

The Pennsylvania State University

The Graduate School

College of Arts & Architecture

**RESOURCEFUL PERSPECTIVES:
VALUING INDUSTRIAL HERITAGE IN SMALL TOWNS**

**A Thesis in
Architecture**

by

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Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Architecture

May 2013

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Abstract

Comprised of small towns throughout the Midwestern and Northeastern United States, the Rust Belt reveals a marked history of industrialization that initiated a culture defined by the value of an industrial heritage. This thesis examines how small town communities within the Rust Belt can approach revitalization in a manner that values their industrial heritage. Throughout the years, these towns have experienced both functional and physical erosion as a result of the economic changes consequent to the decline of industrial production. These manufacturing locations once offered an ideal setting and much-needed resources that set the stage for industrial forces to shape and reshape the urban fabric of the Rust Belt.

In the Rust Belt, specifically along the Monongahela River Valley, industrialization was once a modern concept that represented technological advances and a means of economic progress. The manufacturing industries that succeeded did so through strong ties to their respective communities. This process ultimately created an industrial character that remains steadfast even through altered architectural environments and landscapes. Unfortunately, the towns that once depended on manufacturing industries for a prosperous livelihood are now struggling in the wake of ongoing industrial decline and ever-increasing departure. Their remaining industrial heritage is often a dormant concept conceived by once thriving mills and factories, telling a myriad of invaluable stories which can be viewed and judged from multiple perspectives.

Understanding the value of industrial heritage provides a new viewpoint from which to evaluate a community's local characteristics. From this perspective an Industrial Heritage Mechanism (IHM) was created to evaluate existing local industrial heritage assets of small Mon Valley towns. The mechanism makes use of a streamlined insight into industrial heritage that was developed in the form of specific categories. These defined industrial heritage categories break down the resource in terms of geographic advantages, business clusters, institutions, and unique amenities. The IHM categories define industrial heritage from multiple perspectives allowing a strong basis from which to create town specific assessment profiles. The assessment of small towns through the IHM enables the identification of important industrial heritage features possessing the ability to play a major role in revitalization efforts.

This new approach of considering struggling small towns through the lens of industrial heritage is evident at the chosen Mon Valley case study sites of Braddock, Monessen, and Brownsville. The Industrial Heritage Mechanism was formulated to gauge the local assets of these locations and link the complex perception of industrial heritage in concert with town assessments. This will ultimately provide a basis for revitalization strategies, specific to each respective case study town relative to their own industrial heritage. The mechanism's final product is a town specific profile of local assets leading to the development of revitalization plans that value industrial heritage. In effect, the value of industrial heritage provides a foundational basis for the revitalization efforts of small town Rust Belt communities.

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Acknowledgements

I would like to thank my thesis committee at Penn State. Without their support, the completion of this thesis would not have been possible. Professor of Architecture Jawaid Haider's experience and early guidance played a role in shaping my research. His attention and knowledge offered was valued asset in my work. Assistant Professor of Science, Technology, and Society Steven Walton is recognized for his recommendations and suggestions throughout my research. He took an interest in my thesis and provided the opportunity to clarify a variety of topics concerning industry. Most importantly, I want to thank my thesis advisor, Lisa Iulo an Associate Professor in the Department of Architecture. Her patience and ability to know when and what to focus on contributed greatly. She was a much needed resource for guiding this process and allowing me to work in my own way. Once again thank you to everyone involved in my thesis for granting me this important experience and for broadening my own understanding of architecture.

Everything conspires to disregard and devalue what is thrown on the scrapheap until some are prepared to stand up and declare it of value.

- Alfrey & Putnam, 1992

Chapter ONE

Industrial Heritage and Small Towns

1.1 Introduction

The Rust Belt was once known as the manufacturing belt, a result of resource-driven industrial endeavors dependent upon and influenced by locally available carbon energy, making the region the center of a national economy. Later, non-union labor coupled with widely-distributed electricity and oil in the late twentieth century made other American regions alternate sites of production. This led to the decline of the region, thus creating the Rust Belt moniker. The Rust Belt reveals a historical accretion of layers of industrial heritage that has continually altered the region's economic and cultural landscape.

Former industries, developed in parts of the Rust Belt, served in functional capacities no longer feasible. Most recognizable industries in these areas have long since vanished, leaving behind more than just the industrial structures that have fallen into disrepair. Nora Greer (1998), a communications consultant in architecture and urban affairs, has made the point that beyond the environmental implications, past industrial heritage should be maintained while preserving a sense of place and bolstering cultural identity. The sense of place developed and provided by the industrial heritage of these small towns, is a threatened asset in the region that has come to be known as the Rust Belt.

The Rust Belt region was once regarded as its own large-scale machine dependent on local community resources. Throughout the nineteenth century and up to the present day, the Rust Belt has been significantly transformed. The shifting circumstances of the manufacturing industry left small towns unprepared to deal with unforeseen changes that would affect their individual lives and communities as a whole. Even so, the invaluable remaining industrial legacy is essential to revitalization efforts of existing Rust Belt communities.

Summarized assets for renewal of small industrial cities were presented by James Connolly (2010) where he provided a basis of insight into industrial heritage. Allocating Connolly's terminology into categories allows industrial heritage to tell multiple stories and to be viewed and judged from multiple perspectives while the resource is profiled. When assessed by way of industrial heritage, these categories provide a starting point for revitalization applicable for small Rust Belt towns. The categories provide a means from which to value industrial heritage that will contribute to both insight and assessment. The devised categories deliver a quantifiable element to an otherwise broad resource.

With the aim to revive smaller industrial cities, Connolly (2010) mentions *unique amenities*, *clusters of business* in a particular industry, *institutions*, and *geographic advantages* as commonly-accepted assets to build on. These terms referring to present assets are mentioned in summary without any explanation or intended definition. Connolly himself cites Fox and Axel-Lute (2008) in a brief summary, which also deals with the renewal of small industrial cities and believes in starting from distinctive and often overlooked existing assets. Fox and Axel-Lute make reference to place-rooted, anchor institutions, and existing clusters of small

businesses concentrated by industry. They use the word amenities, but do not specifically reference geographic advantages. Unique amenities, business clusters, institutions, and geographic advantages are not presented by Connolly as categories, but as a list of common assets lacking expanded definitions. The need for expanded definitions to these points, in combination with the application of industrial heritage to these ideas, is what necessitates divergence within generally accepted definitions. Therefore for this thesis, commonly recognized existing assets of small industrial cities were taken, interpreted, and applied to ideas of industrial heritage to generate a newly-defined perspective in the context of small industrial towns.

The devised categories for industrial heritage have a role in providing both insight and assessment. The insight into industrial heritage led to the creation of these categories. The categories became part of an Industrial Heritage Mechanism (IHM) that was developed and uses them to evaluate local assets. The IHM links these connected insights and produced assessments by way of a shared process and contextual framework. The end result is the creation of place-specific, small-town revitalization plans that recognize the inherent value of industrial heritage.

1.2 Research Question

How can industrial heritage be valued in the revitalization efforts of small town Rust Belt communities?

1.3 Term Definitions

Key Terms: business clusters, environment, geographic advantages, industrial heritage, industry, institutions, landscape, revitalization, unique amenities, value

Business Clusters – Business clusters represent a valuable grouped economic background that operated as a part of organized industrial life showing the renewal, extents, and diversity of industrial heritage.

Environment – The physical, visible, material, or tangible surroundings with measurable characteristics (Fairclough, 2006).

Geographic Advantages – Geographic advantages are the broadest category consisting of geographic features that make up a local framework, but also encompass nearby surroundings consisting of linking advantageous features that exist in the landscapes and environments of industrial heritage.

Industrial Heritage – Industrial heritage “encompasses the material remains of industry, such as sites, buildings and architecture, plants, machinery and equipment. Industrial heritage also refers to housing, industrial settlements, industrial landscapes, products and processes and documentation of the industrial society” (Xie, 2006). Industrial Heritage “consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value.” (TICCIH).

Industry – The economic process that manufactures machinery, building materials, products, projects, performances, and ways of life. When the process is abandoned it retains value through the potential of new use. What is left over from the process is the raw material of industrial heritage (Alfrey & Putnam, 1992).

Institutions – Institutions assume a new use or carry out an original purpose through existing as part of a local context, acting as a rooted representation of a society’s industrial heritage, and a means of heightening awareness for the value of the resource.

Landscape – A concept of cultural, mental, emotional, or intellectual ideas. The idea of landscape goes beyond the material world into the more personal realms of memory and perception. Landscapes have no physical boundaries; rather they are the interface between people and place (Fairclough, 2006).

Revitalization – The process by which “the increase in activity and prominence associated with urban environments, empowers community residents, and stabilizes dysfunctional markets” (Schilling & Logan, 2008).

Unique Amenities – Unique amenities are the narrowest and most place specific classification acting as a blanket default category of industrial heritage referring to the useful broad range of distinct local features that frame a location as part of a larger network through accumulated regional heritage.

Value – A possessed “intrinsic” importance. In regards to industrial heritage, value is a dynamic quality represented through “material evidence and human memories” (TICCIH).

1.4 Research Design

The following section will outline the conducted research on the value of industrial heritage and its role in the revitalization of small towns. The research will be discussed in terms of purpose and significance. A methodology outline has been developed in response to the proposed research question which details the steps involved in answering the research question. An understanding of industrial heritage is needed before any assessment can lead to revitalization.

1.4.1 Purpose of the Proposed Research

A network of small towns in the region today known as the Rust Belt fed the growth and development of the United States. Cities in North America have received most of the nation’s historical attention, but “Not surprisingly, academic literature and theorizing on urban issues in North America has never placed much emphasis on small towns” (Knox & Mayer, 2009, p. 74). However, as settlements grew, small market towns developed around larger cities. Eventually these dwellings became gateway locations offering services to frontier settlers (Knox & Mayer, 2009). Early mid-Atlantic small town settlements were developed in viable locations to capitalize on natural resources. While most of these towns fell in prominence as more advanced transportation networks were developed between the 1830s and 1850s, those that rebounded did so primarily through the rise of the

steel and coal mining industries. Landscapes of the Rust Belt continue to display a history of adaptation presented through an accrued industrial heritage. These landscapes were often subject to change and are currently struggling through a new period of transition. Their once resource-driven economies still maintain a visible and invisible presence in the landscape and environment. Most of the industrial processes that created these small towns and affected their developments have essentially ceased. The result is an ongoing period of decline for small towns in the Rust Belt. As these neglected sites struggle to recapture a lost way of life, their populations and infrastructures continue to erode. This increases the need for new revitalization strategies that make use of local assets that recognize the value of industrial heritage. Introducing a new means of viewing industrial heritage can ultimately change the way the Rust Belt is perceived. The purpose of this thesis is to reveal the value that exists in small town industrial heritage in order to spur action to help restore, renew, and revitalize the small town context.

1.4.2 Research Significance

Rust Belt communities are facing a new type of problem, one that has no truly comparable past precedent from which to formulate a solution. Though these areas have a history of reinvention, they have not yet been able to rebound from their current state of stagnation. Rust Belt locations generally share a similar urban form and historical heritage; unfortunately, they also share economic idleness. Today, there is a need to look ahead and further down the line rather than planning for a new future from transition to transition. This type of thinking and physical inaction is partly to blame for the Rust Belt's current state. The industrial contexts of

small Rust Belt towns still possess assets that hold some type of link to industry. Industry overlaps and connects to the architectural environment and the perceived landscape [See Figure 1]. Industry had a foot in both the physical and the mental realm of these towns; thus, industrial heritage must be approached from multiple angles in order to truly understand and recognize its value and presence in a variety of forms. The need then arises for the creation of a fresh means of looking at the value of industrial heritage. When the industrial heritage resource is profiled for a greater understanding, it becomes a viable element in the revitalization process.

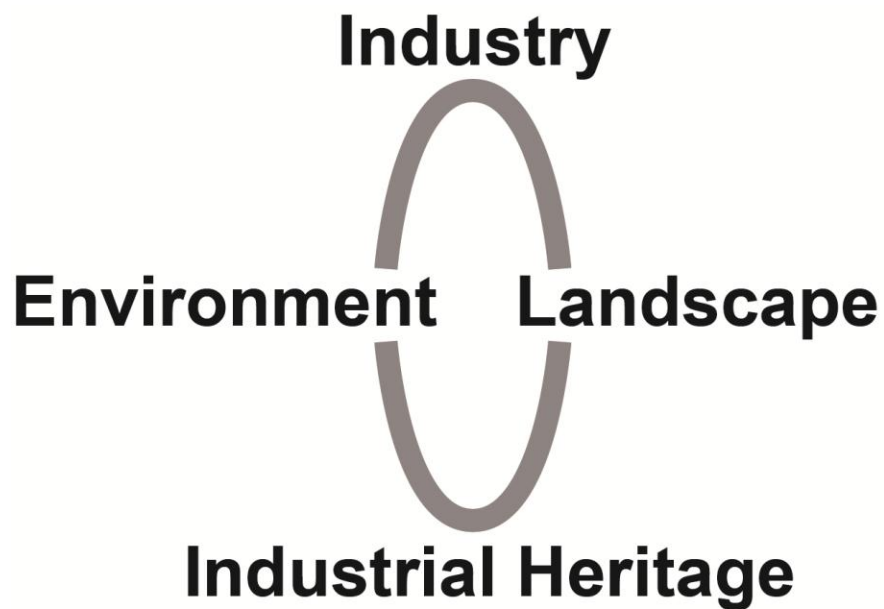


Figure 1. The Overlap of Industry and Industrial Heritage

The process of industry plays out over the landscape and the environment. Industrial heritage is the remnants of industry that also overlaps these realms.

1.4.3 Methodology

The research begins with a literature review consisting of an introduction to the industrial revolution and those industries which translated into the Rust Belt region. Current conditions of small struggling communities, along with the origin of the Rust Belt were covered. Upon industry diminishing, the remaining resource (industrial heritage), its value, and formation value will be presented as means from which to approach revitalization. From the information collected, a regional profile of the Rust Belt was formulated through the specific histories of selected Mon Valley towns. The data collected in Rust Belt communities will be limited to those in the Monongahela River Valley that have a history of industrial influence. The origins of the Rust Belt, and southwestern Pennsylvania's Monongahela River Valley in particular, show the process of change that occurs within locations spurred by industry. Industrial heritage, ingrained in each town's respective composition, is nearly everywhere in the chosen case study sites of Braddock, Monessen, and Brownsville. Industry left behind material evidence, and a more abstract but apparent social record that, when combined, creates the intrinsic quality of industrial heritage. This quality developed throughout the Rust Belt and spans the entire Mon Valley. The chosen towns are located along the Monongahela River and hold relatively small populations (between 2,000 and 10,000 people).

Industrial heritage was defined as a complex resource valuable to small town revitalization. Before it is used as a lens to gauge small town characteristics, industrial heritage was first broken down into categories. The categories along with the researched value of industrial heritage led to the creation of an Industrial Heritage Mechanism (IHM) [See Table 1]. These mechanism categories were

defined through research on the value of industrial heritage in combination with real world examples of this heritage that fit the respective categories. The combination of the researched categorical insight leading to assessment makes up the IHM. The IHM links insight to assessment based on a shared process and context of industrial heritage. The mechanism uses the insight into industrial heritage, provided by the proposed categories to view local assets. These IHM category assessments developed for Braddock, Monessen, and Brownsville are then used to develop town profiles that provide a foundational basis for specific revitalization strategies that value industrial heritage.

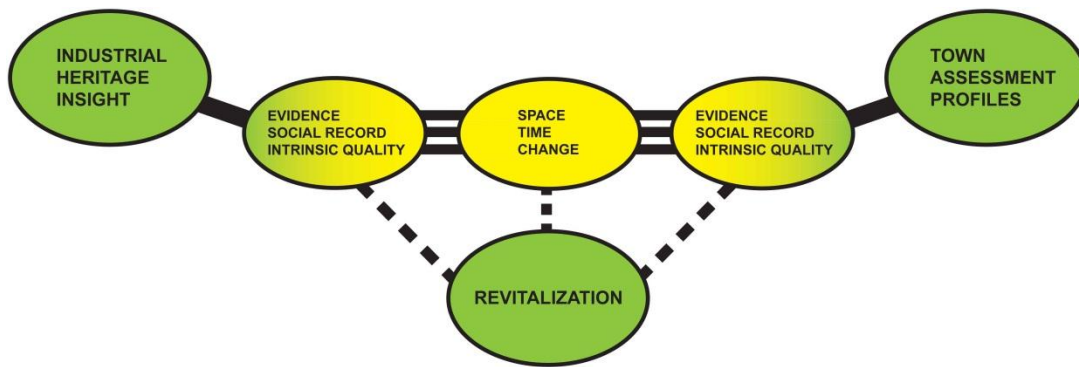


Table 1. The Industrial Heritage Mechanism

The process and backgrounds are presented that generates the value of industrial heritage and link insight to assessment, ultimately leading to revitalization.

Case and field studies were conducted at the selected case study towns. These studies analyze and inventory local assets that can be viewed in terms of industrial heritage and provide a means to articulate the application of the devised IHM categories. The study of these industrial sites enables a formation of an industrial heritage profile that can be used to consider local assets useful for revitalization efforts. The research was validated after concurrent data collection available from historical research, research on industrial heritage, and case/field

studies resulting in an innovative method for observing and categorizing the value of industrial heritage which ensue in proposed revitalization plans.

For small town revitalization to begin, an evaluation of local characteristics is needed. As a starting point for renewal, the IHM assessment can determine functional assets and unique characteristics that value industrial heritage. This foundation was used to develop a series of revitalization plans that make use of industrial heritage in the case study towns. The proposed plans consist of the value of industrial heritage and the real world examples of this heritage that make up the IHM categories. Industry was too much of a driving force behind the region for its effects not to linger. Therefore, as a starting approach, the method of valuing industrial heritage in small towns must be viewed through the lens of that same heritage. This begins with an understanding of industrial heritage from the broadest sense to the most place-specific. To qualify the value of industrial heritage, categories were devised as part of the Industrial Heritage Mechanism leading to their use in defining assets and determining appropriate revitalization plans.

1.4.4 Method Outline

1. Research the origins and history of industrialization and the Rust Belt region.
2. Research theories and ideas on the value of industrial heritage.
3. Research shared and specific histories of small towns in the Rust Belt, particularly the Mon Valley.
4. Develop a means for evaluating local characteristics based on the value of industrial heritage by way of developed categories.

