around the canal district's squares, unique settings and water

linkages, and create a pedestrian and bicycle network to and through the canal district. The plan detailed to look: at the economic benefits for the city and its residents, the scale of public investment, and what are the key reasons for the city to invest the time energy and money.

Responses from residents of the Blackstone Canal district have been mixed. Despite the fact that the proposal for the canal replica predicts: "improved property values and making an economically stressed neighborhood more livable" (Kush, 2003) many Businesses owners are not eager for the Blackstone Canal replica. The plan calls for that Harding Street be completely replaced by water. Many of the old blue collar companies along Harding Street rely on Harding Street for the exiting of goods. Rosalie Tirella, feared displacing vulnerable, low income residents when the property values inevitably rise. Many businesses owners along Green Street and Millbury Street see the canal replica as more of a nuisance since for many of them it would mean complications and possibly moving their location. One business stated that it would be nice, but by the time it is a reality we will be gone (Hammel, 2002).

4.12 Current Conditions, as of 2000:

The Green Island district, which has struggled for its economic life since the construction of I-290, still struggles to this very day. The Blackstone Canal district, a byproduct of the destruction of Green Island, is represented by the census data derived from census track 7325 and is shown in the figure below.

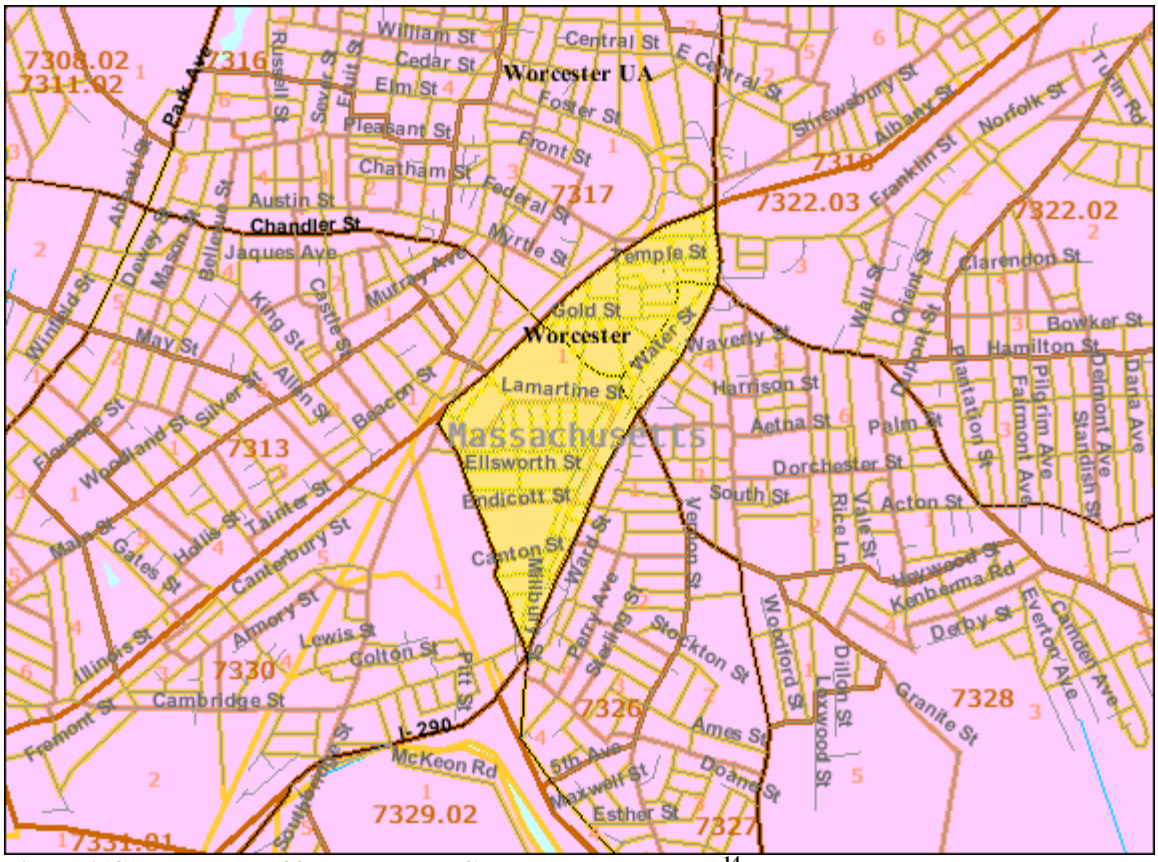


Figure 1(Census Tract 7325, Worcester County Massachusetts)[14]

The Blackstone Canal district, containing a population of 1,655 according to the U.S Census Bureau, struggles in terms of its economic well being. While it is home to about 1% of Worcester's total population, it falls short in many aspects as being a financially stable community.

The highest percentage of educational attainment, for the population of 978 that are 25 years and over, is about 31.8%. This percentage represents individuals that have completed a maximum of 9th to 12th grade, but do not have a diploma (refer to Figure 10 DP-2. Profile of Selected Social Characteristics: 2000). When you include the 17.7% that have never even made it to the 9th grade it calculates to 49.5% that have not even

[14] http://factfinder.census.gov/servlet/AGSGeoAddressServlet

graduated high school. When looking at the percentage of the 978 individuals as a whole, only 50.5% have received an educational attainment of a high school graduate or higher.

The standards of Educational Attainment have changed drastically in the past half a century. As reported by the U.S Census Bureau in 1969, the median amount of years completed for all races male and female was 12.1 years. This implied that the average employee had at least a high school education and minimal college experience refer to Figure 7 School completed by persons 25 years and over in the U.S. 1969. Based on the data one can argue that 49.5% of the persons 25 years and over in the Blackstone Canal district do not even meet the median educational attainment to compete with the standards of 1969. Further analysis shows that in 1998 the U.S. Census Bureau calculated that in the United States only 19.6% of the population has an educational attainment of no more than a high school diploma.

The question is not so much what this lack of educational attainment is a direct result from, but what can we do to insure our citizens our provided with institutions that will provide a quality education for those that want it.

When looking for a school in the area that was in a .5 mile radius from the corner of Ellsworth and Harding Street, I found one public school and two private schools: Union Hill School which accommodates Pk-6, St. Mary's which accommodates K-12 and Worcester Academy which accommodates 6th – 12th. The tuition for Worcester Academy was 20,000 dollars a year; this is almost as much as it cost to send a kid to a state school for a year, including books and dorm costs. The tuition at St. Mary's was roughly the same. My last resort was Union Hill School. Union Hill School is a public school. This meant that it would be more than proficient for a single parent, who is trying to raise

his/her child and cover all their expanses. The problem with Union Hill was the proficiency level score for the students on their MCAS. Looking at Figure 2 MCAS results for Union Hill School, it is shown that in 2005 a six grader chosen at random had a 7% chance of having the skills that were necessary to continue his or her education, at a proficient or above proficient level[15]. Further complications arise when the child passes the sixth grade and moves on to middle school. The only institutions that provide educational attainment for higher than the sixth grade, that are in a .5mile radius, are the private institutions St. Mary's and Worcester Academy. This implies that even if one can come up with the necessary funds for the tuition, their chances of succeeding are reduced due to their chances of having proficient skills for success.