5. The defined categories of industrial heritage are used to provide an understanding of the resource leading to the creation of a mechanism that can assess small town assets and inform revitalization.
6. Apply the mechanism to assess three small Mon Valley towns, Braddock, Monessen, and Brownsville.
7. Apply the mechanism's industrial heritage insight and town profile assessments to create revitalization strategies for each case study town.
8. Identify future research opportunities and current limitations.

1.5 Outcomes

The thesis addresses research on the value of industrial heritage as a foundation for revitalization in small town Rust Belt communities. In these locations there is a need for renewal in concert with valuing an industrial ethos. This thesis shows that progress does not have to come at the expense of history. It reveals that Rust Belt industrialization significantly transformed places and society in both environmental and landscape senses. Society's perceptions of the Rust Belt will also have to change to foster better growth, development, and communities. Further validation of the findings established by other source material was found. The end result is a mechanism used in small town assessment which values industrial heritage assets that can generate the groundwork of ensuing revitalization efforts. The research conducted for this thesis allows the devised concepts to further facilitate potential revitalization efforts of struggling small towns through the value of industrial heritage still present in their landscapes and built environments.

Chapter TWO

Literature Review

2.1 Industrial Revolution Introduction

The Industrial Revolution was an era of major transformation in the United States. This period began in Great Britain in the eighteenth-century before crossing the Atlantic Ocean to forever alter American culture, politics, and commerce. Such a sweeping change would not have been possible had the country not possessed a wealth of untapped natural resources. The abundance of resources appeared limitless as they fueled the rise of a developing nation (Hillstrom, 2007). The effects of a large-scale industrialization first appeared in the eastern portion of the United States before spreading to the South and West.

At first, since most Americans were engaged in agricultural endeavors, they were somewhat ambivalent about the impending industrial age. “Ultimately, however, the entrepreneurial challenges and economic possibilities of the industrial revolution dovetailed nicely with the intellectual strengths and ambitious drives of early American business leaders, entrepreneurs, and workers” (Hillstrom, 2007, p. 3). Since most American workers were still engaged in farming, agriculture maintained its economic presence during the first half of the nineteenth century. In the meantime, manufacturing centers were steadily developing in the Northeast. This section of the United States was home to an increasing population that could supply the necessary cheap labor for emerging industrialization. The monumental

shift from agriculture to a higher value in manufacturing industries was an ongoing process from around 1840. Over the next ten years, the manufacturing sector would not only increase, but reach an economic value doubling that of the agricultural sector. At this same time, the United States was gaining status as one of the world's leading industrial powers. American society and its economy had significantly transformed by the 1920s (Hillstrom, 2007). Ultimately, industrial advances and resource reliance would not only affect most of the U.S. population, but also redefine the way of life for those living in the area that would later become known as the Rust Belt.

2.1.1 The Mining Industry

The onset of industrialization required energy sources to operate and the Rust Belt was rich in abundance with these natural assets. Coal as a fuel was mainly responsible for giving life to the Industrial Revolution of the nineteenth-century. Coal became the primary fuel in both the U.S. and Europe. Pittsburgh, for example, grew from a small village to a major manufacturing center. This was a major contrast to the rest of the continent's industrial sectors reliant upon wood for heating and water for power (Hillstrom, 2006). Coal mining and later petroleum drilling provided the raw materials needed for industrial age expansion. Coal, which eventually surpassed wood, became the most economically important natural resource and leading energy source by 1880. Supply and demand for coal were able to keep pace with one another as production increased each year. Leading production states such as Pennsylvania, and later West Virginia, allowed the U.S. to topple Great Britain as the world's foremost coal producer (Hillstrom, 2007). New

energy resources aided the spread of the Industrial Revolution, but setting and available resources made the northeastern United States an ideal fit for developing industries.

Anthracite coal, mined in Pennsylvania, proved to be a major fuel source for the developing iron and steel industries. The burgeoning mining industry was also responsible for providing the essential raw materials needed by the rail and auto sectors for increasing the mobility factor. The mining towns that developed throughout Pennsylvania attracted a large immigrant workforce, primarily Europeans seeking new work opportunities. Various mining companies developed their own towns around the coal mining industry. These towns held their own distinct culture, despite being under the rule of mine owners who sought to control the workforce. Workers were tied to the towns through company-owned land, housing, and shopping (Gianoulis, 2007). With coal as a primary energy source, an entirely new way of living had been created. Since the process of mining extraction could be mobile, boomtowns were often deserted once resources were depleted. In fact, some towns came to exist solely for the sake of resource extraction, lacking any sense of community. Despite this, mining operations became the backbone of American industry, providing the era's necessary power sources (Black, 2006).

While coal was a relatively new resource, it played an increasingly important role in allowing the U.S. to move closer towards its powerful industrial future. Coal would ultimately replace charcoal which served as the former energy source for iron plantations of eastern and central Pennsylvania. Transportation was needed for the new Pennsylvanian fuel source and the state's Appalachian mountain region provided a rough terrain for raw material transit in the 1800s (Black, 2006). Though

this region was opened up by way of new transportation networks that made use of rivers and canals, it was largely dependent on the railroad: “Railroads quickly became the infrastructure of the industrial era” (Black, 2006, p. 205). The access that rail lines provided allowed industry to grow, resulting in an increased demand for more miners and laborers. A complex industrial system, with the railroad at its core, developed at a previously unseen scale. The new system enabled an era of inexpensive energy made possible through mined resources (Black, 2006). The increased use of rail transportation carried coal and other goods, but also served in transporting more than just freight. Railroad transport linked cities, making them a necessary part of town infrastructures. The rail system also played a key role in the development of economic linkages between regions. This caused further distancing from the nation’s agricultural origins. For the first time, manufacturers and farmers had access to distant markets (Hillstrom, 2007). Railroads enabled manufacturers and farmers, through the movement of imports and exports, to prosper in areas with rail connections.

2.1.2 Water-Based Industry

In addition to coal mining and steel, other industries helped shape the Rust Belt during its period of industrialization. For example, water-based industries were formed from the abundance of natural waterways throughout the Northeast and Midwest. The origins of natural waterways as a resource were made possible through the region’s coastline and navigable rivers (used for water power). This was especially prominent in New England through steam shipping and the textile industries. Construction of canal systems served to further supplement river

transport. In particular, the Erie Canal (finished in 1825), quickly turned cities such as Buffalo, New York and Cleveland, Ohio into thriving centers (Hillstrom, 2007). United States steam shipping was able to facilitate the movement of goods and materials, thereby enabling industrial growth across the country in areas that could provide river access. Steam power also made travel a more realistic option for European immigrants settling into the new frontier who would serve as laborers in other developing industries. In the 1840s regular steamboat runs had been developed for transatlantic passage. Large steam vessels provided transportation across an ocean for those seeking a new life in a new location. Steam technology markedly changed U.S. River transportation, making its presence first known in the 1810s along eastern rivers. The shipbuilding industry provided new employment opportunities with the increase of additional water ports. By the 1880s, the reign of steamships (over coastal trade and travel) had essentially reached its end. While the expansion of roads and rail networks were a main contributor, the railroads were primarily to blame. Rail barons and their operating efficiencies, financial resources, and political power slowly starved out the steam shipping industry (Hillstrom, 2005).

2.1.3 The Steel Industry

The growing national economy with its new fuel source would parallel the rise of the American steel industry. Iron had been produced in the United States since its colonial days and by the 1870s, a stronger material came along. The first steps were taken in the 1830s when mineral coal replaced charcoal as fuel. This change proved to have good results in Pennsylvania which contained significant coal deposits under both its eastern and western edges (Hillstrom, 2005). Coal

became the new fuel for the future steel industry. After the Civil War, steel production increased as the North's industrial capacity became more apparent. The steel industry transitioned away from "small mills run by skilled craftsmen to larger mills that employed unskilled immigrant labor" (Kimmel, 2005, p. 211). The use of mineral fuels to power blast furnaces allowed quality anthracite along with lower quality coking coals to phase out the dependency on charcoal-producing timber. The rural culture of industry was changing over to the company town that became more concerned with improved efficiency. The yeoman farmer (as envisioned by our founding fathers) had been forever altered in the wake of urban and industrial expansion (Kimmel, 2005). These alterations became readily apparent throughout industrial havens like Pittsburgh, Youngstown, and Gary. Pittsburgh and its surrounding areas, for example, relied on already-developed canal systems that made barge shipping more efficient because of its rivers. The Monongahela River had been transformed into a natural assembly line through the add-ons of industrial waterway accessories such as bridges, locks, and dams. Railroads, mills, furnaces, mines, gravel pits, docks, tipples, pipelines, tanks, cranes, and conveyor belts that dotted the surrounding riverbanks further defined this type of assembly line appearance (Hillstrom, 2005). The steel industry developed a stable economic ethos with inherent regional roots.

After the Civil War, the Bessemer process was introduced and it allowed Pittsburgh to become the "steel capital" of the United States. The surrounding Monongahela River Valley also reaped benefits as it too, was ideally suited for large-scale production. "The region contains significant investment capital, navigable rivers, and extensive rail networks for transportation, and a large number

of skilled and experienced tradesmen in the metallurgical arts” (Hillstrom, 2005, p. 13). However, the most important regional feature was its abundant coal deposits coupled with other raw materials needed for nineteenth-century iron and steel production. The only drawback was a shortage of unskilled labor needed to work the developing furnaces (Hillstrom, 2005). Eventually, labor became readily available as many European immigrants were drawn to the Atlantic region’s escalating steel industry.

American industry has witnessed past successes only to be replaced by fluctuating conditions. For example, new technologies created a great deal of competition on a global scale, resulting in the decline of formerly predominant American industries such as rail, textile, and steel. The U.S. steel industry found success in the late nineteenth century with Andrew Carnegie at the forefront. After learning of the Bessemer process on a trip to Europe, he acquired the capital needed to create his own steel industry empire. He brought cheap and efficient steel production centered to the Northeast that made America the world leader in steel production. “The modern American steel industry was born in 1901, when financier J.P. Morgan, officially unveiled the U.S. Steel Corporation after a series of industry mergers, including the momentous acquisition of Carnegie Steel” (Matuz, 2007, p. 286). The attraction to the steel industry, created by Carnegie, enabled immigrant workers willing to travel, to become part of the American steel industry. By the 1920s, the steel industry was stable and prosperous. Soon afterwards, it declined due to the Great Depression but regained its footing at the start of World War II because U.S. steel manufacturers met the demand for steel production to fuel

war efforts. This turnaround enabled industry to thrive, even after the war had ceased.

Despite the fact that the United States produced more steel than all other steelmaking nations combined, rising competition, operating costs, slow-footed management, and inadequate government policies led to a gradual decline of the industry (Matuz, 2007). In addition, the U.S. government also allowed increased competition to develop in the face of rising Communist fears, placing a heightened emphasis on aiding postwar European allies and other nations struggling to find a new identity. These countries were still recovering from a destroyed infrastructure brought on by war. The increase in aid gave new life to the foreign steel industries of Great Britain, Germany, and Japan, enabling them to use their own resources to rebuild their damaged infrastructure. This served to create an increase in foreign competition amongst steel manufacturers (Hillstrom, 2005). Cold War concerns gave the United States a reason to help out many foreign economies. However, this assistance revealed itself as a double-edged sword as it proved to be a hindrance to U.S.-based industries which found themselves in competition with revitalized foreign industries.

As the demand for steel rose while trade policies slowed foreign imports, U.S. mills were able to push on, reaching historic production levels by 1973. Despite this outward appearance, the industry was fiscally beginning to show stagnation. Within a few short years, the steel industry fell into disarray in the face of “declining costs for shipping steel internationally, lower prices for foreign produced steel, and a recession that spread among virtually all corporate sectors which quickly diminished the demand for U.S.-made steel products” (Matuz, 2007,

p. 288). Between 1974 and 1980, approximately 15% of the union workforce was cut. The one-time American steel empire and the places it inhabited were struggling to maintain an existence. The industrial states (primarily those of the Northeast and Midwest), formerly dependent on steel production were experiencing plant closures and financial loss. The coal mining industry found a purpose beyond steel production by holding a crucial energy role in meeting the nation's electricity demands. Other industries and locations dependent on steel, however, were not as lucky. Steel cities such as Pittsburgh and Detroit were hard hit along with surrounding smaller cities and towns that comprised the former manufacturing belt. An economic resurgence in the 1990s did little to defeat downsizing trends. Between 1998 and 2002, "thirty-three American steel companies filed for bankruptcy protection, including LTV, the nation's third-largest producer of steel" (Matuz, 2007, p. 288). U.S. Steel Corporation, once one of the world's most powerful enterprises, had a \$218 million loss in 2001. The loss of industrial jobs caused an overall regional decline resulting in economic turmoil. Manufacturing industries needing only large pools of unskilled labor were being quickly replaced by knowledge-driven career fields requiring specialized training and skills which most Rust Belt workers lacked. This new need coupled with increased outsourcing, played a key role in creating the Rust Belt's present conditions (Matuz, 2007). A variety of other factors influenced the fall of American industrial giants including the development of new technologies, an aging workforce, and increasing globalization. The result is a current transitional period with no past precedent from which to draw information.

The collapse of the American steel industry is one of the largest failures of modern times. While technology was advancing, leaders of the steel industry were

unable to take the industry off of its downward path. The momentous consequences of industrial failure were revealed in the form of plant shutdowns, dislocated workers, and shattered communities. From 1974 to 1986, 337,522 steel jobs were lost. Industry leaders failed to recognize the threat of foreign competition and the defeating shift of acquiring materials from outside sources. The largest failure was the inability of both people and industry to unite in adapting to changing economic conditions (Hoerr, 1988). The U.S. Steel industry had finally cracked under its own weight, taking with it many of the people and places that it once helped prosper.

2.2 Origins of the Rust Belt Term

North America consists of imaginary landscapes and the persistent usage of a title plays a factor in the creation of monikers. Use of the term “Rust Belt” as we know it originated in the 1980s when manufacturing industries had already declined. The American “Dust Bowl” is another example of a regional title, which held its association with the American Great Plains until government intervention and sustainable farming reduced the title to a historical footnote. These regional titles are mental constructs with far-reaching and ambiguous limits (High, 2003). High (2003) believes the apex of projecting the image of heavy industry onto a region came with the coining of the term ‘The Foundry’ in 1981, as part of editor Joel Garreau’s *The Nine Nations of North America* [See Figure 2]. Similarly, the title of “Sunbelt” is still another imaginary term created to define an ascending region, as the Rust Belt declined [See Figure 3]. The Rust Belt was referred to as the Rust

Bowl during the 1980s; but by the end of 1984, this title had been replaced by the current one.

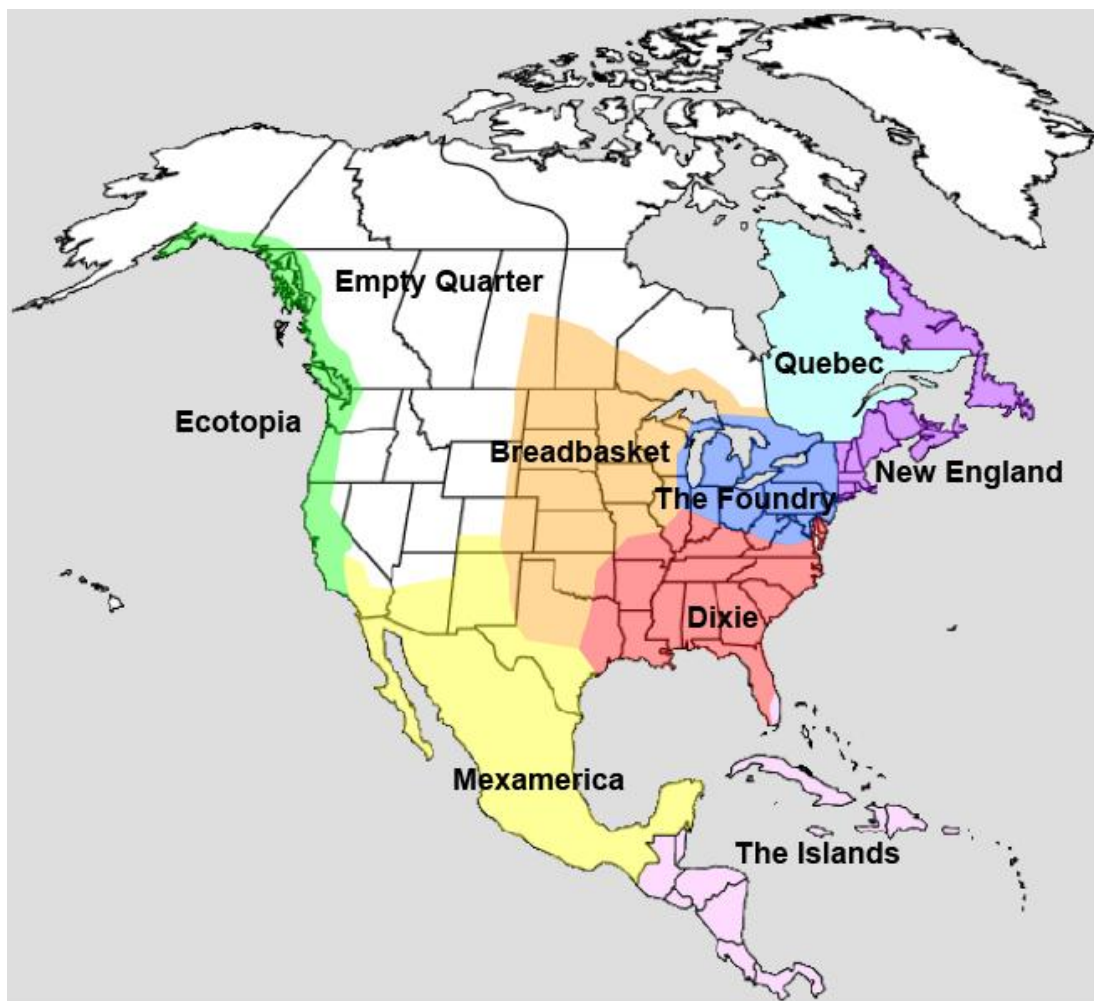


Figure 2. Regional Monikers in North America
Based on Joel Garreau's, *The Nine Nations of North America* (1981)

Other regional symbols changed just as those of heavy industry had. High states that, “soon-to-be empty spaces were once vibrant places where an intricate web of relationships had bound factory and home together” (High, 2003, p. 44). The metaphor compares the often thought of as “de-humanizing factory floor” to home

and family. “Iron and steel towns were so frequently compared to hell that it is hard to imagine how workers in these ‘satanic mills’ could equate factory with home, and coworkers with family” (High, 2003, p. 44). The image of the factory smokestack also developed a dual visionary role, first as a representation of prosperity, and later to one of pollution. It was common practice for many family members to work together in the same mill or factory. This pattern persisted from small factories to large steel mills as they often employed many descendants of former workers. Industrial developments allowed family and friends of similar backgrounds residing in the same location to work together. After these factories and mills closed, the workers were displaced. People once esteemed as the center of society no longer held their rank. Notions of class, gender, and race which existed as social boundaries were gone (High, 2003). Despite these derogatory associations, mill work remained as a rooted way of life in both small towns and larger cities. Because of this, moving forward proved to be a taxing process for those affected by the decline of industry.

Region and regionalism need not be fixed realities, but rather viewed as a type of mindset. The same economic criteria that created “the industrial heartland eventually stigmatized the area with Rust Bowl and Rust Belt labels” (High, 2003, p. 40). Today, the Rust Belt is a symbolic moniker of regional decline. The term Dust Bowl once stood for the failed southwestern rural societies of the 1930s and represented a similar failure of industrial societies (High, 2003) [See Figure 3]. The changes to society in the Rust Belt would be the lasting impact of the industrial shift.

In the end, the most notable change created in U.S. by the industrial development of the eighteenth and nineteenth centuries would not be the

movement from isolated farms to the bustling urban manufacturing centers, but rather the replacement of unskilled factory workers by skilled craftspeople in the vast production of goods. It would not even be the unification of a sprawling nation by communication networks comprised of rail and road where new vehicles traveled at undreamed speeds. The most enduring change would be in the way citizens would view themselves, their society, and their work (Gianoulis, 2007, p. 214).

This enduring perception would maintain a presence even after the industries that shaped the region had vanished. The view of self, work, and society was a lasting impression that had for better or worse, created an enduring and specific industrial heritage.

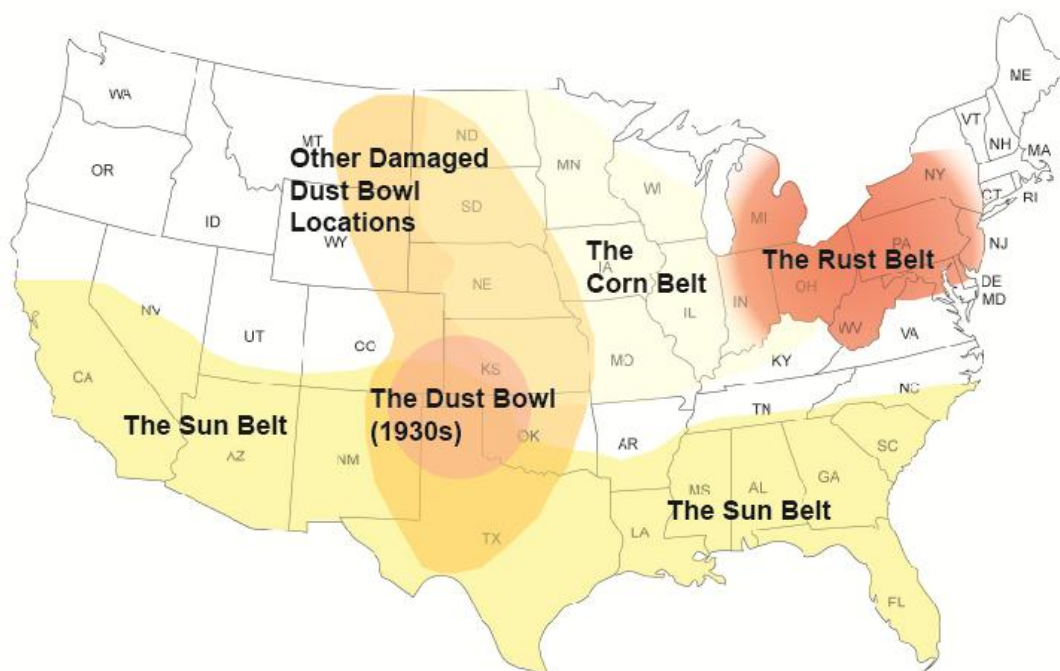


Figure 3. The Rust Belt and other U.S. Regions

2.3 The Value of Industrial Heritage

Industrial culture is often difficult to see as heritage, since heritage most often is thought of as pertaining to pre-industrial history. Even locations holding evidence of industry and deemed to be of value, have a tendency to focus on typology of other ideas of categorization that circumscribe a character such as monumental, sublime, old, rare, or technologically significant (Alfrey & Putnam, 1992). Industrial heritage on the other hand, involves the utilization of resources. Such resources are the remnants of past activity that must be managed in accordance to their potential usage. The range of prospective industrial resources is broad, possibly covering entire civilizations; but an industrial culture must be at the center. Industrial heritage is an often perplexing concept that has transformed and challenged past landscapes, habits, and values. “Most of what is today protected or celebrated as heritage has been chosen within industrial societies as pre-industrial or non-industrial meaning older, more rare, more beautiful, more traditional, more natural, and more spiritual” (Alfrey & Putnam, 1992, p. 2). Due to this categorization, industrial culture carries with it its own archetypes and stereotypes that often get in the way of its true character. Such character is seen in certain industries that span a specific time period creating histories of today as well as the recent past (Alfrey & Putnam, 1992). The challenge in determining what constitutes evidence of industrial heritage and the criteria as to what this evidence represents (along with any unseen or missing representations) becomes crucial.

While the narrative of industrial heritage as a resource in society is extensive and significant, it is also fragmentary. Alfrey and Putnam (1992) offer an approach in light of the fragmentation that focuses more on: “systematic inventory and

comparative evaluation;” “collection and preservation; and new synoptic interpretations of industrial culture to balance particular projects and target research and conservation priorities” (Alfrey & Putnam, 1992, p. 40). Realizing the potential value of industrial heritage requires innovative approaches to conservation and interpretation. Heritage as a resource has expanded to cover a variety of elements such as artifacts, entire landscapes, and cultural character. Strategies that highlight heritage dealing with education, entertainment, conservation, regeneration, culture, and commerce no longer need to be in opposition. Investing in heritage has moved from marginal importance to the forefront of new developments. In such endeavors, a link is created between cultural industry, tourism, economic regeneration, and the value of industrial heritage (Alfrey & Putnam, 1992). In order to overcome possible setbacks, the management of heritage must balance its own resources and not lose sight of its intended cultural purpose.

Heritage and industrial heritage hold a dynamic quality which places the validation of “industrial heritage” in constant fluctuation. Potential resources can be augmented or diminished with time. This also alters what can be done with the heritage resources. Heritage resources maintain significance as part of a representation that creates order primarily from the work it does. However, the parameters of the work could change over time making “the principles which constitute a heritage to be redefined or broken up, and the meaning of the resource changes or is lost” (Alfrey & Putnam, 1992, p. 43). This makes the map of heritage culture a complex one. Therefore, it is not realistic to judge what should be a heritage resource from just one point: “This means that much of the recognized industrial heritage resources, as well as the potential ones, is a kind of scrapheap;

the reasons why it was assembled are often as important or more important a reason than the artifacts themselves” (Alfrey & Putnam, 1992, p. 53). This leads to a variety of motives of interest in industrial heritage including pride, promotion of the cultural aspect, achievement celebration, innovation, or the attempt to compensate for loss. Such diversity in motives has allowed the relevance of heritage culture to expand further broadening the heritage map and determining what constitutes heritage. This can range from the everyday to the exceptional, the makers and the made, the representation and use, and the contemporary and long-established. People, along with their associations, contexts, and relations come into focus (Alfrey & Putnam, 1992). There is certain richness in interrelated heritages that tell “a plurality of stories” that “may show hidden relations or forgotten ones” (Alfrey & Putnam, 1992, p. 54). This process creates a condensed cultural experience.

Alfrey and Putnam (1992), while primarily concerned with detailing management strategies of industrial heritage endeavors also discuss interpretation as the process of constructing and testing understandings. Interpretation is not only based upon a thorough understanding of heritage resources, it is also contingent on interpretive connections, ramifications, and context of its making and use. Interpretation operates on a variety of focal planes while holding a certain selective focus. An interpretive program will enhance the understanding of an industrial landscape while advocating its care will appear in contexts such as tourism or the fostering of a sense of place. Industrial landscapes are often unappreciated or misunderstood; proper interpretation can help to curb this. Interpretation strategies can raise awareness of what industrial heritage can be while providing a better understanding of a specific landscape in relation to industrial heritage. Industrial

histories can remain invisible without insight into the people, products, and uses that shape the location. Interpretation can compensate for what is no longer visible or present. Landscapes themselves are generally thought of as continuous geographic entities. However, industrial landscapes cannot be fully understood from a view or from a map since they often pay little respect to established boundaries or serve to create new ones (Alfrey and Putnam, 1992).

2.4 Formation of a Heritage Landscape

The definition of a landscape can be difficult to address. The process of preservation is geared towards artifacts and monuments, but does not fit with the concept of the landscape. Fairclough (2006) advocates a fluid, open meaning when defining the idea of landscape. If definitions are necessary, then landscapes should be associated with perception and be inclusive of individual perception. The idea of landscape goes beyond just material elements, and can encompass how an environment is viewed: "It is an overarching idea: a cultural, mental, emotional, or intellectual concept which even if constructed from material objects in the environment nevertheless resides in perception" (Fairclough, 2006, p. 57). While landscape and environment share some similarities, they are different. Both are ever-present and will only respond to a strategy that recognizes their inherent dynamism. Environment is a physical thing with measurable characteristics, while the landscape is more personal, existing in memory and perception. From the perspective of cultural heritage, environment and landscape have differences; what works for one, may not necessarily work for the other.

Heritage is a resource that contributes to the wider contexts of local landscape, sense of place, and character. The proclamation that an area has some type of value is not enough. "Characterization" as covered by Fairclough (2006) has a role in determining value. Characterization focuses on understanding the whole of a particular area as opposed to only detailed knowledge of some individual parts. Site data needs to have a wider context. Characterization proposes that the seemingly ordinary has the potential to contribute to local character in the same way as the iconic. This is also a way to bring cultural heritage to the forefront of social decision-making. Landscape should be seen as "the interface between people and place and as an ever-changing perception" (Fairclough, 2006, p. 61). Perception, like the environment, is dynamic. Change is gradually accepted through familiarity or by some type of accrued significance. In terms of fabric in the environment sense, the landscape is finite, fragile, and irreplaceable; in terms of perception, it is infinite, robust, and always replaceable (Fairclough, 2006). Landscape character is assimilated with time and results in increasingly newer perceptions.

The landscape is a significantly different archaeological resource; it is not a thing, but rather an ever-changing idea. "Today's landscape is simply a snapshot taken on a long journey whose start cannot be remembered and whose end is not in sight" (Fairclough, 2006, p. 63). Therefore, landscape operates as a resource in knowing the past while connecting to the present in collaboration with an everyday way of life. There is an importance to being able to read the past within the present and future. When talking about landscape, the focus is not always just the preservation of local fabric, but also ensuring the legibility of the past. Landscape can create identity and give rise to the distinctiveness of a particular location since it

has no physical boundaries. From the archaeological perspective, landscape for Fairclough is about spatial patterns. These patterns appear through the relationship between sites, the search for artifacts, and land usage over time. It is a means of storytelling about past cultural identities that define the local context of a place. Landscape is also a means of framing an archaeological dimension associated with cultural and social components. These spatial patterns of landscape make it relatable to various fields ranging from the ecological to the economic (Fairclough, 2006). The spatial pattern of economics is what mostly affected the development of the Rust Belt.

Landscape is subject to time and is enabled by its passage. Fairclough sees time in the stratified environment “as a sequence of partly surviving landscape episodes or layers, or as a succession of humanly-led processes that are revealed by their long-term effects and remains” (Fairclough, 2006, p. 67). Time can also be seen from a patina of pre-cultural and/or natural topography. Time depth through layers shows the history of human intervention. The legacy of time is integral to a landscape since it serves as a tool in deciphering human history. Fairclough points out that seemingly timeless landscapes receive the most attention; but these are also the ones that have not seen much recent change. More recent layers are often disliked because they have covered up what came first and can be relatively young by comparison. However landscapes, like their opinions, change with time allowing stances to soften along with an acceptance into the perceived landscape. Time is an element of landscape that has a noted ability to affect both perception as well as the environment (Fairclough, 2006).

Past changes make up a big part of the landscape idea. “Landscape management is about protecting the results of change” (Fairclough, 2006, p. 68). It is this past change that played a role in influencing an individual’s mental landscape while shedding light on future change. Fairclough’s main distinguishing feature of a landscape that makes it different from the rest is the path of change that it has traveled. A past road is a long sequence of events where not every link survives. These visible and invisible pieces are a part of local distinctiveness, adding to the fact that no two places are the same nor were ever entirely identical. Patterns are observed with some lasting longer than others. Some show rapid change, while others display longer periods of continuity. Whatever the pattern may be, the essence of a place is linked to a specific local path through time. All past change becomes part of the landscape, whether it was desirable at the time or not. A development should fit a context in a way that retains a legible past, thereby creating a strong psychological and physical connection. The character of landscape is indestructible, but still subject to change as change is a building block of such character (Fairclough, 2006). These changes all become part of an area narrative that is not limited to the physical local fabric.

SPACE + TIME = CHANGE

Figure 4. The Process of Space and Time Induced Change

Historical processes “operate in space and across time, and are the drivers of the change which lies at the heart of landscape character” (Fairclough, 2006, p. 69). Process cuts across space, time, and change. Cultural and historic processes

allow the construction of an environment and a landscape. These constructions are the result of change occurring in space over time [See Figure 4]. When the historic processes behind the creation of a landscape stop, that landscape begins to change due to the now-missing previous countermeasures. Processes die out and new ones take over which result in landscape change (Fairclough, 2006). This is the process that has nearly stalled out in the small towns of the Rust Belt.

Fairclough (2006) concludes that new developments should build on the past, but remain forward-looking. Focusing only on landscape preservation of the environment develops a “curator to artifact” relationship. Landscape can be an artifact, but is best served when not treated as such. Traditional methods of monument-based heritage preservation and conservation habitat reconstruction are no longer a suitable guide for the future. Fairclough’s answer is to pass on a mental landscape consisting of more than important physical remains. Such a landscape can be used to learn about the past and create or maintain a sense of place for the future.

Industrial landscapes are the type of heritage landscape that covers the Rust Belt. Such landscape, defined as a geographic entity, shows a history of use and change that make up complex networks. The boundaries of such landscapes are defined by surviving features and patterns of human activity created under the confines of time and space. The interpretation of industrial landscape deals with not only spatial patterns developed at one time, but alterations to these patterns that have occurred over time. Industrial culture consists of activity patterns that can transcend the local landscape. The history of local industry can be shaped by outside forces and events. Interpreting an industrial landscape must go beyond the

established local framework in order for it to be understood. This also allows more emphasis to be placed on the connections between different regions and sites through functional or typological links. Industrial sites exist as parts of a larger more complex network that makes a full understanding of some rather impractical. Complex usage histories and a sequence of change over time affect industrial sites. Sites not in use should be concerned with survival and visibility of purpose. As an interpretive device, conservation alone is not enough. There are many levels to be considered such as makeup of the area, individual buildings, and daily functional use of the area and buildings. Elements of meaning and value cannot be fully explained by conservation alone. This holds true for surviving industrial sites as well as those left in ruins. To fully understand an industrial landscape it is important to go beyond the fact that the sites have been subject to change over time and recognize the change in character from the resulting situation, needs to be the primary focus (Alfrey and Putnam, 1992).

Today's industrial landscapes are complex and have a lot at stake. The relationship and boundaries that exist between heritage, present living, and future prospects must be found so that industrial heritage can get beyond the safety of the museum or just simply being left to the landscape. Perhaps the worst outcome is for industrial heritage to be diluted down to a mere vernacular-type representation. Preservation of the built environment is geared more toward luring new commercial use; this creates a newly diffused heritage ready for distribution. When determining the value of industrial heritage, it should be presented as a common historical inheritance. Industrial heritage has a role in revitalization, but its regenerative capabilities can be contradictory. A common departure point of revitalization

strategies is a pride of place that appreciates the qualities of local heritage. On the other hand, qualities of the local environment can be separated out from their original historical context and used as a tool to draw in the tourist or shopper. Both approaches show the contradiction of revitalization based on industrial heritage. For example, a formerly failed industry may not be so fondly remembered. In this case the celebration of industrial ruins is not always a well-conceived outcome. Former industrial workers may resent the celebration of industrial change since it was beyond their control, and may harbor negative emotions about memorializing a contentious past (Alfrey and Putnam, 1992).

2.5 A New Industrial Context

The redefined context that emerged in the Rust Belt placed increased strain on smaller towns. The departure of a single, but vast industry ruined towns that lacked a diversified economy. The departure of heavy industry dealt swift and heavy blows to cities such as Gary, Indiana and Youngstown, Ohio, since both places existed because of the steel industry. Pittsburgh, however, was much more adept at redefining itself as it retained the size and resources needed for survival. Small towns lack size and resources which limits their capacity to change with the times (Connolly, 2010). This makes attempts to revitalize a small Rust Belt town a difficult task. Some of these towns still support small nodes of industrial production, but landing a new outside operator is a tall order with increasing levels of competition to attract new industries. Rust Belt towns mostly lack the infrastructure and resources needed to attract high-tech or knowledge-driven fields. The small cities in question will need a great deal of economic retooling in combination with

extensive changes to their “built environment, cultural character, political economy, and demographic mix” (Connolly, 2010, p. 2). Radical changes like these often stand in opposition to the historical context that has come to define a former manufacturing-dependent town. Rust Belt towns hold their own distinctive identifiable urban form, but have been shown to lack the tools required to effectively cope with deindustrialization. Numerous strategies dictate the revival process for small towns. Connolly summarizes these renewal strategies through communities first assessing their assets, institutions, geographic advantages, unique amenities, and clusters of business. These terms were not billed as categories, but rather useful in determining what to build upon. There is also importance placed on rebuilding new infrastructure, rehabilitating existing infrastructure, and improving neighborhoods, cultural amenities, quality of life, and educational opportunities. Often the community's image of itself and outsiders will require an overhaul. Still, small towns offer a slower pace and a sense of community in a compact setting not possible in larger cities (Connolly, 2010). These smaller settings have distinctive and attractive qualities to offer, especially if they can return to some form of functionality.