In referencing to the MCAS results for other intuitions in the area there was only one public school that had scores that were above the state average for 2005. Jacob Hiatt Magnet was the only school out of five public elementary schools: Union Hill School, Jacob Hiatt Magnet, Grafton Street, Chandler Elementary Community, and Accelerated Learning Labs, that had one grade, score above the state average.

When looking at the financial standings of the 1,655 residents of the Blackstone Canal district, there are 677 households with 50.8% being a family household and 29% housing there own child less than 18 years of age (refer to Figure 8 DP-1. Profile of General Demographic Characteristics: 2000) the worst case is the female householder with no husband present. She encompasses 192 families out of the 677, which approximates to 28%. The single mother's mean income in the 1999 U.S Census Bureau approximated to be $20,559 dollars. This mean earning value is as much as one year tuition for a day student at Worcester Academy. In further looking at the financial

[15] Refer to Appendix A: MCAS for schools in Worcester

standing of the single mother, 62% of the 192 single mother families are below poverty level. As stated by the U.S. Census Bureau "the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty"(U.S. Census Bureau, 2006). [16]

4.13 Summary:

There is little debate regarding the overall economic success of the Blackstone Canal district. Many sources agree that the construction of the Blackstone Canal was a. economic flop for builders and investors. The canal only operated successfully for seven years; but, when the rail system finally got its feet off the ground, business for the Blackstone Canal Co. suffered. Eventually the company went bankrupt and had to sell of water rights in order to pay off what share holders they could; but, many share holders and investors did not receive their appropriate dividends and made nothing. Was the Blackstone Canal a failure? Ask any share holder at the time and they might hang you for such a rhetorical question.

The Blackstone Canal was not a failure in many ways. The Blackstone Canal, the working spine of the Industrial Revolution and a magnet for Irish immigration: brought increased trade, wealth and economic development, an increase in population, and acted as a catalyst for fostering economic development in neighboring areas. It was a result of theses changes that made the City of Worcester what it is today.

The Blackstone Canal brought life to the city by bringing in Immigrants who valued fundamental components of a stable community. For many of them, this meant

[16] For more information on race, ethnicity, origins, languages, and present conditions refer to Appendix B: Census Data

religion, education, and preservation of one's heritage. It was these core values that gave many of the immigrants the strength to work the long shifts in the mills, and it was the hard workers in the mill that helped shape Worcester during the Industrial Revolution.

These core values were not exclusive to the Irish, but shared amongst many: the Polish, Lithuanians, and French Canadians. They all shared a common link in the value of their faith and education. Although they practiced their faith separately, they all practiced economic development as one.

Today the Blackstone Canal district is a byproduct of Green Island, as a result of the construction of I-290. Many of the specialty stores that were tailored to the consumer are no more. King Neptere Seafood Inc, The Fruit and Garden outlet, and Maurice the Pant's Man are all gone. Millbury Street which was ounce busier than Main Street struggles for its economic survival in drawing in outside people, due to negative external perceptions. Many of the revitalization efforts that were geared towards restoring Green Island to what it was are replaced with new efforts to turn it into a tourist attraction, with the implementation of a canal replica. The Green Island revitalization Task Force, which wanted to preserve the ethnic pride and character within the streets, is no more. The Blackstone Canal district needs a method to figure out what it is all about and share it with the rest of the world.

5 Conclusion and Recommendations

When asking myself what stories I felt were important to the Blackstone Canal district, I could have said it was the Providence Merchant John Brown and his vision for using the canal as an affective way to transport goods, or Nathan Heard who had the idea of marketing his goods with "by the canal equals freshness", but these were just preliminary events to the bigger picture. After studying this district and its historical conditions and looking at the present conditions, I have concluded that it was the Blackstone Canal that gave birth to the city, but it was the people that gave birth to the canal, the neighborhood and hence the city. As a result I think that it is important to, if not preserve, but recognize the rich heritage that exist or existed in the Blackstone Canal district, by recognizing the people.

Recent talk is for a replica of the canal. Much promotion centers on the notion of "Free the Blackstone", a saying that rebounds off the tragic fait of how the canal was buried and to become part of the Worcester sewer system. Although it is sad that the canal was dissolved ounce its economic feasibility ran dry, it is also sad what the I-290 did to the Green Island district. I am not siding sympathetically with one or other, but I am more trying to establish a common link of tragedy between the two events. It was tragic in the sense that the implemented change of I-290 did consider what was already there (i.e. Green Island), but only looked at what they wanted it to be. It is for this reason that I, after long thought, propose that a wayfinding system will help to promote the surfacing beauty of what the Blackstone Canal is and was, by marketing some of the core

elements that defined the strength of its community: heritage, faith, education, and community businesses.

The Blackstone Canal district is and was an area that valued its heritage, faith, education, culture, and generation stores. It was the people of this heritage that supplied much of the driving workforce for the mill during the Industrial revolution. It was these same people that built the homes that many people still live in today. It was the same people that brought their faith and preserved it and would not compensate it in order to be accepted. It was these same people that built schools for their children to ensure the survival of their offspring. It was these same people that started businesses and specialty stores that would provide a service for their community. Much like the canal was the backbone for the industrial revolution; the immigrants were the backbone or working spine of the Green Island and Worcester.

Karen Finucan (1999) in her article "Way to go" summarized that wayfinding systems are a great way to market an areas resources, alter negative perceptions, evoke a sense of an area's history and character, and improve streetscapes. The primary focus is to take into account the negative image that has plagued the community for the past couple of decades. Foley (1986) commented in Business Week that one of the biggest problems is the image of the community. I propose that negative perceptions be altered by marketing the Blackstone Canal district's resources. In this case, its resources being the history and character that ounce filled the streets. In regards to the future efforts to construct a wayfinding system for the city of Worcester, preliminary attention must be centered on constructing a brand or several brand identities for the Blackstone Canal district. It is my hope that with proper attention being devoted to establish an affective

brand, a wayfinding system can be constructed that will market the areas resources, alter any negative perceptions, evoke a sense of the Blackstone Canal district's character, and improve streetscapes. The following are recommendations that should be considered when formulating the districts brand.

Recommendation: The Blackstone Canal, working spine of the Industrial Revolution and magnet for Irish Immigration, acted as a catalyst for fostering economic development. The Brand should symbolize the canal's contribution in industrializing Worcester and assuring that it will never again be compared to areas such Lancaster or Stow. The Blackstone Canal gave birth to the city.

Recommendation: The Blackstone Canal district was a melting pot for Irish, Lithuanians, Polish, and French Canadians. Although they were of different origin they all shared a common link of appreciation. They all valued fundamental components of a stable community: heritage, education, faith, and community businesses (i.e. generation stores) .

Recommendation: Although it was the Blackstone Canal district that gave birth to the city, it was the people that gave birth to the Blacklstone Canal, the Green Island neighborhood and hence the city. When developing a plan for revitalization the city should not just consider marketing resources that are concrete locations, but culture too, specifically the core values that were shared amongst the people of the Blackstone Canal district and Green Island: heritage, faith, education, and community businesses

Reconmendation: The brand should concentrate on voiding the negative image that has plagued the area. The Brand should focus on giving life and recognition to the core values that supported the foundation of the Green Island Community.

References

Arning, C. (2005). Retrieved May 9, 2006 from http://www.freetheblackstone.com/view.asp?id=229&page=4321

Bacow, F. A. , Silberberg, S. , Dudley R. , Loeb, R. , Becker, B. , & Shumaker, J. (2002, June). Arts district master plan. Prepared for Arts District Task Force, ARTSWorcester, and the City of Worcester, MA. Community Partners Consultants.

Baltuch, J. (2006). Retrieved April 10, 2006 from http://www.brandchannel.com/papers_review.asp?sp_id=352

Benoit R. D. and Associates, ICON architecture, Rizzo Associates, The Williams Group (2003, June). Free the Blackstone: A water resource-based, Smart Growth urban design strategy for Worcester, Massachusetts. Part of the Blackstone Canal Feasibility Study and prepared for city of Worcester office of economic development. Author

Berg, L. B. (2004). Qualitative research methods for the social sciences. Boston: Pearson Education.

Boston, B. (1996). Educating for the workplace through the arts. *Business Week* 28 Oct, 1996.

British Council. (2006). Retrieved April 20, 2006 from http://www.britishcouncil.org/arts-creative-economy-2.htm

Finucan, K. (1999). Way to go. *Planning* Vol 65. Retrieved April 20, 2006 from http://www.questia.com/PM.qst?a=o&se=gglsc&d=5001839163&er=deny

Florida, R. (2002). The Rise of the Creative Class. New York: Basic Books.

Green Island. (1988, Aug 22- Sep4). *Business Worcester*, p.1

Hammel, L. (2002, September 18). Reaction to the canal plan generally positive. *The Worcester Telegram Gazette*, pp. A1, A6.

Howkins, J. (2002). The creative economy: How people make money from ideas. U.S.A.: Penguin Press.

Kush, B. (2003, May 27). Businesses owners not eager for the Blackstone Canal replica. *The Worcester Telegram Gazette*, pp. B1, B7.

Landry, C. (2000). The creative city: A toolkit for urban innovators. U.K.: Earthscan Publications LTD.

Moynihan, K. (1994, April). Canal heydays lesson for change. *The Worcester Telegram Gazett*, pp. A1, A5.

The New England Council. (2002). The creative economy initiative: The role of the arts and culture in New England's economic competitiveness. Somerville, Massachusetts: Mt. Auburn Associates. Retrieved April 10, 2006 from http://www.newenglandcouncil.com/creativeEconomy.php

Ryan, P. (2003). The creative economy: Creative clusters key to knowledge-based economy. *Economics Research Institute.* Retrieved April 25, 2006 from http://www.marubeni.co.jp/research/eindex/0301b/index.html

Southwick, A. (1996, March). As the Blackstone Canal was being built shamrocks rained on the town of Worcester. *The Worcester Telegram Gazette*, pp A2.

Swartz, E. (2006). Jumping on the Brandwagon. Retrieved April 10, 2006 from http://www.marketingpower.com/content32558.php

U.S. Census Bureau (2006). Retrieved June 8, 2006 from http://www.census.gov/hhes/www/poverty/povdef.html

A sad demise. (1994, December 7-13). *Worcester Magazine*, p. 21.

Appendix A: MCAS for schools in Worcester

MCAS Results

Scale: % at or above proficient

Grade 3

Reading

29% (2005)
13% (2004)
28% (2003)
29% (2002)

The state average for Reading was 62% in 2005.

0 50 100

Source: MA Dept. of Education, 2004-2005

Grade 4

English Language Arts

11% (2005)
0% (2004)
26% (2003)
15% (2002)

The state average for English Language Arts was 50% in 2005.

Math

25% (2005)
4% (2004)
16% (2003)
17% (2002)

The state average for Math was 41% in 2005.

0 50 100

Source: MA Dept. of Education, 2004-2005

Grade 6

Math

7% (2005)
0% (2004)
13% (2003)
23% (2002)

The state average for Math was 46% in 2005.

0 50 100

Source: MA Dept. of Education, 2004-2005

Figure 2 MCAS results for Union Hill School[17]

[17] http://www.greatschools.net/modperl/achievement/ma/1887

Results

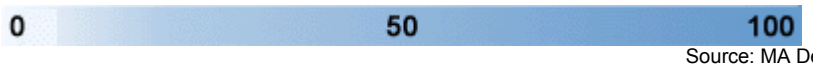
Scale: % at or above proficient

Grade 3

Reading

52% (2005)
43% (2004)
66% (2003)
74% (2002)

The state average for Reading was 62% in 2005.



Source: MA Dept. of Education, 2004-2005

Grade 4

English Language Arts

38% (2005)
38% (2004)
50% (2003)
61% (2002)

The state average for English Language Arts was 50% in 2005.

Math

28% (2005)
24% (2004)
39% (2003)
46% (2002)

The state average for Math was 41% in 2005.

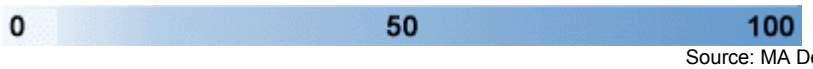
Source: MA Dept. of Education, 2004-2005

Grade 6

Math

62% (2005)
36% (2004)
43% (2003)
48% (2002)

The state average for Math was 46% in 2005.



Source: MA Dept. of Education, 2004-2005

Figure 3 MCAS for Jacob Hiatt Magnet[18]

[18] http://www.greatschools.net/modperl/achievement/ma/1895

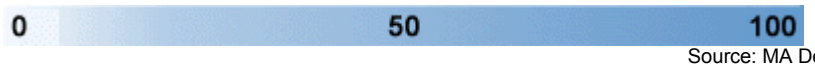
MCAS Results

Scale: % at or above proficient

Grade 3

Reading

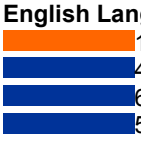
The state average for Reading was 62% in 2005.



Source: MA Dept. of Education, 2004-2005

Grade 4

English Language Arts



The state average for English Language Arts was 50% in 2005.

Math

The state average for Math was 41% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 6

Math

The state average for Math was 46% in 2005.