There is a broader meaning in the mill closings of deindustrialization when viewed from an anthropologist perspective. As High, sees it “anthropologists have long been immersed in the vanishing ways of life of those people caught on the wrong side of history” (High, 2003, p. 9). Rust Belt workers lost a social structure and a way of life they depended on. The new measuring stick became education credentials as opposed to the seniority and physical prowess offered by longtime factory laborers. This is why the use of the term Rust Belt goes beyond the

description of the region. The term describes a specific type of society that exists primarily in the states of the Northeast and Midwest. Discussions of the region bring to mind the crumbling infrastructure of large, once prosperous cities (Connolly, 2010). However, smaller locations hold a similar affliction while lacking the resources of their larger counterparts. “Larger cities with more resources, more diversified economies, and more political clout, have in some instances coped with the economic transformation of the late 20th century reasonably well” (Connolly, 2010, p. 1). Cities such as Milwaukee or Pittsburgh have managed their transitions effectively and seen substantial progress. Manufacturing centers of smaller nonmetropolitan communities tend to be dominated by one singular industry. When such a singular industry departs, the community is left with very few options. These smaller centers were often “invented as seats of industry” (Connolly, 2010, p. 2), but when their surrounding way of life and context changed, they failed to make the necessary adaptations to remain viable. Small towns still struggle to define their own identities, which can be made up by a combination of ideas and labels placed on them by the national media, not to mention their own local experiences (Connolly, 2010). Identities develop in regions over time and can create popular defining titles that eventually become intrinsically associated with the local vernacular and a reality for the people who inhabit the area. These titles, especially in the Rust Belt and its small towns, represent a past ideology that has come to define a culture such as industrial heritage.

The fall of industry was not a part of a larger cycle of highs and lows, but rather, a rapid shift to a new direction. American manufacturing did not completely disappear, but new innovations reduced the amount of labor required. Increasing

labor cost made it beneficial for business owners to relocate to other parts of the country or leave it completely. Domestic industries were also undercut by globalization and a rise in foreign competition that forced aging mills and industrial plants out of business. This transformation also created a rise in knowledge and service industries. “Part Wal-Mart and part Google, it relied increasingly on the importation of consumer goods in the exportation of ideas and computer-based technology” (Connolly, 2010, p. 4). Places that were home to a large number of educated workers reaped the benefits of this new condition, while the Rust Belt remained ill-equipped to confront change. The capital-intensive manufacturing business that had come to define the area did not translate to such a different social setting. Former Rust Belt workers lacked the skills required to be of use to newer developing industries, which also made it difficult to lure in firms offering that type of work. Young skilled workers that were needed could not be found easily in the Rust Belt largely because they left to pursue an education and never came back (Connolly, 2010). Some cities and towns possessed specific geographic features that made them appealing and allowed them to maintain status, but these were not the places which define the Rust Belt.

The Rust Belt developed as an industrial region and any revitalization attempts will have to acknowledge this fact. The process will involve more than the redefinition of economic roles or reconstruction of a built environment; a cultural reinvention is needed as well. Smaller city residents will have to imagine themselves as members of a different type of community. The challenge is to remake the Rust Belt into the something new. Rust Belt communities have attempted to position themselves as tourist destinations, suburbs of larger cities, or

a lure for knowledge driven businesses. These transformations can be better served by lowering taxes with a modest cost of living which Rust Belt towns already possess. This transformation also includes “becoming a physically attractive place that offers the kinds of educational, recreational, and leisure opportunities that young well educated workers seek” (Connolly, 2010, p. 11). The original purpose of the Rust Belt was to serve solely as a home to factories and their workers, making such amenities a rare possession. “Convincing a blue-collar town to invest in parks, preserve historic buildings, revive its downtown as an upscale shopping district, foster cultural diversity, or fund new school construction is difficult in the best of times” (Connolly, 2010, p. 11). This process gets even tougher when it is necessary to get locals on board when such a proposition appears to accommodate outsiders rather than cater to the needs of the average resident. Communities must act upon their advantages and be willing to endorse a new vision. The break from the past creates economic, political, and cultural obstacles that stand in the way of transition. Rust Belt communities have long been accustomed to a specific place within the world and have come to accept this role coupled with the social, civic, and cultural order it provided (Connolly, 2010). Such a cultural order can no longer be sustained and attempts to create a new or different place is a complex challenge.

Chapter THREE

Locating an Industrial Heritage

3.1 Effects of Industrial Collapse

The fall of the U.S. steel industry had a huge effect on a large number of areas. In particular, these effects can be illustrated for a large majority of the region through the city of Pittsburgh and the surrounding Mon Valley communities. This region is home to many notable mill towns such as Homestead, Braddock, Duquesne, McKeesport, Clairton, and Monessen. In the 1940s, dozens of steel plants stretched 48 miles along the Monongahela River banks from Pittsburgh. “Now those giant sprawling places of enormous energy have become rusting hulks” (Hoerr, 1988, p. 5). The buildings that once housed the steel industry promoted themselves as modern mills to the outside world, yet showed their obsolescence within their own communities. The economics of the world steel trade made it necessary for U.S. corporations to shut down plants and cut workforces. With dwindling jobs and populations, the area's young had no reason to remain in the Valley. In contrast however, the middle-aged were mostly unwilling or unable to start over from the only way of life they had ever known. This Rust Belt region of Pennsylvania “lost industries, people, pride, and their tax base” (Hoerr, 1988, p. 13). The effects extended beyond the mill towns into the surrounding suburbs and river communities.

Manufacturing in the Mon Valley died out just as quickly as it came in. The devastation occurred over a little more than one generation. The steel industry peaked during the World War II, began to decline, and finally hit rock bottom in the 1980s: "Such widespread carnage may be unparalleled in U.S. industrial history, especially within such a short period of time" (Hoerr, 1988, p. 570). An entire industrial civilization was left in ruins. The closings pushed the region into new challenges as it permanently altered economic and social character in ways not seen since industrialization. The unemployment rate of the Pittsburgh metropolitan area topped out at 15.9% in 1983 with 168,500 unemployed. The rate declined by 1986 but remained above 20% for most of the small mill towns (Hoerr, 1988).

Mon Valley mill towns were left with many issues not easily addressed. The Mon Valley itself consists of these river towns including the 140-square mile area around the Monongahela River with a variety of municipal governments. Some of these towns appear to have no real means of recovery except for consolidation. Wide geographic gaps make such a proposition incredibly difficult. According to Douglas Booth (as cited in Hoerr, 1988) large dominating industries can stifle growth. A new industry is entrepreneurial with constant efforts to increase profits and efficiency. As the industry ages, managers take over and replace entrepreneurs. These managers usually focus on large-scale production of existing products rather than inventing new ones. Booth believes the goal of mature industries is stability as opposed to innovation and that this stagnant business approach is what stifles newer industries. The presence of large antiquated industries limits the capital and resources available to newer developing ones. In the Mon Valley, the steel industry dominated riverside property, exhausted most of

the area resources, and generated large amounts of pollution. This monopoly created a reluctance to bring new enterprises to such an environment (Hoerr, 1988). Executives made the decision to shift production to new locations or to diversify certain industries. In this case, the corporate private interest took priority over public interest (High, 2003). Those who benefited the most from the move were not the ones who still held a vested interest in the region.

3.2 A Regional Profile

Perception of a place is one of the first things that hold a lasting impression. Our perceptions initially include the physical elements that form space. However, this space changes over time with the potential to express the present as well as remnants of the past. Our perceptions of place create specific regions with their own defining characteristics. These characteristics are shared by the areas that make up the title region. The places within such a region will have existing similarities regarding history, setting, geography, climate, infrastructure, and imagery that make up the overall look and feel of a place. Such a place-specific vision can be perceived in many different parts of the world, but this study will focus on the region defined as the Rust Belt in specific towns within the Mon Valley. This region has been subjected to large amounts of change over time that has shaped local space. In the Rust Belt, these processes have created an industrial heritage that is a defining characteristic of the region and its towns.

The United States, throughout its history, has developed distinct regions defined by similar characteristics. These regions have place-specific titles. The

titles, albeit imaginary, refer to the local environment and a perceived common heritage. The Rust Belt moniker covers most of the Northeast and Midwest [See Figure 5]. The title brings to mind images of the regions' abandoned rusting factories, the majority of which have been dormant since the 1980s.

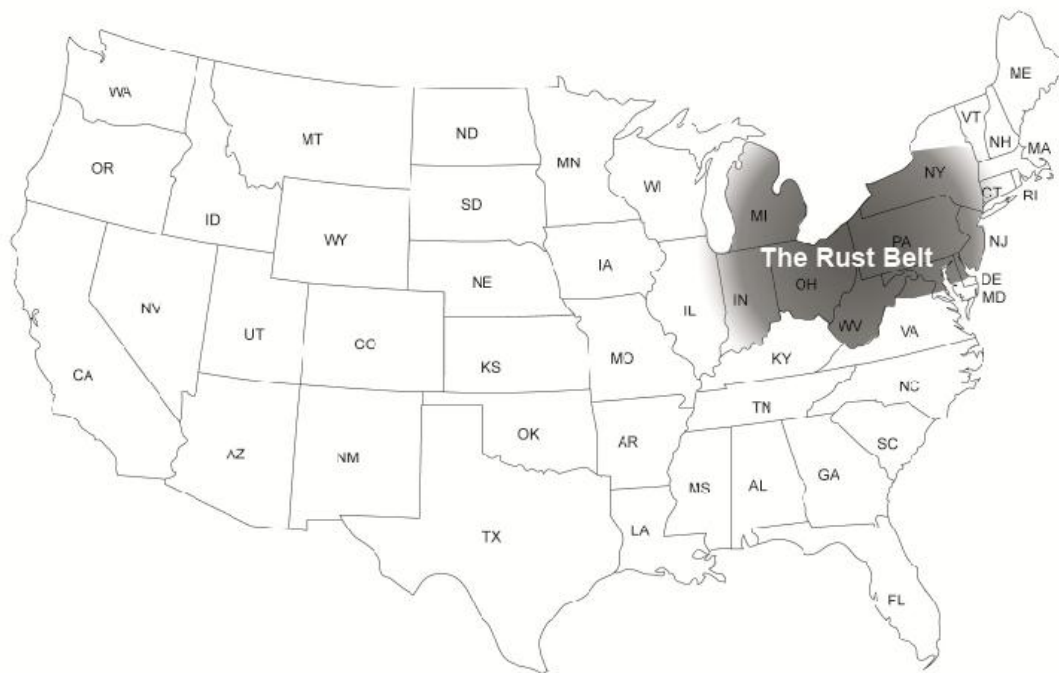


Figure 5. The Rust Belt Region

A major part of the Rust Belt is the city of Pittsburgh which comes to a point at the intersection of the Monongahela, Allegheny, and Ohio Rivers. Small towns and cities along these rivers helped define a location through both individual as well as regional growth and development. What is considered the Rust Belt today is mostly comprised of towns running along these rivers. Along the Monongahela River is the region known as the Mon Valley which is located within the Monongahela River Valley that makes up most of southwestern Pennsylvania and

extends down into neighboring West Virginia. The Monongahela River Valley Basin is also a part of the larger Ohio River Valley Basin. The basin covers most of western Pennsylvania and large parts of Ohio and West Virginia among other states [See Figure 6]. The Monongahela River flows into the Ohio River, which then forms the boundary that separates the states of Ohio and West Virginia.

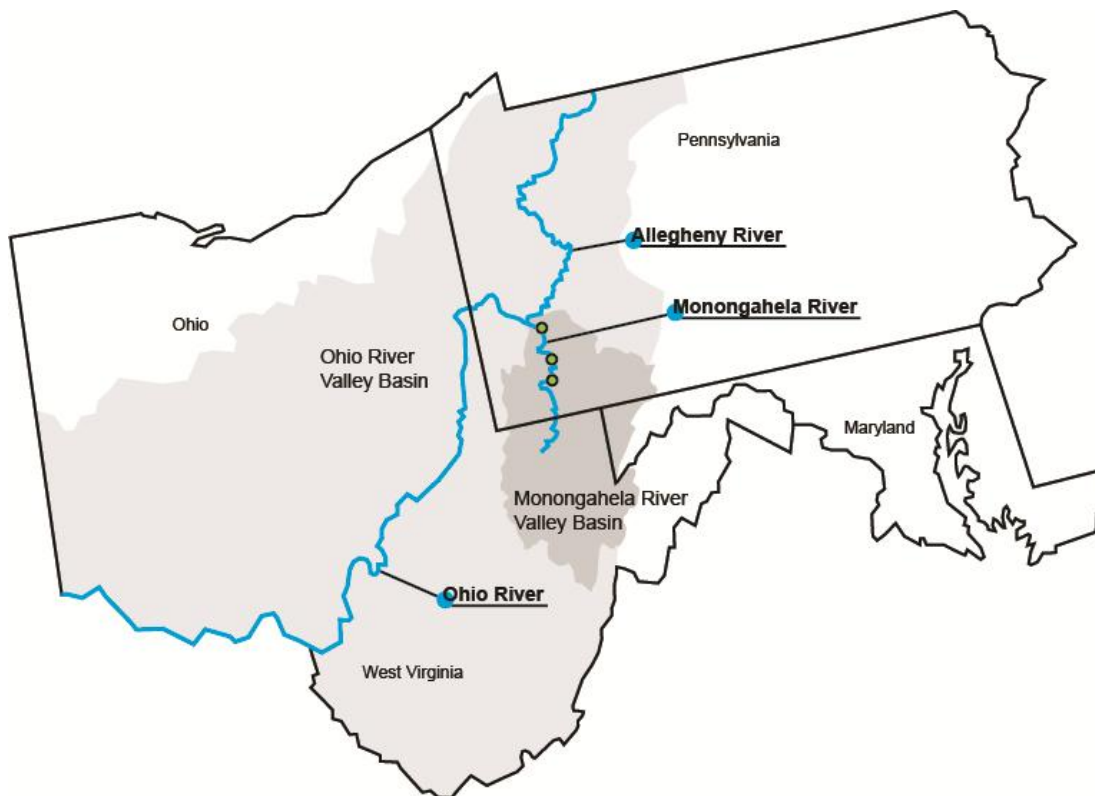


Figure 6. River Valley Map

The three circles are the case study towns of Braddock, Monessen, and Brownsville.

The makeup of the Mon and Ohio Valleys is very similar. Small towns located along both Rivers present once industrial communities with seemingly interchangeable neighborhoods, downtowns, and infrastructures. This is not to say the look and feel of these places is always exactly identical, because no two towns ever are. However, their defining character is consistent with that of the larger Rust

Belt region [See Figure 7]. These similarities can be seen in small towns along the Monongahela River such as Brownsville and Braddock. These common traits are also along the Ohio River portion of the West Virginia panhandle in towns such as Follansbee and Moundsville. Just across from the Ohio River are towns parallel in composition such as Bellaire and Mingo Junction. All of these towns are comparatively small in population ranging from two thousand to ten thousand people. Each area remains visibly marked by an industrial past in the coal and steel industries that made use of nearby river locations and natural resources. Similar beginnings, histories, and settings cultivated a physical environment and perceived landscape which developed in the Rust Belt.

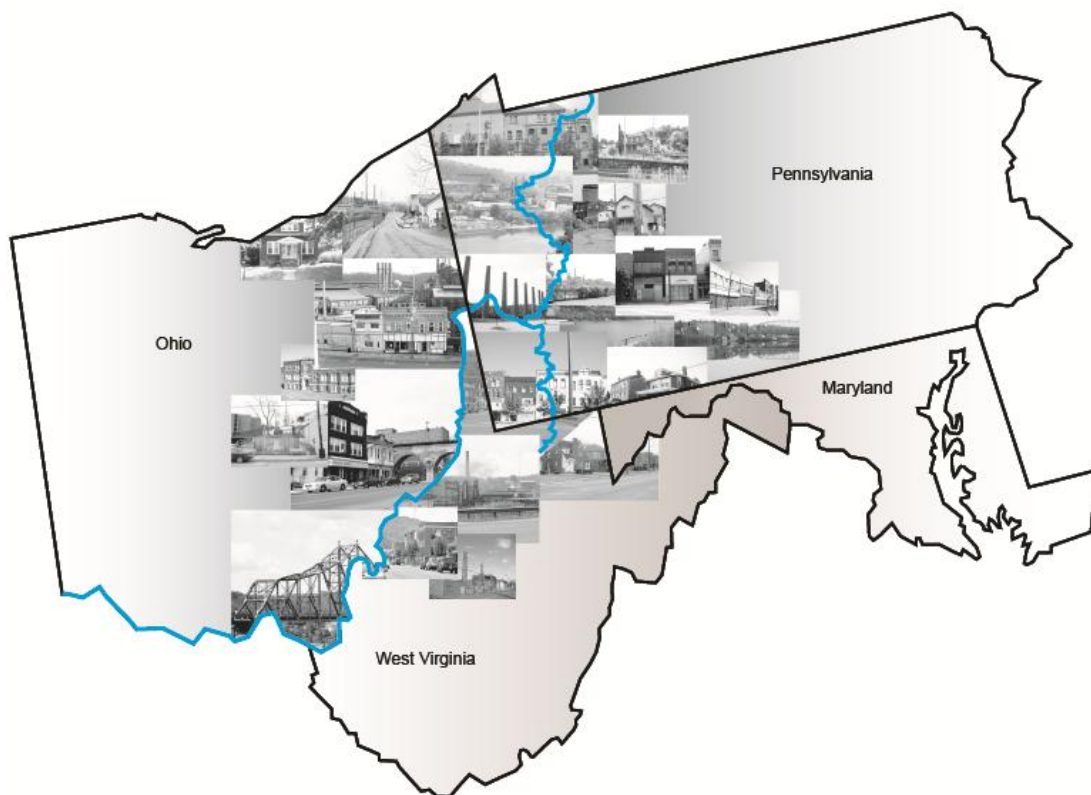


Figure 7. River Valley Collage of Similar Characteristics

The southwestern portion of Pennsylvania is home to the Mon Valley [See Figure 8]. Pennsylvania was a heavily-mined state and large steel producer in the Northeast. The Mon Valley area needs to be considered when discussing industrial heritage and Pennsylvania industry. The Monongahela River which flows north towards Pittsburgh runs along many small towns with the same distinct character, histories, and settings as shown in other Rust Belt examples. The Mon Valley encompasses all of Fayette County and portions of Westmoreland, Allegheny, Washington, Greene, and Somerset counties. The town of Braddock in Allegheny County is closest to Pittsburgh. Below Braddock, on the western edge of Westmoreland County, is the city of Monessen. Monessen is a city in name only with its population, size, and physical appearance resembling the smaller towns residing along the Monongahela River. Further south is the town of Brownsville in Fayette County. These and neighboring towns alongside the Monongahela River represent what exemplifies industrial heritage and the need for small-town Rust Belt revitalization. In choosing which towns to select from the Mon Valley area, the current status of various towns within the Valley were considered in determining revitalization. The three aforementioned towns which were once industrial giants have since deteriorated; however, the remaining features of these towns represent their industrial heritage. To improve these small towns and their perceived value, there needs to be a concerted effort for revitalization.