Figure 4 MCAS for Grafton Street[19]

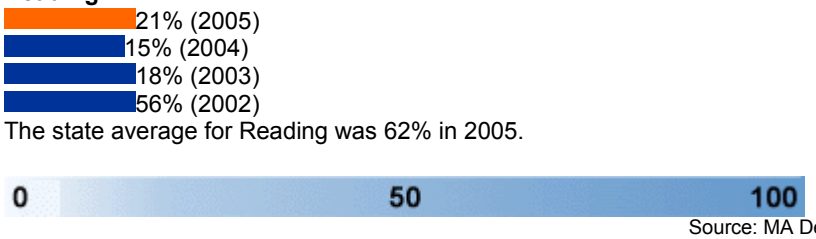
[19] http://www.greatschools.net/modperl/achievement/ma/1865

MCAS Results

Scale: % at or above proficient

Grade 3

Reading

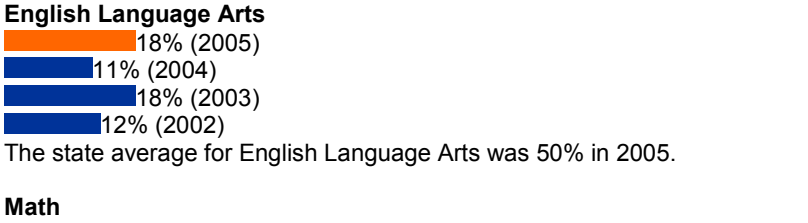


The state average for Reading was 62% in 2005.

Source: MA Dept. of Education, 2004-2005

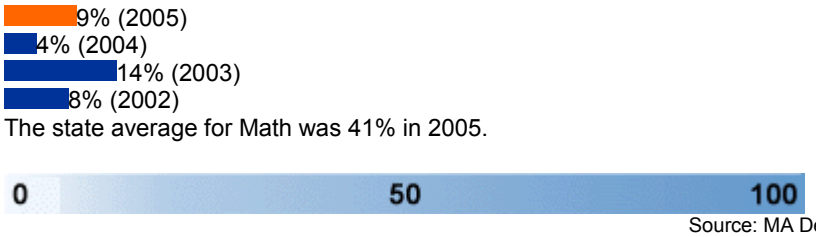
Grade 4

English Language Arts



The state average for English Language Arts was 50% in 2005.

Math

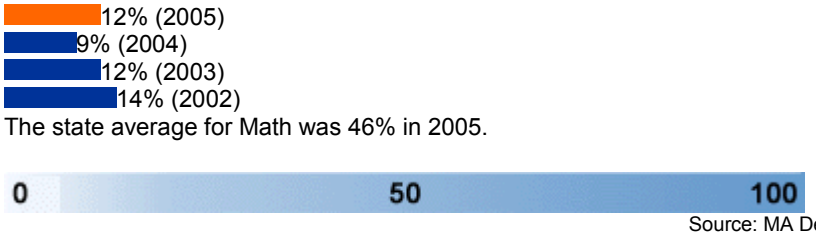


The state average for Math was 41% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 6

Math



The state average for Math was 46% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 7

English Language Arts

The state average for English Language Arts was 66% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 8

Math

14% (2005)
17% (2004)
15% (2003)
14% (2002)
The state average for Math was 39% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 10

English Language Arts

42% (2005)
41% (2004)
42% (2003)
69% (2002)
The state average for English Language Arts was 65% in 2005.

Math

36% (2005)
31% (2004)
27% (2003)
28% (2002)
The state average for Math was 62% in 2005.

Source: MA Dept. of Education, 2004-2005

Figure 5 MCAS for Accelerated Learning Labs[20]

MCAS Results

Scale: % at or above proficient

Grade 3

Reading

15% (2005)
8% (2004)
Data not available for this school (2003)
41% (2002)
The state average for Reading was 62% in 2005.

[20] http://www.greatschools.net/modperl/achievement/ma/1890

Source: MA Dept. of Education, 2004-2005

Grade 4

English Language Arts

0% (2005)

22% (2004)

Data not available for this school (2003)

17% (2002)

The state average for English Language Arts was 50% in 2005.

Math

0% (2005)

11% (2004)

Data not available for this school (2003)

11% (2002)

The state average for Math was 41% in 2005.

Source: MA Dept. of Education, 2004-2005

Grade 6

Math

21% (2005)

3% (2004)

Data not available for this school (2003)

11% (2002)

The state average for Math was 46% in 2005.

Source: MA Dept. of Education, 2004-2005

Figure 6 MCAS for Chandler Elementary Community[21]

[21] http://www.greatschools.net/modperl/achievement/ma/1854

Appendix B: Census Data

REGION, AGE, RACE, AND SEX	TOTAL POPULATION	YEARS OF SCHOOL COMPLETED								MEDIAN SCHOOL YEARS COMPLETED
		ELEMENTARY SCHOOL			HIGH SCHOOL		COLLEGE			
		0 TO 4 YEARS	5 TO 7 YEARS	8 YEARS	1 TO 3 YEARS	4 YEARS	1 TO 3 YEARS	4 YEARS	5 YEARS OR MORE	
ALL RACES--MALE										
TOTAL, 25 YEARS AND OVER	51 031	3 095	5 051	7 131	8 397	15 177	5 263	3 748	3 169	12.1
NORTHEAST	13 038	578	1 195	1 936	2 277	4 057	1 183	997	816	12.1
NORTH CENTRAL	14 456	468	1 146	2 659	2 424	4 648	1 389	902	821	12.1
SOUTH	14 966	1 676	2 212	1 647	2 411	3 782	1 338	1 052	849	11.4
WEST	8 570	375	498	888	1 286	2 691	1 352	797	683	12.5
25 TO 44 YEARS	23 109	585	1 293	1 784	3 804	8 449	2 996	2 289	1 910	12.5
NORTHEAST	5 585	114	281	418	959	2 121	641	582	469	12.5
NORTH CENTRAL	6 561	62	246	636	1 070	2 662	775	569	540	12.5
SOUTH	6 779	325	655	542	1 181	2 192	757	643	484	12.3
WEST	4 184	83	111	188	593	1 474	823	495	416	12.8
45 TO 64 YEARS	19 671	1 181	2 202	3 158	3 567	5 576	1 836	1 145	1 006	11.8
NORTHEAST	5 236	163	536	897	1 007	1 626	432	309	266	12.0
NORTH CENTRAL	5 548	149	459	1 205	1 079	1 636	510	279	232	11.7
SOUTH	5 697	719	1 014	671	950	1 277	459	318	289	10.4
WEST	3 190	151	194	385	531	1 037	434	239	219	12.3
65 YEARS AND OVER	8 251	1 329	1 555	2 189	1 027	1 153	431	313	253	8.6
NORTHEAST	2 217	301	378	621	311	311	110	106	81	8.7
NORTH CENTRAL	2 347	256	441	818	275	349	105	54	49	8.6
SOUTH	2 491	631	543	434	280	313	122	91	75	8.2
WEST	1 196	141	193	316	161	180	94	63	48	8.8
ALL RACES--FEMALE										
TOTAL, 25 YEARS AND OVER	56 719	2 919	5 118	7 677	10 130	20 955	5 301	3 271	1 348	12.1

Figure 7 School completed by persons 25 years and over in the U.S. 1969[22]

[22] http://www.census.gov/population/socdemo/education/p20-194/tab-03.pdf

Total population	**1,655**	**100.0**
SEX AND AGE		
Male	841	50.8
Female	814	49.2
Under 5 years	253	15.3
5 to 9 years	126	7.6
10 to 14 years	104	6.3
15 to 19 years	87	5.3
20 to 24 years	107	6.5
25 to 34 years	287	17.3
35 to 44 years	168	10.2
45 to 54 years	238	14.4
55 to 59 years	50	3.0
60 to 64 years	73	4.4
65 to 74 years	88	5.3
75 to 84 years	62	3.7
85 years and over	12	0.7
Median age (years)	30.2	(X)
18 years and over	1,116	67.4
Male	604	36.5
Female	512	30.9
21 years and over	1,065	64.4
62 years and over	224	13.5
65 years and over	162	9.8
Male	77	4.7
Female	85	5.1
RELATIONSHIP		
Population	**1,655**	**100.0**
In households	1,655	100.0
Householder	677	40.9
Spouse	122	7.4
Child	524	31.7
Own child under 18 years	408	24.7
Other relatives	154	9.3
Under 18 years	87	5.3
Nonrelatives	178	10.8
Unmarried partner	75	4.5
In group quarters	0	0.0
Institutionalized population	0	0.0
Noninstitutionalized population	0	0.0
HOUSEHOLDS BY TYPE		
Households	**677**	**100.0**
Family households (families)	344	50.8
With own children under 18 years	196	29.0
Married-couple family	118	17.4
With own children under 18 years	49	7.2
Female householder, no husband present	192	28.4
With own children under 18 years	147	21.7
Nonfamily households	333	49.2
Householder living alone	260	38.4
Householder 65 years and over	59	8.7

Households with individuals under 18 years	230	34.0
Households with individuals 65 years and over	162	23.9
Average household size	2.44	(X)
Average family size	3.33	(X)
HOUSING TENURE		
Occupied housing units	**659**	**100.0**
Owner-occupied housing units	81	12.3
Renter-occupied housing units	578	87.7
Average household size of owner-occupied unit	2.58	(X)
Average household size of renter-occupied unit	2.50	(X)

Figure 8 DP-1. Profile of General Demographic Characteristics: 2000[23]

Subject	Households	Families			Nonfamily households
		Total	Married-couple families	Female householder, no husband present	
NUMBER					
Total	**677**	**344**	**118**	**192**	**333**
Less than $10,000	129	71	13	58	82
$10,000 to $14,999	118	53	3	50	65
$15,000 to $19,999	85	28	0	28	45
$20,000 to $24,999	70	25	4	15	45
$25,000 to $29,999	57	26	19	0	31
$30,000 to $34,999	58	19	19	0	34
$35,000 to $39,999	16	18	11	7	5
$40,000 to $44,999	43	29	6	10	14
$45,000 to $49,999	10	10	0	10	0
$50,000 to $59,999	14	7	0	7	0
$60,000 to $74,999	36	23	23	0	6
$75,000 to $99,999	23	17	9	0	6
$100,000 to $124,999	18	18	11	7	0
$125,000 to $149,999	0	0	0	0	0
$150,000 to $199,999	0	0	0	0	0
$200,000 or more	0	0	0	0	0
Median income (dollars)	20,339	22,917	35,500	12,209	16,573
Mean income (dollars)	27,533	32,036	46,902	20,559	20,269
PERCENT DISTRIBUTION					
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Less than $10,000	19.1	20.6	11.0	30.2	24.6
$10,000 to $14,999	17.4	15.4	2.5	26.0	19.5
$15,000 to $19,999	12.6	8.1	0.0	14.6	13.5
$20,000 to $24,999	10.3	7.3	3.4	7.8	13.5
$25,000 to $29,999	8.4	7.6	16.1	0.0	9.3
$30,000 to $34,999	8.6	5.5	16.1	0.0	10.2
$35,000 to $39,999	2.4	5.2	9.3	3.6	1.5
$40,000 to $44,999	6.4	8.4	5.1	5.2	4.2

[23] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_DP1&-ds_name=D&-_lang=en

$45,000 to $49,999	1.5	2.9	0.0	5.2	0.0
$50,000 to $59,999	2.1	2.0	0.0	3.6	0.0
$60,000 to $74,999	5.3	6.7	19.5	0.0	1.8
$75,000 to $99,999	3.4	4.9	7.6	0.0	1.8
$100,000 to $124,999	2.7	5.2	9.3	3.6	0.0
$125,000 to $149,999	0.0	0.0	0.0	0.0	0.0
$150,000 to $199,999	0.0	0.0	0.0	0.0	0.0
$200,000 or more	0.0	0.0	0.0	0.0	0.0

Figure 9 QT-P32 Income distribution of households and families: 2000[24]

SCHOOL ENROLLMENT		
Population 3 years and over enrolled in school	**393**	**100.0**
Nursery school, preschool	61	15.5
Kindergarten	14	3.6
Elementary school (grades 1-8)	194	49.4
High school (grades 9-12)	78	19.8
College or graduate school	46	11.7
EDUCATIONAL ATTAINMENT		
Population 25 years and over	**978**	**100.0**
Less than 9th grade	173	17.7
9th to 12th grade, no diploma	311	31.8
High school graduate (includes equivalency)	271	27.7
Some college, no degree	137	14.0
Associate degree	55	5.6
Bachelor's degree	16	1.6
Graduate or professional degree	15	1.5
Percent high school graduate or higher	50.5	(X)
Percent bachelor's degree or higher	3.2	(X)
MARITAL STATUS		
Population 15 years and over	**1,172**	**100.0**
Never married	521	44.5
Now married, except separated	289	24.7
Separated	83	7.1
Widowed	79	6.7
Female	37	3.2
Divorced	200	17.1
Female	106	9.0
GRANDPARENTS AS CAREGIVERS		
Grandparent living in household with one or more own grandchildren under 18 years	**53**	**100.0**
Grandparent responsible for grandchildren	31	58.5
VETERAN STATUS		
Civilian population 18 years and over	**1,116**	**100.0**
Civilian veterans	102	9.1
DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION		
Population 5 to 20 years	**337**	**100.0**
With a disability	55	16.3
Population 21 to 64 years	**903**	**100.0**
With a disability	414	45.8