Figure 8. Mon Valley Map showing the three chosen case study towns

These towns take on a similar look and feel which is only apparent in the Rust Belt. A sampling of images from these towns which highlight their residential areas, downtown businesses, and industrial remains, reveal a common resemblance. While these towns were never identical in the environmental sense, their physical appearances remain similar in that a residence and/or remnant of one location for example could be easily mistaken for that of another [See Figure 9]. However, these towns have been subjected to most of the same changes that have simultaneously created and left behind a visible, but sometimes invisible industrial heritage. Though not identical in the literal sense, the investment in industry and its resulting heritage landscape is the same.



Figure 9. Montage of Monongahela River Towns Showing Similar Physical Appearance

The following set of images shows the river locations of Braddock, Monessen, and Brownsville and their sizes in comparison to neighboring towns [See Figure 10; Table 2]. Displaying images of these particular towns serves to highlight the similarities in landscape and environment that create the look and feel of chosen towns in comparison [See Figures 11-13]. Images shown within the town specific areas present residences, industrial remains, infrastructure, businesses, landmarks and other elements of industrial heritage that vary only slightly by location. The

collages illustrate similar elements that exist in Rust Belt towns such as industrial remnants and residential neighborhoods.



Figure 10. Monongahela River Towns

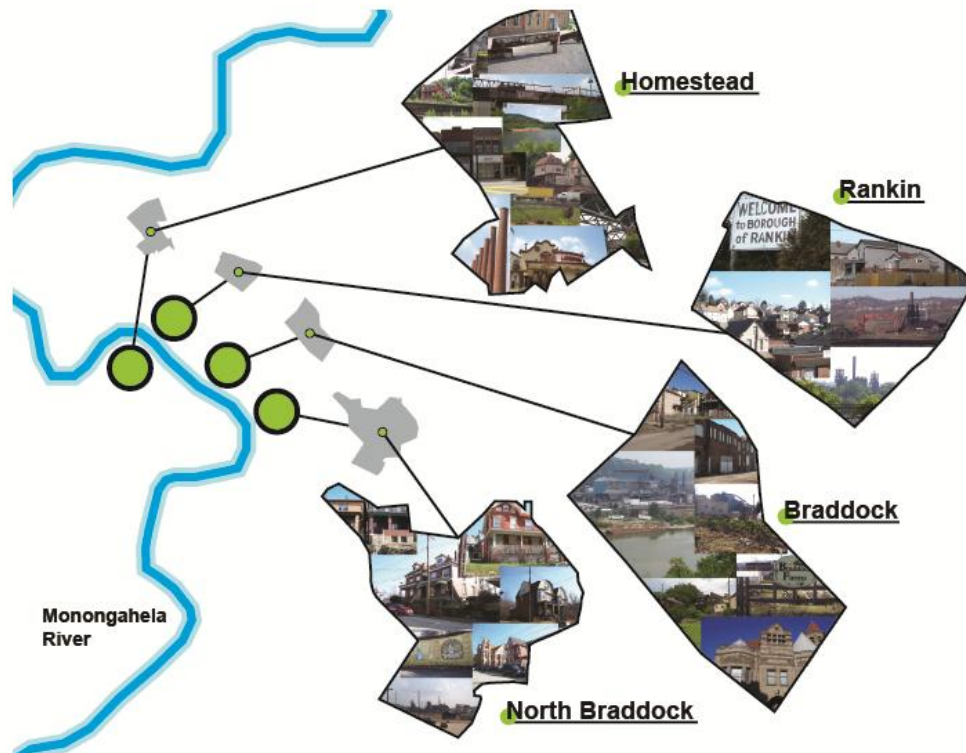


Figure 11. Braddock Area Industrial Heritage Collage

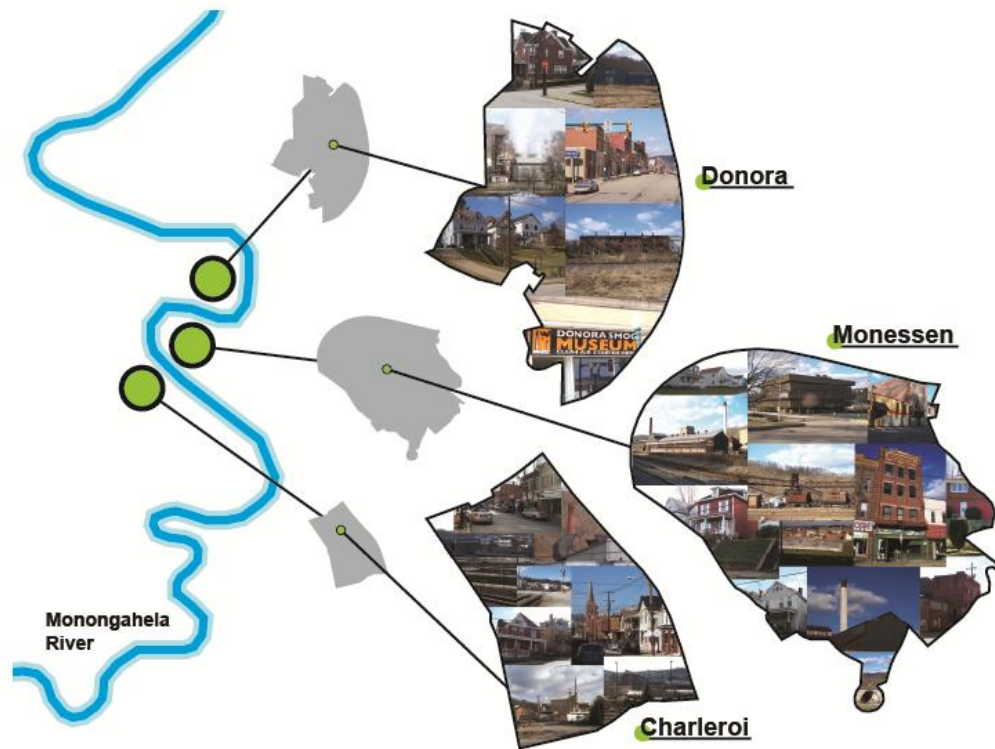


Figure 12. Monessen Area Industrial Heritage Collage



Figure 13. Brownsville Area Industrial Heritage Collage

The towns of Brownsville, Braddock, and Monessen stand as a strong representation of the small Rust Belt town in the Mon Valley. All three developed industrially due to their river locations and use of local resources. Like other towns in the Mon Valley, they were an integral part of the Rust Belt's mining and steel industries. Today, these towns hold similarities including: shrinking populations, declining infrastructures, a population range of 2,000 to 10,000 people, and land areas of one-half to three square miles. All of these towns have declined since the collapse of the steel industry and all have experienced subtle differences in aftermath effects. Of the three towns, Monessen has fared the best with Braddock being hurt worst. Community outlooks toward revitalization are, however, different. Brownsville favors a more conservative approach in line with the town's largely historic setting. Braddock's revitalization efforts are more radical, with the town

willing to try a variety of alternatives in order to sustain itself. This leaves Monessen falling somewhere in the middle between these two opposite ends of the spectrum. These three towns are still rooted in a similar linked industrial past. They all share a look and feel in concert with their landscapes and environments which ultimately results in a common industrial heritage. Before examining each town's past and current status, it is imperative to examine why each town was selected to be studied in this research.

Name	County	Class.	Pop.	Peak Pop.	Land Area	Past Industry	Median Household Income
<u>Braddock</u>	Allegheny	Borough	2,159	20,879	0.6 sq mi	Steel	\$21,000
North Braddock	Allegheny	Borough	4,857	15,679	1.6 sq mi	Steel	\$23,000
Rankin	Allegheny	Borough	2,122	7,470	0.5 sq mi	Steel	\$16,000
Homestead	Allegheny	Borough	3,165	20,452	0.6 sq mi	Steel	\$23,000
<u>Monessen</u>	Westmoreland	City	7,720	20,257	2.9 sq mi	Steel/Mfg	\$28,000
Charleroi	Washington	Borough	4,552	11,516	0.9 sq mi	Glass/Mfg	\$26,000
Donora	Washington	Borough	5,253	14,131	2 sq mi	Steel	\$28,000
<u>Brownsville</u>	Fayette	Borough	2,331	8,015	1.1 sq mi	Coal/Mining	\$25,000
West Brownsville	Washington	Borough	992	NA	1.4 sq mi	Coal/Mining	\$40,000
California	Washington	Borough	6,795	NA	11.2 sq mi	Coal/Mining	\$35,000

Table 2. Monongahela River Town Statistics
Source: U.S. Census Bureau and CityData.com

When choosing the towns for this research, many significant assets of each town were considered. Braddock has its own historical significance and its industrial heritage holds two major contributions. The town was home to Andrew Carnegie's first steel mill and the first free public library. Braddock was a flourishing town filled with churches, businesses, schools, theaters, and restaurants. The town became industrially strong in 1873 when Carnegie built the Edgar Thomson Steel Works, which was the first steel industry in the U.S. that used the Bessemer process (Kline, 2011).

Braddock's major contributions included two features; namely, a steel mill and a library. By comparison, Monessen had four key industries of the past which included tin, steel, chain, and fence. Monessen began solely as an economic endeavor that rapidly developed to accommodate a diverse set of nationalities (Vivian, 2002). These economic and cultural features defined Monessen and their importance still resonates.

Brownsville, in terms of industrial heritage contributions to the Mon Valley, once enjoyed a successful steamboat and mining industry. This one-time gateway town drew in pioneers traveling to the Ohio Valley and then south to Kentucky. The first steamboat to travel to New Orleans and back was built in Brownsville. Brownsville's second act came when coal was discovered. Brownsville's coal veins provided the necessary fuel for steel production making the town an important railroad and commercial center (Stinkis, 2006).

Not only do these three towns serve as representative samples of the Rust Belt, they are towns that showcase industrial heritage in the Mon Valley. Their shared industrial heritage and status in the Rust Belt unites these towns. Each

town, despite similarities, maintains diverse characteristics of industrial heritage. These characteristics serve as building blocks, providing distinct focus that can be employed when initiating the revitalization process.

3.3 A Common Story

Opportunity is what attracted the first individuals to the Mon Valley towns of Braddock, Monessen, and Brownsville. Early to more recent histories of these locations tell very similar stories. Since their inception, each town has followed a similar path culminating with a common reliance to the region's steel industries. Native Americans were the first to occupy these areas, followed by trappers and traders. Early military undertakings contributed to establishing outposts and settlers heading west also made use of the towns. The fertile land and water access made for ideal territory. These prime locations abundant in resources were appealing to those interested in turning a profit. As early industries developed, rich coal deposits were discovered that would later fuel growing industries. As new industries and markets emerged, a larger workforce was needed. An influx of European immigrants became the solution, resulting in the establishment of ethnically diverse neighborhoods. The human and industrial capital merged together to make use of resources and infrastructure to create thriving small towns. This period of prosperity would reach its zenith, then leave behind accrued remnants of industrial heritage still present at each of the three sites.

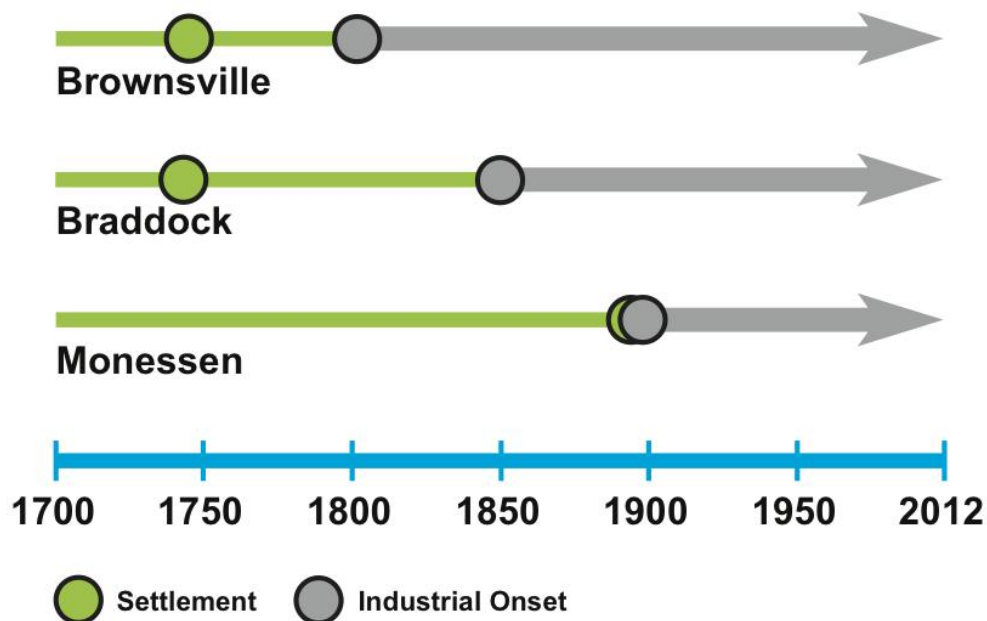


Figure 14. Town History of Settlement and Industrial Onset

3.3.1 Braddock

The town of Braddock, PA, once a prosperous steel town, is now a borough in the eastern suburbs of Pittsburgh located in Allegheny County. The town was named in honor of General Edward Braddock and was the first settlement west of the Allegheny Mountains. General Braddock was a British commander during the French and Indian War. In 1775, as Braddock and his troops were crossing the Monongahela River, he was fatally wounded and his troops badly beaten. This battle, known as the “Battle of the Monongahela,” was the key conflict leading to the French and Indian War. A collection of counties in Western Pennsylvania were developed between 1788 and 1813 and the borough of Braddock was incorporated in 1867 (Grom, 2008). Today, Braddock is nine miles east of Pittsburgh's point and

located along the Monongahela River adjacent to Turtle Creek. Braddock's Field (comprised of 328 acres) is referred to as a historic battlefield where the Battle of Monongahela was fought and considered the town's key site of interest. Braddock's neighboring boroughs evolved soon afterwards: Rankin in 1891 and North Braddock in 1896.

Before the official establishment of Braddock, the earliest known settler of the town, John Frazier, established a permanent cabin in 1753. Within this same year, George Washington and Christopher Gist surveyed the area for its strategic advantages. General Edward Braddock (under whom Washington served) was killed as his troops were routed into battle at the start of the French and Indian War in 1755. After Braddock's defeat, it would take years for the town to be settled. Since the ground of Braddock's defeat was considered ideal farmland (Grom, 2008), it was subdivided and cultivated from the beginning of the nineteenth century on through the Civil War.

In 1791, George Walla bought the land called Braddock's field. The one-time battlefield site would host a rally at the climax of the Whiskey Rebellion in 1794 (Braddock 15104.cc). Only a small number farms were established by the early 1800s. At the turn of the century, a new market emerged attracting a diverse workforce. As industry came to Pittsburgh, new developments spread by way of river and rail. Braddock's location drew the attention of investors. By 1850, the first business developed as a barrel factory. At this same time, the Pennsylvania railroad laid its first track through Braddock. Braddock's future in steelmaking was fully established 11 years later by the construction of the McVay-Walker Foundry. Carnegie-McCandless and Company started operations in 1873 leading to what

would become Braddock's most notable mill, the Edgar Thomson Steel Works. The area's steel industry continued to grow in size and complexity and began occupying a large portion of the town's riverfront property. In the late nineteenth century, a population growth pattern elevated the number of residences and businesses in Braddock. The number of commercial business would eventually rise to over 760 by the mid-1920s and remain at that level into the 1960s (Grom, 2008).

The steel industry in Braddock largely attributed to Carnegie became the defining characteristic of the town. The Edgar Thomson Steel Works was the impetus for the creation of the U.S. Steel Corporation and currently operates 24 hours a day. Today, it employs just 560 people, compared to over 5,000 at its peak (Brown, 2010). The site of the steel mill is also the location of which the cabin of John Frazier's was constructed. Carnegie later started the nation's first Carnegie Library in Braddock which has been in operation since 1889 (Braddock 15104.cc) and is considered a historic landmark. While the steel industry in Braddock, similar to other area towns, felt the effects of the Great Depression, prosperity returned at the onset of World War II. Braddock had become a thriving small town replete with businesses and commercial activity. Even this renewed prosperity, however, would not last as the industry began to show signs of slowing in the 1960s. As people left, the town's local tax base departed with them (Grom, 2008). Following the collapse of the U.S. steel industry, Braddock fell in prominence along with its population falling from a peak of 20,879 people in 1920 to 2,159 as of 2010 (U.S. Census Bureau). The Mon Valley was once a steel capital, but Braddock's Edgar Thomson plant remains as one of the last mills in operation.