[24] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTP32&-ds_name=D&-_lang=en&-redoLog=false

Percent employed	53.6	(X)
No disability	489	54.2
Percent employed	73.6	(X)
Population 65 years and over	**162**	**100.0**
With a disability	95	58.6
RESIDENCE IN 1995		
Population 5 years and over	**1,402**	**100.0**
Same house in 1995	647	46.1
Different house in the U.S. in 1995	734	52.4
Same county	618	44.1
Different county	116	8.3
Same state	14	1.0
Different state	102	7.3
Elsewhere in 1995	21	1.5
NATIVITY AND PLACE OF BIRTH		
Total population	**1,655**	**100.0**
Native	1,284	77.6
Born in United States	1,183	71.5
State of residence	988	59.7
Different state	195	11.8
Born outside United States	101	6.1
Foreign born	371	22.4
Entered 1990 to March 2000	204	12.3
Naturalized citizen	91	5.5
Not a citizen	280	16.9
REGION OF BIRTH OF FOREIGN BORN		
Total (excluding born at sea)	**371**	**100.0**
Europe	131	35.3
Asia	172	46.4
Africa	18	4.9
Oceania	0	0.0
Latin America	43	11.6
Northern America	7	1.9
LANGUAGE SPOKEN AT HOME		
Population 5 years and over	**1,402**	**100.0**
English only	815	58.1
Language other than English	587	41.9
Speak English less than "very well"	357	25.5
Spanish	173	12.3
Speak English less than "very well"	79	5.6
Other Indo-European languages	217	15.5
Speak English less than "very well"	132	9.4
Asian and Pacific Island languages	175	12.5
Speak English less than "very well"	135	9.6

Figure 10 DP-2. Profile of Selected Social Characteristics: 2000[25]

[25] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_DP2&-ds_name=D&-_lang=en&-redoLog=false

Poverty Status	Number		Percent below poverty level
	All income levels	Below poverty level	
Families	**344**	**132**	**38.4**
With related children under 18 years	223	119	53.4
With related children under 5 years	168	96	57.1
Householder worked in 1999	201	47	23.4
Full-time, year-round	124	0	0.0
Householder 65 years and over	52	0	0.0
Family received:			
Supplemental Security Income (SSI) and/or public assistance income in 1999	92	69	75.0
Social Security income in 1999	95	25	26.3
Mean income deficit (dollars)	6,496	(X)	(X)
Married-couple families	**118**	**13**	**11.0**
With related children under 18 years	55	0	0.0
With related children under 5 years	48	0	0.0
Householder worked in 1999	70	0	0.0
Full-time, year-round	57	0	0.0
Householder 65 years and over	35	0	0.0
Family received:			
Supplemental Security Income (SSI) and/or public assistance income in 1999	22	6	27.3
Social Security income in 1999	39	7	17.9
Mean income deficit (dollars)	5,831	(X)	(X)
Families with female householder, no husband present	**192**	**119**	**62.0**
With related children under 18 years	168	119	70.8
With related children under 5 years	120	96	80.0
Householder worked in 1999	103	47	45.6
Full-time, year-round	39	0	0.0
Householder 65 years and over	17	0	0.0
Family received:			
Supplemental Security Income (SSI) and/or public assistance income in 1999	70	63	90.0
Social Security income in 1999	49	18	36.7
Mean income deficit (dollars)	6,569	(X)	(X)
Nonfamily householder	**333**	**104**	**31.2**
Below 150 percent of poverty level	175	(X)	(X)
Families below:			
150 percent of poverty level	158	(X)	(X)
185 percent of poverty level	188	(X)	(X)
With related children under 18 years	159	(X)	(X)
With related children under 5 years	111	(X)	(X)

Figure 11 QT-P35. Poverty Status in 1999 of Famlies and Non Family Households: 2000[26]

[26] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTP35&-ds_name=D&-_lang=en&-redoLog=false

EMPLOYMENT STATUS		
Population 16 years and over	**1,157**	**100.0**
In labor force	695	60.1
Civilian labor force	695	60.1
Employed	646	55.8
Unemployed	49	4.2
Percent of civilian labor force	7.1	(X)
Armed Forces	0	0.0
Not in labor force	462	39.9
Females 16 years and over	**538**	**100.0**
In labor force	300	55.8
Civilian labor force	300	55.8
Employed	287	53.3
Own children under 6 years	**168**	**100.0**
All parents in family in labor force	123	73.2
COMMUTING TO WORK		
Workers 16 years and over	**618**	**100.0**
Car, truck, or van -- drove alone	354	57.3
Car, truck, or van -- carpooled	111	18.0
Public transportation (including taxicab)	60	9.7
Walked	77	12.5
Other means	16	2.6
Worked at home	0	0.0
Mean travel time to work (minutes)	20.2	(X)
Employed civilian population 16 years and over	**646**	**100.0**
OCCUPATION		
Management, professional, and related occupations	73	11.3
Service occupations	183	28.3
Sales and office occupations	109	16.9
Farming, fishing, and forestry occupations	0	0.0
Construction, extraction, and maintenance occupations	54	8.4
Production, transportation, and material moving occupations	227	35.1
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	0	0.0
Construction	30	4.6
Manufacturing	194	30.0
Wholesale trade	39	6.0
Retail trade	47	7.3
Transportation and warehousing, and utilities	38	5.9
Information	7	1.1
Finance, insurance, real estate, and rental and leasing	5	0.8
Professional, scientific, management, administrative, and waste management services	39	6.0
Educational, health and social services	154	23.8
Arts, entertainment, recreation, accommodation and food services	40	6.2
Other services (except public administration)	53	8.2
Public administration	0	0.0
CLASS OF WORKER		
Private wage and salary workers	552	85.4

Government workers	56	8.7
Self-employed workers in own not incorporated business	38	5.9
Unpaid family workers	0	0.0
INCOME IN 1999		
Households	**677**	**100.0**
Less than $10,000	129	19.1
$10,000 to $14,999	118	17.4
$15,000 to $24,999	155	22.9
$25,000 to $34,999	115	17.0
$35,000 to $49,999	69	10.2
$50,000 to $74,999	50	7.4
$75,000 to $99,999	23	3.4
$100,000 to $149,999	18	2.7
$150,000 to $199,999	0	0.0
$200,000 or more	0	0.0
Median household income (dollars)	20,339	(X)
With earnings	464	68.5
Mean earnings (dollars)	27,860	(X)
With Social Security income	186	27.5
Mean Social Security income (dollars)	8,933	(X)
With Supplemental Security Income	159	23.5
Mean Supplemental Security Income (dollars)	7,094	(X)
With public assistance income	114	16.8
Mean public assistance income (dollars)	4,132	(X)
With retirement income	70	10.3
Mean retirement income (dollars)	6,684	(X)
Families	**344**	**100.0**
Less than $10,000	71	20.6
$10,000 to $14,999	53	15.4
$15,000 to $24,999	53	15.4
$25,000 to $34,999	45	13.1
$35,000 to $49,999	57	16.6
$50,000 to $74,999	30	8.7
$75,000 to $99,999	17	4.9
$100,000 to $149,999	18	5.2
$150,000 to $199,999	0	0.0
$200,000 or more	0	0.0
Median family income (dollars)	22,917	(X)
Per capita income (dollars)	11,398	(X)
Median earnings (dollars):		
Male full-time, year-round workers	28,750	(X)
Female full-time, year-round workers	24,394	(X)
POVERTY STATUS IN 1999 (below poverty level)		
Families	**132**	**(X)**
Percent below poverty level	(X)	38.4
With related children under 18 years	119	(X)
Percent below poverty level	(X)	53.4
With related children under 5 years	96	(X)
Percent below poverty level	(X)	57.1
Families with female householder, no husband present	**119**	**(X)**
Percent below poverty level	(X)	62.0
With related children under 18 years	119	(X)
Percent below poverty level	(X)	70.8
With related children under 5 years	96	(X)

Percent below poverty level	(X)	80.0
Individuals	**577**	**(X)**
Percent below poverty level	(X)	35.8
18 years and over	270	(X)
Percent below poverty level	(X)	24.2
65 years and over	26	(X)
Percent below poverty level	(X)	16.0
Related children under 18 years	307	(X)
Percent below poverty level	(X)	62.0
Related children 5 to 17 years	170	(X)
Percent below poverty level	(X)	59.4
Unrelated individuals 15 years and over	126	(X)
Percent below poverty level	(X)	27.0

Figure 12 DP-3. Profile of selected economic characteristics: 2000[27]

Occupied Housing Units	**659**	**100.0**
UNITS IN STRUCTURE		
1-unit, detached	65	9.9
1-unit, attached	0	0.0
2 units	52	7.9
3 or 4 units	385	58.4
5 to 9 units	72	10.9
10 to 19 units	0	0.0
20 or more units	85	12.9
Mobile home	0	0.0
Boat, RV, van, etc.	0	0.0
YEAR STRUCTURE BUILT		
1999 to March 2000	0	0.0
1995 to 1998	0	0.0
1990 to 1994	19	2.9
1980 to 1989	60	9.1
1970 to 1979	5	0.8
1960 to 1969	30	4.6
1940 to 1959	185	28.1
1939 or earlier	360	54.6
ROOMS		
1 room	18	2.7
2 rooms	50	7.6
3 rooms	137	20.8
4 rooms	87	13.2
5 rooms	180	27.3
6 rooms	160	24.3
7 rooms	21	3.2
8 rooms	0	0.0
9 or more rooms	6	0.9
Median (rooms)	4.7	(X)
YEAR HOUSEHOLDER MOVED INTO UNIT		
1999 to March 2000	144	21.9
1995 to 1998	247	37.5

[27] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_DP3&-ds_name=D&-_lang=en&-redoLog=false

1990 to 1994	134	20.3
1980 to 1989	61	9.3
1970 to 1979	55	8.3
1969 or earlier	18	2.7
VEHICLES AVAILABLE		
None	277	42.0
1	272	41.3
2	65	9.9
3 or more	45	6.8
HOUSE HEATING FUEL		
Utility gas	511	77.5
Bottled, tank, or LP gas	27	4.1
Electricity	67	10.2
Fuel oil, kerosene, etc.	47	7.1
Coal or coke	0	0.0
Wood	0	0.0
Solar energy	0	0.0
Other fuel	0	0.0
No fuel used	7	1.1
SELECTED CHARACTERISTICS		
Lacking complete plumbing facilities	0	0.0
Lacking complete kitchen facilities	6	0.9
No telephone service	43	6.5
OCCUPANTS PER ROOM		
Occupied housing units	**659**	**100.0**
1.00 or less	637	96.7
1.01 to 1.50	16	2.4
1.51 or more	6	0.9
Specified owner-occupied units	**35**	**100.0**
VALUE		
Less than $50,000	0	0.0
$50,000 to $99,999	24	68.6
$100,000 to $149,999	11	31.4
$150,000 to $199,999	0	0.0
$200,000 to $299,999	0	0.0
$300,000 to $499,999	0	0.0
$500,000 to $999,999	0	0.0
$1,000,000 or more	0	0.0
Median (dollars)	81,900	(X)
MORTGAGE STATUS AND SELECTED MONTHLY OWNER COSTS		
With a mortgage	13	37.1
Less than $300	0	0.0
$300 to $499	0	0.0
$500 to $699	8	22.9
$700 to $999	0	0.0
$1,000 to $1,499	5	14.3
$1,500 to $1,999	0	0.0
$2,000 or more	0	0.0
Median (dollars)	681	(X)
Not mortgaged	22	62.9
Median (dollars)	337	(X)
SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999		

Less than 15 percent	9	25.7
15 to 19 percent	5	14.3
20 to 24 percent	0	0.0
25 to 29 percent	6	17.1
30 to 34 percent	0	0.0
35 percent or more	15	42.9
Not computed	0	0.0
Specified renter-occupied units	**578**	**100.0**
GROSS RENT		
Less than $200	53	9.2
$200 to $299	45	7.8
$300 to $499	160	27.7
$500 to $749	258	44.6
$750 to $999	33	5.7
$1,000 to $1,499	23	4.0
$1,500 or more	0	0.0
No cash rent	6	1.0
Median (dollars)	530	(X)
GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME IN 1999		
Less than 15 percent	120	20.8
15 to 19 percent	58	10.0
20 to 24 percent	52	9.0
25 to 29 percent	69	11.9
30 to 34 percent	52	9.0
35 percent or more	221	38.2
Not computed	6	1.0

Figure 13 DP-4. Profile of selected housing characteristics: 2000[28]

TENURE BY UNITS IN STRUCTURE		
Owner-occupied housing units	**81**	**100.0**
1, detached	35	43.2
1, attached	0	0.0
2	7	8.6
3 or 4	39	48.1
5 or more	0	0.0
Mobile home	0	0.0
Boat, RV, van, etc	0	0.0
Renter-occupied housing units	**578**	**100.0**
1, detached	30	5.2
1, attached	0	0.0
2	45	7.8
3 or 4	346	59.9
5 to 9	72	12.5
10 to 19	0	0.0
20 to 49	52	9.0
50 or more	33	5.7
Mobile home	0	0.0
Boat, RV, van, etc	0	0.0
SELECTED CHARACTERISTICS OF HOUSEHOLDS WITH HOUSEHOLDER 65 YEARS AND OVER		

[28] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_DP4&-ds_name=D&-_lang=en&-redoLog=false