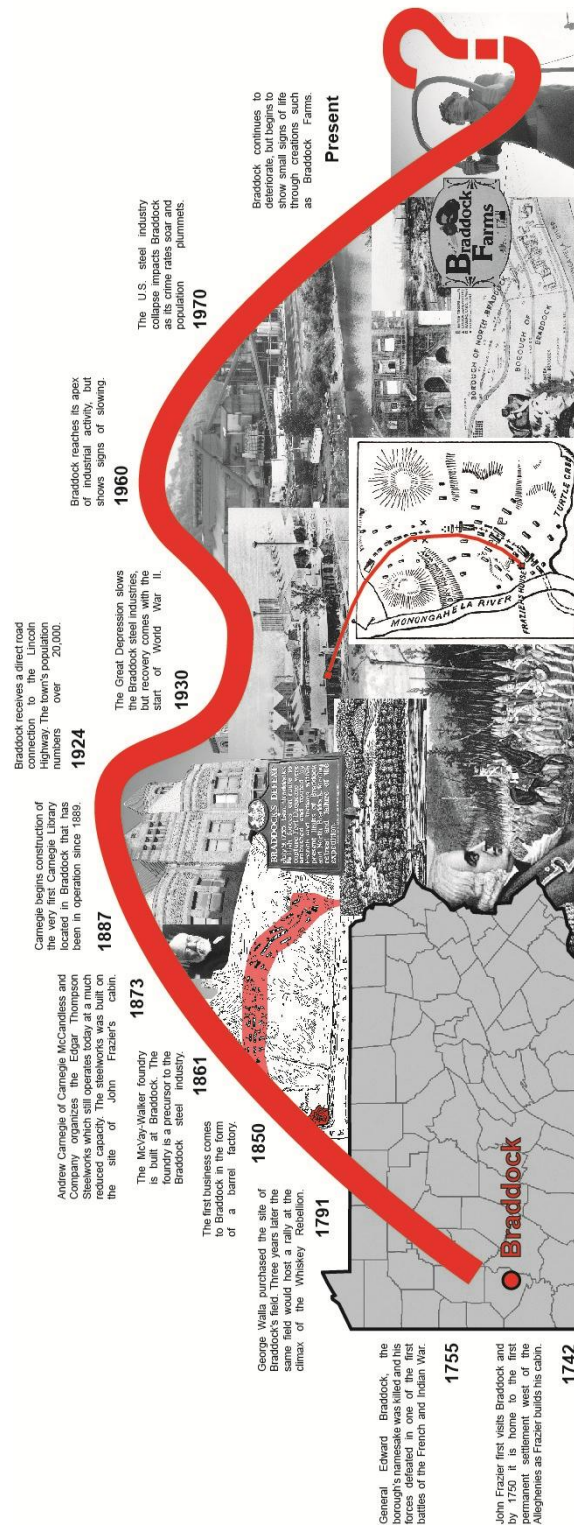


Figure 15. Braddock Timeline
The timeline covers the important events of Braddock's history depicting its highs and lows.

3.3.2 Monessen

The town of Monessen, located along a bend on the Monongahela River in Westmoreland County, was typically ignored as settlers traveled through southwestern Pennsylvania. The flat lands of Monessen were swampy, but had farming potential in its hills. Eventually, farmers and land speculators began to take notice of the area and purchased property. "Monessen was one of a dozen or more towns that were created at the turn-of-the-century by entrepreneurs from Pittsburgh looking for investments" (Vivian, 2002, p. 12). The Pittsburgh Freight Zone was established along with the lifting of a tin tariff. Monessen's strip of land fell on the edge of this new zoning which allowed for the establishment of Monessen mills and the ability to ship their goods at competitive prices. With the lifting of the tin tariff, the community took advantage of the act and established a tin mill. This tin mill became one of the town's four significant industries. The McKinley Tariff Act of 1890 had made tin manufacturing a viable U.S. business once again (Vivian, 2002). The new prospect of manufacturing in Monessen and a desire for profit attracted speculators to the land. The new community was a quick success until its industry leveled off and ultimately declined.

The East Side Land Company and its founders are primarily responsible for Monessen's name. A general manager of the East Side Land Company used "Mon" in reference to the Monongahela River and Essen for the German steel capital. Monessen's first plot of land went for sale in 1897 and the town became fully established in 1898. Early Monessen land speculators such as James Schoonmaker and William Donner gave rise to the town's early industrial achievements through their early investments. Schoonmaker had made a fortune in

coal in Fayette County and also held a controlling interest in the East Side Land Company. Donner on the other hand, was offered 20 acres of riverfront property to construct a tin mill in Monessen. Donner took the deal and relocated from Indiana giving Monessen the National Tin Plate Company, an industry that would set the example for those that would follow (Vivian, 2002). The wilderness of Monessen was quickly transformed into a thriving industrial town.

Donner's tin mill was under construction beginning in 1897 with the Monessen Foundry going in the next year. A year later, the American Steel Hoops Company, producer of barrel hoops for nail kegs came to the Monessen riverfront creating a seawall built from the mill's debris. J. Wallace Page added a woven wire and fence company and Wallace Rowe created the Pittsburgh Steel Company on 60 acres of property. In doing so, Rowe bought out the hoops company, added more mills and created his company that would exist in the town for the next 70 years. Pittsburgh Steel also purchased Monessen Coke and Coal along with a tubing company and broke ground on eight 95-ton open hearth furnaces in 1907 (Vivian, 2002). The company had put itself at the innovative forefront of steel manufacturing.

Industrial crises began to affect Monessen in the 1930s. Pittsburgh Steel's profits fell as the country tumbled into the Great Depression. The tin mill, owned by Carnegie Steel at the time, struggled through various closings and re-openings throughout the decade. The plant permanently closed down in 1937 resulting in the loss of the nation's largest tin manufacturer. Perhaps the only thing keeping Monessen afloat at this time was the Page Steel and Wire Company that gained the contract to supply wire and cable for the construction of San Francisco's Golden

Gate Bridge. President Roosevelt's New Deal also helped Monessen combat the effects of the Great Depression as it put people to work on government projects. One of the results was the Works Project Administration that improved the Monessen community. Between 1934 and 1936, Monessen began projects that would change its face. The Vocational School was built and is today the Monessen Elementary Center. Next to this school is the town's football stadium which was built in the New Deal era by Monessen architects (Vivian, 2002). The field is still used today as one of the most distinctive high school sports stadiums in the state of Pennsylvania.

The beginning of World War II would ultimately save the industries of Monessen, primarily Pittsburgh Steel. Government contracts began rolling into the mill as it retooled for the war efforts. Upon the war's end, strife in the labor field resumed again lasting for the next 15 years. Gambling and prostitution became prevalent in the 1950s and as the mills along the riverfront began to thrive again, so did these two other industries. Most of the time, these businesses were left alone since gambling, for example, was popular and a big part of the local economy: "Most of Monessen did not mind the gambling and prostitution" (Vivian, 2002, p. 115). The town was well-off as these businesses policed themselves, and at the time, made economic sense.

The period of the 1960s and 1970s fared much differently. Pittsburgh Steel merged with Wheeling Steel of West Virginia, although the entities functioned more as competitors than partners under the new creation of Wheeling-Pittsburgh Steel. By the 1970s, Monessen's population was declining as the mills began to decline. Page's had been buying rods from Wheeling-Pittsburgh Steel's Monessen plant, but

closed in 1972. At this time Monessen's steel industry employed 2600 people, down from 10,000 in the 1950s. A rail mill that used imported Japanese technology and equipment was devised to save the faltering industries that were suffering from new regulations and foreign competition. A last-ditch effort to save Monessen's industry was made by updating and modernizing the mills: "Monessen had all the ingredients of a profitable mill: a world-class coke plant, a continuous caster, a basic oxygen furnace, and a blast furnace" (Vivian, 2002, p. 144). None of this mattered, as the headquarters of Wheeling-Pittsburgh Steel was moved to Wheeling. By 1986, the Monessen plants were permanently shut down with the rail mill following the next year (Vivian, 2002).

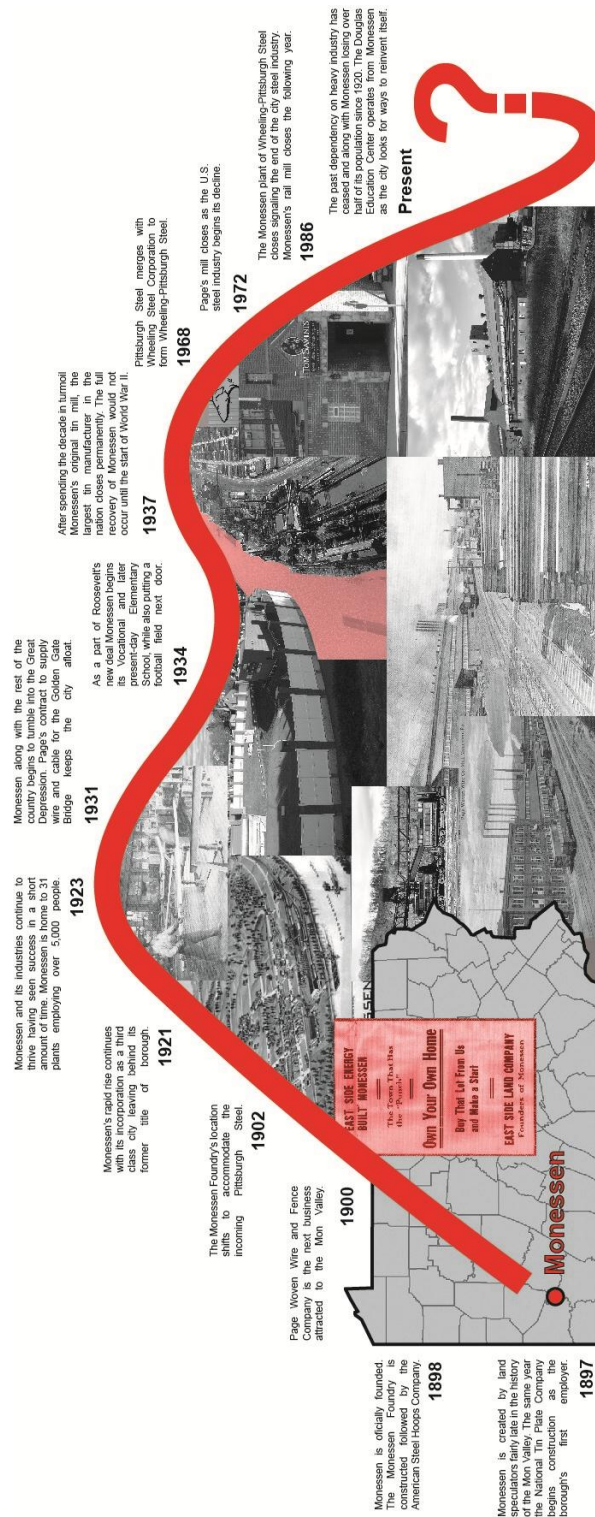


Figure 16. Monessen Timeline

The timeline covers the important events of Monessen's history depicting its highs and lows.

3.3.3 Brownsville

Brownsville, located in southwestern Fayette County, is a small town located in the Monongahela River Valley. The town itself is slightly over a square mile in size. Despite its small footprint, it has had a large impact on both national and regional history. Brownsville began as a major transfer point and gateway to the West for travelers (Neccai, 2009). The town's fertile land, rural setting, and access to the Monongahela River, allowed the developing area to thrive. Brownsville is at the mouth of the former Nemacolin Creek (now called Dunlap's Creek). Brownsville's history dates back hundreds of years as evidenced by Indian burial grounds. The Delaware Indian chief, Nemacolin, guided Col. Thomas Cresap to Redstone in 1747. Redstone is located at the eastern most point of the Monongahela River and is the location of present-day Brownsville. The location was later referred to as Redstone Old Fort (or Fort Burd), a 1759 outpost during the French and Indian War. By 1767, a successful trading post operated from Fort Burd where Thomas Cresap procured more Native American territory (Hart, 1904). Eventually, Thomas Brown, the town's namesake, purchased Cresap's landholdings where he laid out a gridded plan for the bluff overlooking the Monongahela River. Brown bought the land in 1785, sold lots, and by 1814 had incorporated the town as Brownsville (BrownsvillePA.org).

The first point of promise for the town of Brownsville was the era of westward expansion. This was a time period when the town's developing boatbuilding industries came into existence. The early 1800s saw the rise of steamships and other water vessels that would travel the Ohio and Mississippi Rivers. Brownsville was the site that built many of the early steamships and historic crafts. Hundreds of

flat boats and keel boats were produced in Brownsville to accommodate those heading west by water. Around 1811, Daniel French came from Philadelphia to Bridgeport, then a neighboring town of Brownsville, and brought with him manufacturing and steamship construction methods. His operations commenced with the building of the steamships named *Enterprise* and *Dispatch*. The larger of the two, *Enterprise*, is most known for its 1814 trip that departed from Brownsville and would be the first steamship to travel all the way to New Orleans and return successfully to Pittsburgh (Hart, 1904). The site of this launch in Brownsville remains a local landmark.

Brownsville's early industries also included businesses enterprises belonging to men such as Jacob Bowman and John Snowden. During this time, Brownsville worked in collaboration with Bridgeport for most industrial work. The more intensive industries were located in Brownsville, consisting of foundries and Bowman's nail factories. Bowman also started the construction of his home (Bowman's Castle), or Nemacolin Castle as it is called today, in 1789. This home would be further expanded later on by members of his family. Most of the castle seen today is from the 1850s created by Nelson Bowman (NemacolinCastle.org). John Snowden was an English blacksmith who operated the Vulcan Iron and Machine Works located on Water Street. He came to Brownsville in 1818 and was commissioned to produce an English oven for George Hogg. Hogg was so impressed with his work and subsequently financed the construction of the \$125,000, two-story brick rolling mill and machine shop plant. The machinery of the plant was propelled by four steam engines. The plant would go on to produce about fifteen steamship engines along with other machinery (Hart, 1904). The remains of early nineteenth century

industries are hard to see in Brownsville, as they were mostly cottage-scale and integrated into residential communities (NemacolinCastle.org). Most examples of heavy industry within the town have also long since vanished.

The railroad era of the 1850s caused a sharp decline in Brownsville. The town was bypassed by the Pennsylvania Railroad as the first railways were built connecting Philadelphia and Pittsburgh in 1852. Nonetheless, in 1881, Brownsville began to pick up again when a rail line finally reached it. Subsequently, Brownsville became a business district with the development of coal mining operations. During the late 18th and early 19th centuries, Brownsville was able to accommodate a large volume of European immigrants that had come to work in the developing coal mining and coke oven industries after the discovery of a rich coal vein (BrownsvillePA.org). It was this industry that would bring on a second era of prosperity for the small town. Clusters of mining villages developed to further the coke and coal industries. These mines and coke ovens provided the necessary fuel for the steel mills of Pittsburgh located 55 miles downriver to the north. The local boat yards found new use in Brownsville as a new economy allowed for the building and repair of barges needed for the transport of coal and scrap metal. Further adding to the town's renewed success was its status as a home base for the Monongahela Railway that connected the mining villages from Brownsville to the east and south. Brownsville was part of a coke region that prospered through the 1920s (Neccai, 2009). The Monongahela railway still operates as Norfolk Southern for the transport of coal along the river. Brownsville came to depend on the coal and coke industries linked to the steel industry which ultimately sustained the town's economy. This dependency would last for over another half century until the start of

a gradual decline that coincided with the complete demise of the U.S. steel industry in the 1980s.

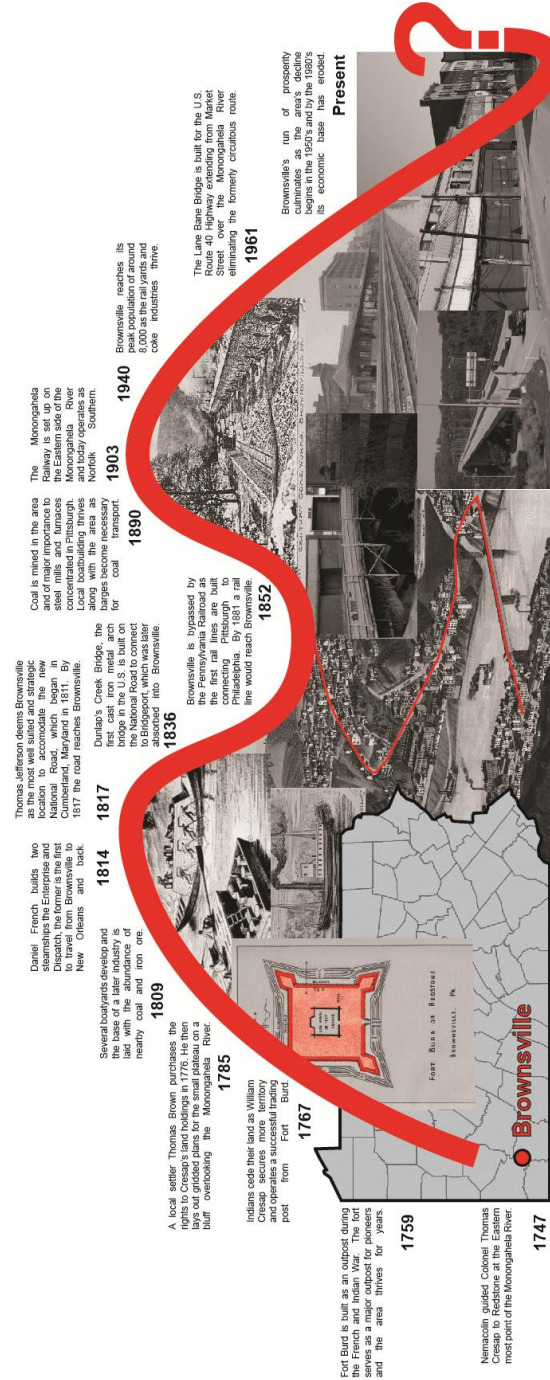


Figure 17. Brownsville Timeline

The timeline covers the important events of Brownsville's history depicting its highs and lows.

3.4 Small Town Fluctuations

As shown in the towns of Braddock, Monessen, and Brownsville there has been a consistent up and down pattern. This pattern has affected both economics and society. Each town has endured its own rise and fall primarily attributed to industry. However, with each fluctuation industry developed an industrial heritage. This is the resource that remains despite these high and low points. The steady process of change and adaptation has almost completely stalled out, but a place specific industrial heritage remains. The present heritage embodies existing local assets, but before it can be gauged, it must first be understood. Industrial heritage remains in the makeup of each respective town. The value of industrial heritage combines what already exists with what can be present. This combination utilizes a resource that can facilitate town resurgence. Insight into industrial heritage is the first step towards revitalization that puts these small towns back on the upswing.