Occupied housing units	**156**	**100.0**
Owner occupied	37	23.7
Less than 1.01 occupants per room	149	95.5
No telephone service	6	3.8
No vehicle available	74	47.4
Below poverty level	37	23.7
With meals included in rent	0	0.0
SELECTED CHARACTERISTICS OF HOUSEHOLDS BELOW POVERTY LEVEL		
Owner-occupied housing units	**7**	**100.0**
Lacking complete plumbing facilities	0	0.0
1.01 or more occupants per room	0	0.0
Built 1939 or earlier	7	100.0
Householder 65 years and over	0	0.0
With public assistance income	0	0.0
With Social Security income	7	100.0
No telephone service	0	0.0
Renter-occupied housing units	**200**	**100.0**
Lacking complete plumbing facilities	0	0.0
1.01 or more occupants per room	9	4.5
Built 1939 or earlier	103	51.5
Householder 65 years and over	37	18.5
With public assistance income	55	27.5
With Social Security income	34	17.0
No telephone service	12	6.0

Figure 14 QT-H10. Units in structure, householder 65 years and over and householder below poverty level: 2000[29]

TENURE BY VEHICLES AVAILABLE		
Owner-occupied housing units	**81**	**100.0**
No vehicle available	0	0.0
1 vehicle available	51	63.0
2 vehicles available	23	28.4
3 vehicles available	0	0.0
4 vehicles available	7	8.6
5 or more vehicles available	0	0.0
Vehicles per household	1.5	(X)
Renter-occupied housing units	**578**	**100.0**
No vehicle available	277	47.9
1 vehicle available	221	38.2
2 vehicles available	42	7.3
3 vehicles available	32	5.5
4 vehicles available	0	0.0
5 or more vehicles available	6	1.0
Vehicles per household	0.8	(X)
TENURE BY HOUSEHOLD INCOME IN 1999		
Owner-occupied housing units	**81**	**100.0**
Less than $5,000	0	0.0
$5,000 to $9,999	7	8.6
$10,000 to $14,999	8	9.9
$15,000 to $19,999	21	25.9

[29] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTH10&-ds_name=D&-_lang=en&-redoLog=false

$20,000 to $24,999	6	7.4
$25,000 to $34,999	0	0.0
$35,000 to $49,999	16	19.8
$50,000 to $74,999	18	22.2
$75,000 to $99,999	0	0.0
$100,000 to $149,999	5	6.2
$150,000 or more	0	0.0
Median (dollars)	21,875	(X)
Renter-occupied housing units	**578**	**100.0**
Less than $5,000	23	4.0
$5,000 to $9,999	97	16.8
$10,000 to $14,999	95	16.4
$15,000 to $19,999	59	10.2
$20,000 to $24,999	66	11.4
$25,000 to $34,999	124	21.5
$35,000 to $49,999	51	8.8
$50,000 to $74,999	35	6.1
$75,000 to $99,999	19	3.3
$100,000 to $149,999	9	1.6
$150,000 or more	0	0.0
Median (dollars)	20,852	(X)

Figure 15 QT-H11. Vehicles available and Householder income in 1999: 2000[30]

PLACE OF BIRTH		
Total population	**1,655**	**100.0**
Native	1,284	77.6
Born in state of residence	988	59.7
Born in other state in the United States	195	11.8
Northeast	128	7.7
Midwest	4	0.2
South	41	2.5
West	22	1.3
Born outside the United States	101	6.1
Puerto Rico	75	4.5
U.S. Island Areas	0	0.0
Born abroad of American parent(s)	26	1.6
Foreign born	371	22.4
RESIDENCE IN 1995 - STATE AND COUNTY		
Population 5 years and over	**1,402**	**100.0**
Same house in 1995	647	46.1
Different house in the United States in 1995	734	52.4
Same county	618	44.1
Different county	116	8.3
Same state	14	1.0
Different state	102	7.3
Northeast	10	0.7
Midwest	7	0.5
South	28	2.0
West	57	4.1
Elsewhere in 1995	21	1.5
RESIDENCE IN 1995 - METROPOLITAN/NONMETROPOLITAN		
Population 5 years and over	**1,402**	**100.0**

[30] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTH11&-ds_name=D&-_lang=en

Living in an MSA/PMSA in 2000	1,402	100.0
Same house in 1995	647	46.1
Different house in the United States in 1995	734	52.4
Same MSA/PMSA	611	43.6
Central city	507	36.2
Not in central city	104	7.4
Different MSA/PMSA	116	8.3
Central city	34	2.4
Not in central city	82	5.8
Not in an MSA/PMSA	7	0.5
Elsewhere in 1995	21	1.5
Not living in an MSA/PMSA in 2000	0	0.0
Same house in 1995	0	0.0
Different house in the United States in 1995	0	0.0
In an MSA/PMSA	0	0.0
Central city	0	0.0
Not in central city	0	0.0
Not in an MSA/PMSA	0	0.0
Elsewhere in 1995	0	0.0

Figure 16 QT-P22, Place of Birtth and Residence in 1995: 2000[31]

NATIVITY, CITIZENSHIP STATUS, AND YEAR OF ENTRY		
Total population	**1,655**	**100.0**
Native	1,284	77.6
Foreign born	371	22.4
Naturalized citizen	91	24.5
Not a citizen	280	75.5
Entered 1990 to March 2000	204	55.0
Naturalized citizen	44	21.6
Not a citizen	160	78.4
Entered 1980 to 1989	109	29.4
Naturalized citizen	14	12.8
Not a citizen	95	87.2
Entered before 1980	58	15.6
Naturalized citizen	33	56.9
Not a citizen	25	43.1
FOREIGN-BORN POPULATION BY REGION OF BIRTH AND YEAR OF ENTRY (excluding born at sea)		
Europe	**131**	**100.0**
1990 to March 2000	80	61.1
1980 to 1989	5	3.8
Before 1980	46	35.1
Asia	**172**	**100.0**
1990 to March 2000	84	48.8
1980 to 1989	76	44.2
Before 1980	12	7.0
Africa	**18**	**100.0**
1990 to March 2000	18	100.0
1980 to 1989	0	0.0
Before 1980	0	0.0
Oceania	**0**	**(X)**

[31] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTP22&-ds_name=D&-_lang=en&-redoLog=false

1990 to March 2000	0	(X)
1980 to 1989	0	(X)
Before 1980	0	(X)
Latin America	**43**	**100.0**
1990 to March 2000	22	51.2
1980 to 1989	21	48.8
Before 1980	0	0.0
Northern America	**7**	**100.0**
1990 to March 2000	0	0.0
1980 to 1989	7	100.0
Before 1980	0	0.0

Figure 17 QT-P14 Nativity, Citizenship, and year of entry, and region of Birth: 2000[32]

[32] http://factfinder.census.gov/servlet/QTTable?_bm=y&-geo_id=14000US25027732500&-qr_name=DEC_2000_SF4_U_QTP14&-ds_name=D&-_lang=en&-redoLog=false