Chapter FOUR

Industrial Heritage Insight

4.1 The Industrial Heritage Resource

Industrialization altered the perceptions of both place and society. In terms of urbanization, the rise of industry was a unifying element and a historic reference point. Changes in Industry were seen in physical and mental realms represented by the remnants of industrial culture. The combination of physical developments and cultural changes played out over time cultivating an industrial heritage. Industrial heritage consists of all the changes spurred by industry in the form of material remains and resulting culture (TICCIH, 2003). Physical evidence, combined with a way of life, creates the intrinsic quality of industrial heritage that makes the resource an integral part of Rust Belt locations. Industrial heritage as a resource possesses dynamic value developed through the consistent physical and social changes created by industrialization. Remnants of industrial heritage that still exist in the Rust Belt serve as a usable resource and a record of progress that once defined the region. Such a resource should not appear in opposition to strategies of revitalization that arose after the region's industrial decline (Alfrey & Putnam, 1992). Revitalization needs to include the assets and resources inherent in a particular area in order to occur. The local assets and character perceived throughout the Rust Belt are the very features that have come to define industrial heritage as a valued resource for revitalization.

Industrial heritage should be broken down into the qualities it possesses, serving as an abundant resource. These qualities span in both physical and mental realms and are evident throughout a variety of contexts which range from ideas, to expression, through built structures. As the influences and impacts of industry were widespread, so is industrial heritage. This pushes a need to derive uniform characteristics of the industrial heritage that remains in the Rust Belt. Industrial heritage can be utilized as a lens that gives new perspective to the assessment of local assets. In this thesis categories have been developed that are meant to provide a basis for determining important assets viewed in terms of industrial heritage. The categories are unique amenities, business clusters, institutions, and geographic advantages. These categories are a streamlined means by which to value industrial heritage as it is utilized as part of proposed revitalization efforts. The determined categories provide a means of understanding and gaining insight into a complex resource. The rationale for how the categories have been derived as well as their significance to industrial heritage will be described below.

4.2 The Categories of Industrial Heritage

Unique Amenities, Business Clusters, Institutions, and Geographic Advantages are useful starting points for revitalization efforts. James Connolly (2010) provides the basis for this insight into industrial heritage. He summarizes these elements as assets for renewal of small industrial cities. Each point is only mentioned as a summary, lacking any explained or intended definition. Furthermore, Connolly cites Fox and Axel-Lute (2008), who also believe in starting from distinctive and overlooked existing assets, as part of his brief summary of

points. Developing definitions for these points, in combination with their application to industrial heritage resulted in the IHM categories as part of a larger mechanism. Allocating the terminology into categories allowed commonly recognized existing assets of small industrial cities to be applied to ideas of industrial heritage. These categories encompass the broad range of capacities within which the industrial heritage resource is present. A complex resource has been made accessible through the use of quantifiable categories. In this thesis, *Unique Amenities*, *Business Clusters*, *Institutions*, and *Geographic Advantages* are categories viewed through the lens of industrial heritage which create divergence and expansion in terms of definable characteristics. So as to not limit these characteristics, a more detailed understanding is necessary in light of their significance and application to industrial heritage contexts.

Assets and characteristics that define industrial heritage are as dynamic as the value of the resource itself. While industrial heritage survives, the process of change that involves space and time which operated in Rust Belt towns has slowed down to a crawl since the collapse of prominent industries. To jumpstart the process again, industry's own byproduct, industrial heritage, must be understood from a new perspective. Industrial heritage is a vital resource and a result of a now slowed process, but it possesses value as a changing record of societal progress illustrated by both evidence and a social record. The value of industrial heritage has multiple narratives to tell, allowing it to be perceived from multiple perspectives (Alfrey & Putnam, 1992). This creates a significant need for multiple categories to quantify the resource. The summary of multiple categories relevant to industrial heritage are useful as a building block assessment for a useful, but otherwise

complex resource. The most straightforward context from which to first get an understanding of the categories of industrial heritage comes from its most traditional setting, the factory or mill. These are the first examples provided to aid in terminological explanations, but additional examples have also been presented.

4.3 Geographic Advantages

The category of geographic advantages refers to the geographic features that make up small towns, and nearby surrounding towns. This overlap leaves the geographic advantage category with the largest scale because of the relationships it must account for. The Rust Belt was a large-scale industrial network that overlapped, linked, and unified locations within the region. These industrial links established a heritage landscape which can ostensibly erode as industry diminishes. The industrial heritage landscape holds sustenance in that it has no discernible boundaries, affects the geographic landscape, and spans throughout the entire Rust Belt. Geographic advantages imply the existence of an industrial landscape which can be a limitless abstract entity. Though the industrial landscape is a large part of the local framework, the history of industrial activity transcends the local landscape. Industrial heritage, like industry, is not solely a local endeavor. This means that the understanding of an industrial landscape goes beyond a local framework to focus on the existence of regional connections and typological links (Alfrey & Putnam, 1992). The existence of such links makes geographic advantages the furthest reaching category as it can simultaneously allow the overlap of industrial heritage between an individual place and a wider context.

Small town geography in the Rust Belt region was defined by industry which also created connections among Rust Belt towns. Some of these connections are easily visible with their industrial similarities, while others are a more abstract. The linkage between places exists due to a common shared industrial heritage. There are geographic advantages specific to individual towns, but those towns also have ties to the advantages presented by their surroundings through connections within the larger Rust Belt region. Geographic advantages are, to a certain extent, about attempting to connect the dots since industry created links between places that are mostly broken. The whole picture will never be entirely visible because all the dots or links no longer exist. However, even though the connections may be broken; they still exist. Alfrey and Putnam (1992) even reference the fragmentary nature of industrial heritage which is only further showcased by these broken links and propose an approach that interprets and compares the pieces like that of taking an inventory. The geographic advantages category presents a means to classify or inventory these broken fragments and is illustrative of a once larger whole.

The larger whole is a heritage landscape that is derived from a certain perspective and historical record of accrued layers that tracks societal changes. This shows geographic advantages as more than just the physical makeup of a location. They are much broader, overlapping both place and surroundings. The geographic representation of these layers can be found within small Rust Belt towns, particularly those present in the Mon Valley. An industrial landscape is a record of change for both the physical and social realms; and a town's geography is an expression of such landscape. In the discussion of landscape, Fairclough (2006) for example, finds value in characterization that focuses on understanding the whole

of an area rather than just particular parts. Geographic advantages operate in similar fashion and recognize the necessity to go beyond individual parts for a clearer perception which covers a broader context. The call for closer attention to a broader context works in a geographic sense. Advantages found at the local level also work beyond the confines of an individual town. Landscape itself is “an interface between people and place”, but such an interface is a part of the geography of industrial heritage that functions within a wide range of complex contexts (Fairclough, 2006, p. 61). These contexts comprised of geographic advantages, interpret and reinterpret connections of both people and place. The industrial landscape persists in part as a geographic entity, but remains part of a larger network that illustrates the value of industrial heritage through its geographic advantages.

4.3.1 Geographic Advantages – Emscher Park

The geographic advantages presented by industrial heritage can be seen in the Ruhr region of Germany, specifically, at Emscher Park. Emscher Park serves to illustrate the definition of geographic advantages. It is a landscape park developed to revitalize a struggling industrial region. The Ruhr Valley was the industrial center of western Germany, operating through two world wars before faltering in the 1970s (LaBelle, 2001). Emscher Park was part of a plan rolled out in sections starting in 1989 and set to culminate by 2014. The area was home to a variety of industrial artifacts, brownfield sites, high unemployment, and strong environmental contamination. The project’s goal was to clean up the Emscher River and its surroundings, while creating a lush green park connection along the river making

use of the industrial sites (SustainableCities.dk). The park itself contains several driving routes, historic cycling paths, refurbished buildings, exhibition spaces, and even rock-climbing walls among its green infrastructure (LaBelle, 2001).



Figure 18. Emscher Park
Landschaftspark Duisburg-Nord section of Emscher Park.
(Pereckas, 2008)

Emscher Park was created as a landscape park, used to restore one of the most degraded European landscapes. According to Brenda J. Brown (as cited in LaBelle, 2001), it has become a symbol of urban, economic, social, and environmental change. Emscher Park is the result of combining ecological concepts and a verdant green infrastructure within an industrial landscape [See Figures 18 & 19]. The abandoned brownfield sites spanning the region served as a geographic advantage through their transformation into an industrial heritage park. The park is not only appealing to tourists, but serves as a means for locals to better understand or reconnect to their industrial heritage. Although the ties of industry to the Ruhr

region may have been severed, or marginalized at best, the park has allowed these ties to be redeveloped in new captivating ways that value industrial heritage. Industry created the region and its connections; but the park maintains those linkages through the remaining industrial heritage resources present within the landscape. The park illustrates a geographic advantage because it operates at the local level, but is also linked to a much larger regional context. The advantage of such distinction allows the massive park project (stretching over forty miles), to enhance the region (comprised of seventeen cities), provide an influx of 5,000 jobs, and completely improve the local image (SustainableCities.dk). Geography, as it relates to the Ruhr area, is an expression of an industrial landscape which covers physical and social realms. The Ruhr's advantage is that its industrial landscape is also its geography. It is this very geography which became the building block for the creation of an industrial park. Emscher Park reconnected not only place to place, but also people to place through the widespread geography of an industrial heritage landscape.



Figure 19. Emscher Park Waterway
Landschaftspark Duisburg-Nord waterway section of Emscher Park.
(Pereckas, 2008)

4.3.2 Geographic Advantages – Seattle’s Olympic Sculpture Park

The Olympic Sculpture Park located in Seattle, Washington is a geographic advantage that takes art outside into the landscape of the city. The Olympic Sculpture Park designed by Weiss/Manfredi environmentally restores a former petroleum transfer distribution site. The eight and a half acre site was an industrial brownfield that the Seattle Art Museum bought in 1999. The Z-shaped configuration that opened in 2007 provides an outdoor sculpture and recreation setting. The constructed design is focused on art, but it is also returns the site to a functioning ecosystem. The unfolding landscape creates new topography to view art and the city of Seattle as it rises over existing roads and train lines along the waterfront (SeattleArtMuseum.com).

The park design is a new model for an urban sculpture park. The sculpture goes outside the traditional museum setting as the park goes out into the landscape and the city (Weiss/Manfredi). Geographic advantages refer to the geographic features that make up a place. Seattle's last undeveloped waterside brownfield site was one such feature. The location was a missing geographical link in reconnecting the local geography of the city back to its waterfront. The Z-shaped green platform that was built descends down 40 feet from the city to the water's edge rejoining an urban core to a revitalized waterfront. The park consists of three separate sites linked by the Z-shape. An exhibition pavilion is present for art, performance, and education along with a pedestrian route of three archetypal Northwest landscapes (Weiss/Manfredi). The construction of the Z design is by way of mechanically stabilized earth that re-establishes the site's original topography. Before construction commenced, 120,000 tons of contaminated soil was removed with the remaining soil capped by the creation of a new landform. The construction makes use of plantings that collect and cleanse storm water. This landform connects art, landscape, and urban life as the Z-shape culminates with a newly created beach area (ArchDaily.com). The park becomes its own landscape that holds together its own ties to its own features. However, these ties, like geographic advantages, must also represent an extension beyond the connections of internal parts. These ties can link together internal features, but the park is a geographic advantage because it links features in a broader sense. The park may be its own landscape of sorts, but it still has a relationship to the wider landscape. The link between a city and its one time industrial landscape was broken which enabled the sculpture park to use its own devices in bridging that gap, both in the literal and figurative senses.

4.3.3 The Extent of Geographic Advantages

Geographic advantages are the immediate surroundings and existing ties that can be used to benefit a location. However, geographic advantages are more than just links to surroundings. Patterns of creation influence local geography, and in turn, shape a place as part of a linked broader region. Geographic advantages must balance links to surroundings, while simultaneously existing as part of a specific place. The point to remember is that geographic advantages have to account for multiple relationships, both within a town and also to its surroundings. While the location itself is of focal interest, its surroundings are also a part of the area and cannot be ignored since they are a part of industrial heritage that links back to place. These links were once valued, extending as built connections. The possibility to re-establish these latent ties rests in understanding that connections exist even though most consist of broken links. Despite their appearances, geographic advantages remain true to the broad sense of the category. They funnel down to the other categories of industrial heritage through the connections they establish both internally and externally on a place by place basis. In this sense, geographic advantages can be seen as links created between the other industrial heritage categories as well as to neighboring areas.

4.4 Business Clusters

Existing business clusters in the Rust Belt provide evidence of a process that resulted in embellishments to an urban fabric. An economic foundation is what made the Rust Belt into America's "industrial heartland" (High, 2003, p. 40). The

changes in economics allowed the development of new patterns with these changes playing out in the Rust Belt with the Mon Valley as a prime example. The Mon Valley, like other areas of the Rust Belt, has a storied history and an extensive economic background. Businesses and other economic enterprises had the tendency to be grouped together based on similarities within specific areas of a town. The spatial patterns of an industrial landscape are thus readily relatable to the economic realm (Fairclough, 2006). For example, the older towns of the Mon Valley began as trading posts and frontier gateways, while newer developments had their beginnings as pure inventions of industry. The industry that would occupy the Rust Belt and the Mon Valley in particular, did so because the locations were ideal to the needs of the time. Industry allowed business to grow and flourish within the small town setting, but this singular dependency left towns vulnerable to industrial abatement. Left behind is a historic process of economic creation, use, and reuse that has almost completely petered out. Business clusters are an extension of this process and an example of how comprehensive characteristics of industrial heritage can be translated beyond the realm of manufacturing.

The reaches of industrial heritage are extensive, creating the question of what exactly constitutes industrial heritage. The International Committee for the Conservation of the Industrial Heritage (TICCIH) charter provides a definition that covers a wide spectrum of industrial heritage; it mentions buildings, stores, warehouses, and workshops as well as more commonly associated examples such as factories (TICCIH). The value of industrial heritage is not exclusive to factories or sites of heavy industry alone, further emphasizing its wide scope and adaptability. The value is broader and accessible to other economic endeavors that make up

clusters of business which in some cases, can be, or still remain as viable local options. Alfrey & Putnam (1992) point out that focusing only on the technological aspect of industry ignores the organization of industrial life. Such a focus again refers to the factory context and ignores the broader extents of industrial heritage. Business clusters operating in addition to heavy industry were part of these extents as well as the organization of industrial life. The remains of business clusters, whether occupied or not, are a means of balance between heritage, present living, and the future (1992). The business cluster category is broad in definition accounting for heritage beyond the factory; but what it encompasses still resides within a town though not as widespread as the aforementioned geographic advantages category. A renewal, rather than a re-creation, enables the value of industrial heritage to permeate this category as it is balanced among heritage, both present, and future. Many business clusters in the Rust Belt may owe their origin to industry, but they too, like industry, are a representation of industrial heritage and its life-changing additions.

4.4.1 Business Clusters – Pittsburgh’s Strip District

The Strip District is one type of business cluster that began as an industrial center and today operates as an urban market. The Strip District is a Pittsburgh neighborhood occupying a one-half square-mile area along the Allegheny River. The site dating back to 1814, first rose to prominence during the 1820s and 1830s when iron mills, foundries, and glass factories made up the Strip. In the early twentieth century Pittsburgh produce merchants began to relocate to the Strip due to its transportation access and location that had once made it attractive to

manufacturing industries. Eventually, wholesale produce distributors occupying the Strip District had to diversify to incorporate retail shops and restaurants. Today, the Strip is a historic market district that provides over 16,000 jobs and is known for its wide variety of ethnic foods, retail produce, restaurants, and coffee shops. It is also an open-air farmer's market in the summer and vibrant nightlife destination (NeighborsintheStrip.com). The Strip District is Pittsburgh's most noted business cluster and a regional economic force [See Figure 20].



Figure 20. The Strip District – Pittsburgh, PA
A view down Smallman Street.
(Quan, 2011)

The Strip District demonstrates the business cluster category through its continual renewal and cultural diversity that allows industrial heritage to be valued through more than just the factory lens. The Strip District is an active market district and an illustration of the industrial heritage present within business clusters. Business clusters are often additions to an urban fabric and grow to reflect a local character. This business district is one of Pittsburgh's many diverse neighborhoods.

The Strip represents the local character that was instilled at the site from its beginnings as an industrial center. Industrial factories that originally occupied the Strip tended to congregate along rivers. This gathering of these businesses eventually formed into the business cluster that resides there today. The Strip's site was an ideal industrial setting that adjusted into becoming an ideal market setting within its given context. The Strip is a cluster of businesses that show a way of life present in a once industrial setting on a formerly heavy industrial site. Business clusters are also a record of economic history and a record of change to the industrial heritage landscape. These ongoing changes are represented within the Strip District through buildings such as the Chautauqua Lake Ice Company Warehouse (known today known as the Heinz History Center) and the Armstrong Cork Company building that became the Cork Factory Lofts. These structures are visible alongside Strip District historical mainstays such as the original Primanti Brothers Restaurant and Wholey's Fish Market (NeighborsintheStrip.com). The Strip District's industrial heritage is a product of a local setting that enabled its economic transition from manufacturing to marketplace creating a business cluster within an industrially forged city.

4.4.2 Business Clusters – Chelsea Market

The Chelsea Market is a business cluster of the West Chelsea neighborhood in Manhattan. The market is a mixed-use office and retail development that evokes the industrial history of its site once home to the National Biscuit Company. This business cluster consists of a food court, mall, and offices. The original use began in the 1890s with the amalgamation of some eastern bakeries and the construction

of a six-story bakery. The National Biscuit Company complex was built in stages from 1890 to 1932 resulting in a twenty-two building collection. An eleven story full brick structure was built in 1913 as the most prominent of the market's buildings. A pedestrian bridge connects both existing structures over 10th Avenue (ChelseaMarket.com). Currently the business cluster is home to over 30 retailers collected over a two block section. The fully occupied one million square foot office portion operates with 3500 jobs and boasts tenants like NBC Universal and Google. The ground level 100,000 square foot retail space acts as an incubator of food related business (ChelseaMarketNext.com). Despite this history of alteration, the site still manages to retain the spatial patterns of industry.

The Chelsea Market business cluster presently functions through a symbiotic relationship between office and retail space. The market is a fairly concentrated cluster of businesses grouped together by a series of structures. The current structure had its start as a collection of merged businesses in an industrial area. The progression back to a linked grouping of businesses fits the site's industrial heritage. The reused cluster has office tenants on the upper levels as the financial anchor, while the ground level market is the complex's face and primary attraction (ChelseaMarketNext.com). This relationship provides a more diverse set of uses within the business cluster, rather than a dependence on only one thing. Business clusters are typically a grouping of businesses in a location concentrating on one type of industry. However, concentration on one industry in the Rust Belt, ultimately proved to have negative effects when those industries departed. The concept of business clusters like those at the Chelsea Market, have since expanded to

accommodate the idea of a diverse business concentration, instead of being limited to just one type of focus.

Existing fragments of the original Nabisco industrial heritage are revealed throughout the market treating it as an excavation rather than concealment (ChelseaMarket.com). This excavation of sorts also boasts a second story connection to the High Line, a nearby unique amenity and elevated urban park. The original building itself was altered in 1932 to accommodate the High Line's elevated freight lines (ChelseaMarketNext.com). The remaining High Line connection shows how far the Chelsea Market as a business cluster has diversified since moving beyond traditional industrial realms. This connection also shows an existing overlap between a unique amenity and a business cluster. Spatial patterns such as this show the visible influences of industry on the local fabric. In the case of the Chelsea Market, these patterns are brought on by its High Line connection. The Chelsea Market is a cluster tied to industry, but not necessarily defined by it. The market has gotten beyond the realm of typical manufacturing, but is still very much linked to the visible process. A cluster of businesses has shown that they can operate amidst strong remaining industrial features.

4.4.3 The Organization of Business Clusters

Business clusters mainly prove that industrial heritage extends beyond the factory and applies to more than just manufacturing. Business clusters grow from a reflection of local character, fusing the gap between themselves and the traditional factory setting. All facets of industry, even external factors can influence their

formation. The organization of industrial life created this need for a presence beyond a traditional mill setting. These clusters are an extension of industry and a part of industrial heritage because industry provided the opportunity for the creation of these clusters. Industry was present in all aspects of life and extended beyond the mill setting into the makeup of the town. Today, these business clusters are not always necessarily presented as clusters in the same way as in the past. They could be spread out or closely bunched together. With today's business clusters needing the potential to attract a more diverse usage set that deviates from a forced industrial dependency; a singular purpose that dictates one type of industry is a thing of the past. Business clusters must be divergent as they can no longer adhere to the industrial mold of one particular use. This diversity is necessary to stimulate and ensure the intention of long-term growth.

4.5 Institutions

The Rust Belt was partly created by institutions, albeit primarily industrial ones. An industrial institution uses available resources to manufacture a product. Becoming even more place-specific, institutions exist in the Rust Belt through established organizations and through relationships within a local society. Institutions exist as part of a local context. They act as a rooted representation of a society's industrial heritage as well as a means of heightening awareness for the value of the resource. This is accomplished through institutions such as libraries or historical societies. Established organizations with long-running histories mostly represent institutions of an older variety. Factories and mills were economic providers, but also fostered a way of life in the Rust Belt while acting as institutions.

Families, friends, and relatives alike often lived and worked under these deep-rooted industrial institutions (High, 2003). The ideas of such organizations were bound to place and remain in the local context even after the downturn of defining industries. Institutions in the Rust Belt still maintain ties to industrial heritage through organizations of various sizes, such as historical societies, revitalization groups, schools and libraries. Places utilized for social activity with ties to industry can include institutions with focuses ranging from housing to education (TICCIH).

The formation of institutions is another example of what activity patterns of an industrial culture can create with the right setting and ample time. Institutions have become an embedded part of the industrial heritage resource. Concepts such as interpretation lend themselves to understanding the value of institutions within the realm of industrial heritage. Interpretation focuses on understanding heritage as a resource, its connections, contexts, and usage (Alfrey & Putnam, 1992). Institutions were connected to an ever-changing local context that enabled different uses. The use of an institution of the past may remain the same or become different. What remains constant is the context of industrial heritage which enables both old and new institutions to function with respect to their own goals within their respective communities. Interpretation of institutions provides value as a part of industrial heritage and provides the potential (in its own way) to heighten awareness of what industrial heritage is, and can be. The vision and goals of the Rust Belt's institutions may vary, but in many cases, are already a valued part of the industrial landscape; and those of the more recent variety can be assimilated in time.

This assimilation refers to newer institutions, but institutions can also be of the already existing variety. Some institutions for example, are very much rooted in

place, but there are also newer ones to consider that lack such status and must be tied into industrial heritage. As Alfrey and Putnam (1992) believe both the contemporary and the long-established constitute industrial heritage. This further establishes the dichotomy that exists between the old and new in terms of institutions. Newer institutions are subject to a different process as opposed to their older counterparts. An institution can exist within the given context already possessing ties to industrial heritage, or in the case of newer institutions, a means to create ties is needed. A Fairclough (2006) point is helpful to understand institutions in this sense; because like an industrial landscape, they are best served to focus on a character change rather than just change itself. A newer institution would have to embody such a character change as it develops through a symbiotic relationship thereby gaining the status and resources it lacked before. In return, it can offer new potential that its host could not achieve alone. A newer institution needs to take advantage of what already exists since the existing traits are most likely to be embedded within a context with ready-made ties to industrial heritage.

4.5.1 Institutions – Sloss Furnaces

The Sloss Furnaces in Birmingham, Alabama, remain as an example of an industrial institution that defined a place, but has moved beyond its original use to find new value. Col. James Withers Sloss founded his company in 1882 and Sloss Furnaces operated in the production of pig iron until 1971. What remained was a huge artifact and record of social upheaval associated with both industry and labor. The Sloss Furnaces told the story of Birmingham and its role as the industrial center of the South, along with its contributions to the iron making process. After winning a

preservation battle, the site was turned over to the control of the City of Birmingham. This victory led to the only publicly-held industrial site in the world with a blast furnace preserved for public use. Sloss Furnaces reopened in 1983 after gaining status as a National Historic Landmark in 1981. The site functions as a museum with over forty buildings and two 400-ton blast furnaces (SlossFurnaces.com). The one-time industrial giant found a new role as an institution of Birmingham.

The evolution of Sloss Furnaces as an institution has allowed it to develop new uses and attachments while remaining a part of the Birmingham community for over 100 years. Preservation at such a large scale had never been attempted, but the result now hosts a museum of industry, a metal arts program, and venues for concerts and festivals. Sloss Furnaces offers self-guided or led tours of the site along with open studios, workshops, classes, and residencies in the metal arts (SlossFurnaces.com). Institutions define and affect ways of life. The Sloss Furnace structure is that of a steel mill, but its present use and goals are that of an institution [See Figure 21]. The Sloss Furnaces remain as an example of an institution linked to accumulated local history and heritage. Both the City of Birmingham and its institution developed and flourished together. Despite changing contexts, the long-standing institution allows Birmingham to maintain ties to its industrial heritage. Altered contexts enable new uses which compel change in both the place and the institution. Birmingham changed, and eventually Sloss Furnaces caught up to those changes finding new uses as a museum and arts center rooted in the past, but centered around the promotion of local industrial heritage. For an institution to survive, it must adjust as the Sloss Furnaces did, alongside a respective context

that inherently provides the ability to adapt. The evolution was natural considering Sloss Furnace's longstanding ties to the industrial heritage of Birmingham.

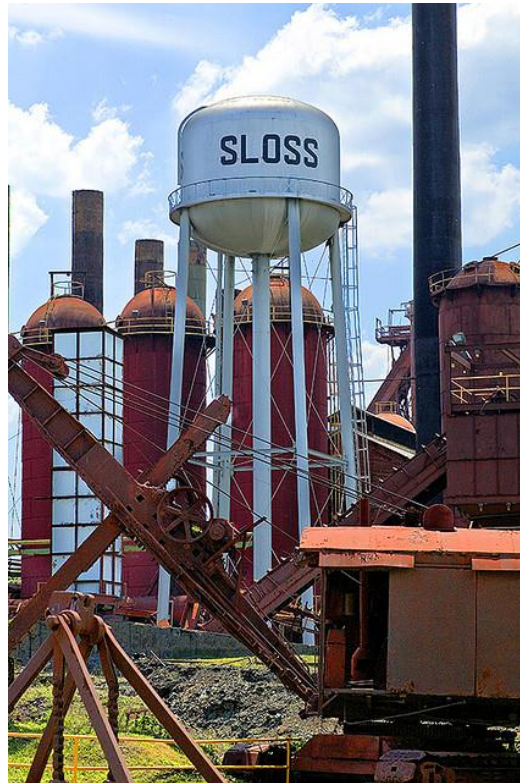


Figure 21. Sloss Furnaces – Birmingham, AL
(Headrick, 2006)

The value of industrial heritage is what makes an institution adaptable to change. While the context of the *place* differs, the context of heritage remains even through additions over time. An institution is open to the concept of interpretation because it is the starting point of revitalization that understands industrial heritage as a resource in terms of changing contexts, connections, and usages (Alfrey & Putnam, 1992). Changing elements allow institutions like the Sloss Furnaces to maintain their embedded connections to accumulated local heritage despite

changes to the Birmingham context and alterations to the use of the institution itself. This is why institutions are a key part of the value of industrial heritage; they work collaboratively, yet can change within their own contexts.

4.5.2 Institutions – ACCD South Campus

The ACCD South Campus located in Pasadena, California resides in a former aircraft design testing structure and kitchen appliance factory turned educational institution. The Art Center College of Design (ACCD) wanted an additional campus to better connect with its city. The private design college turned to a 100,000 square foot former supersonic wind tunnel facility. The redesign opened in 2004 and accommodates graduate and public programs across various ages and skill levels. Further renovations in 2009 yielded additional exhibition spaces, studios, and classrooms. The ACCD South Campus was one of the first LEED accredited buildings in Pasadena (ArtCenter.edu).

A former wind tunnel structure served the expansion needs of a college and transformed its use and purpose to that of an institution. Institutions exist through ties to society as rooted representations of industrial heritage. The contemporary can constitute this heritage. In the case of the ACCD South Campus, reuse enabled a contemporary industrial structure to change its function to that of an institution with an educational purpose. The college needed a means to better connect to its city. The wind tunnel facility already had this established connection and a symbiotic relationship commenced. The ACCD South Campus was created as the result of an institution arising to fill a specific need. The facility gained a new use and purpose,

while the college got the connection it had sought. However, a newly created institution like this one has to continue to embody its character change. The interior of the structure was minimally touched to preserve the industrial character and identity of the original building. The building's circulation spaces are open to overlook its below levels. The testing and manufacturing facility, however, came with few windows and a fairly closed-off building. Renovations opened up the structure to the outside city and surrounding environment while providing light to the interior classrooms. Windows were cut into the street front concrete portion to make the interior classrooms visible from the street. Skylights cut the roof amidst a constructed sculpture garden and accessible rooftop campus quad (DesignBoom.com). These changes completed the character transformation of an industrial facility. The facility renovations were a necessary part in accepting the creation of an institution that required local ties to exist.

4.5.3 The Use of Institutions

There is a great deal to learn and understand regarding the creation and use of institutions. Institutions demonstrate the potential of industrial heritage regardless of how they were created. Institutions are typically organizations that have goals pertaining to the betterment of a particular community. They have the capability to change uses which allows a default classification of a unique amenity to become something else. Other institutions are already established through industrial heritage thus representing the prominence and stature associated with longer-running versions. Both instances of institutions have ties to industrial heritage. Older organizations develop as a part of those ties while newer ones need to find a

way to insert themselves within those ties. Industry touched a lot of different facets within the places where it resided. Industry's prevalence was so great and its impacts were so far-reaching, that when industry diminished, it created a lot of holes. Industrial heritage can be utilized to fill some of those holes that industry left behind. Institutions can latch on to existing structures through industrial heritage and develop a symbiotic relationship. Depending on the objective, newer institutions can use industrial heritage to connect with an existing structure as a means to promote their goals while providing an innovative outlet for a past object. An old structure can become new again when provided with a new purpose. The lesson from this, is how unique amenities can accommodate a host of options. Under certain circumstances, other types of institutions can develop. There is not always a limit of one institution per structure. Multiple relationships can reside within and make use of a structure through industrial heritage. Institutions can represent long-running connections or showoff the new potential that can be disclosed through a change in use. In this case, industrial heritage acts as the conduit for the development of that institution.

4.6 Unique Amenities

Amenities unique to a particular place are the narrowest category since these are elements that make a specific location different from others. The communities of the Rust Belt share a similar history that has created a similar heritage which encompasses the entire region. However, certain elements have developed within the local context and are exclusive to those places which make them distinctive. A typical amenity is mostly thought of as an attractive, comfortable,

and pleasant facility. Amenities are also considered useful when their purpose expands beyond comfort. In this thesis, amenities are useful and distinctive if they are one of a location's exclusive features. A visible heritage, and in this case, an industrial heritage, was produced by people, products, and history that accumulated over time (Alfrey & Putnam, 1992). In terms of this accumulation, place specific features persist in the form of unique amenities. Sometimes, what shapes industrial heritage is far-reaching while other times, it is much more exclusive or unique to a specific context. As already covered by Alfrey & Putnam (1992), heritage is best utilized when not separated out from its original context. Industrial heritage in this context is both a broad and a specific resource. It overlaps a region and provides instances of industry that are place specific. To disregard or separate industrial heritage from its original context devalues a useful resource. The resource itself is also devalued when the only unique amenities recognized within a town consist of the most celebrated, rare, beautiful, traditional, or historic representations of industrial societies. Industrial heritage extends to the place specific, but also to those elements that may not have the prominence associated with more visible local counterparts. Such an example would be the everyday versus the exceptional. Unique amenities also exist as the catchall category for industrial heritage in that it retains the potential to remain or reclassify as one of the other three categories, depending on a new use. These new uses bring change to the special features recognized as unique amenities. The other categories are broader in scope, but still remain place specific. Unique amenities are a distinct part of a place, enabling them to be an exceptional extension and aide in establishing an overlap between contexts. Industrial heritage recognizes the value of town-specific, industry-related amenities which while a part of the larger network, are also an accumulated part of

local culture. For this reason, unique amenities of small towns are valuable. They are often a building block of industrial heritage though their prominence is not always as important or necessary for value as their presence.

4.6.1 Unique Amenities – Bethlehem Steel

Place specific unique amenities exist as examples of industrial heritage when referring to the Bethlehem Steel Corporation of Bethlehem, Pennsylvania. At one time, this corporation was the second largest U.S. steel producer and functioned as the city's main industry, and most prominent asset. Bethlehem Steel began operations in 1857, was shut down in 1998, and went bankrupt by 2003. The remnants of the Bethlehem Steel complex remain on a 160-acre industrial brownfield site [See Figure 22]. Ultimately, the site fell into further turmoil as stakeholders and other groups wrestled with the site's significance and future use. Plans for an industrial history museum eventually gave way to the development of a casino as part of the redeveloped site (Holt, 2006). Today a casino complex resides on the site of Bethlehem Steel among the many reminders of an industrial past.

Bethlehem Steel stands as the most unique amenity specific to Bethlehem. Today, the site is also home to the Sands Casino Resort Bethlehem. The casino opened with 3,000 slot machines and four restaurants in 2009. At that time, 4.5 million visitors a year were projected along with nine million contributing to the city's general fund (Friess, 2009). To further revitalize Bethlehem, the Sands Hotel was added in 2011 and work is currently underway with ArtsQuest (a performing arts center) and the National Museum of Industrial History (PASands.com). The Sands

Casino, located at the site of Bethlehem Steel, is unique to the context of Bethlehem because it is an industrial-themed casino that developed around and added to a unique amenity enhancing its distinctive standing.



Figure 22. Bethlehem Steel Furnace
Industrial remnant blast furnace located in Bethlehem, PA.
(DeLuca, 2008)

Bethlehem's foremost unique amenity and main source of industrial heritage was able to accommodate a casino. Though some existing structures were demolished to make way for new developments, they in turn allowed for other structures at the site to remain intact. For example, the twenty-story blast furnaces among approximately twenty other buildings remain and have been incorporated into the resort (Rourke, 2007). In terms of unique amenities, prominence is not as important as presence. The Bethlehem Steel site managed to fill both roles at a

location that was once in danger of disappearing completely. Not only was Bethlehem Steel a leader in the larger U.S. Steel market, it was specific to the heritage of its host city and namesake. The existing industrial heritage at the site made it an attractive opportunity for redevelopment in that it provided for a steel mill site to coexist with a casino. Such a unique amenity capitalized on a useful place exclusive site with ties to a broader heritage. The site managed to retain its status as a restored asset to be viewed as distinct and different.

4.6.2 Unique Amenities – The High Line

The High Line is a historic freight rail line and unique amenity elevated above Manhattan's West Side. The High Line, established in 1934 as part of the West Side improvement, runs through the neighborhoods of the Meatpacking District, West Chelsea, and Hell's Kitchen/Clinton. Today, this unique amenity is used as a 1.45 mile long elevated urban park supported by its own existing steel structure. The neighborhoods that it spans are currently home to galleries, museums, studios, retailers, restaurants, and residences. Since the Friends of the High Line group became advocates for its reclamation, the High Line has become a model of industrial reuse with other cities seeking out similar designs. The first section of the renovated High Line opened in June 2009 as major tourist attraction with the second section coming in 2011. Future plans include the preservation of the West Side rail yards and a continuation of the High Line's expansion (TheHighLine.org). This structure's reuse has cemented it as a unique amenity and major place specific attraction.

The High Line was a one-time crumbling urban relic. This rail line was a remnant of a different kind of city from a different time (Goldberger, 2011). Construction was originally done to lift freight trains in the air, taking them off the streets of Manhattan's largest industrial district. The raised up freight line connects directly to buildings and factories that once allowed trains to roll directly inside their structures (TheHighLine.org). Today, this amenity is still connected to these industrially influenced features, such as its link to the Chelsea Market business cluster complex. The High Line structure's surviving portion was often under threat of demolition; but the reuse of this artifact allowed an industrial object to literally support a park. The structure's industrial legacy is what has enabled it to endure. The High Line is a place exclusive feature that is specific to the industrial history of the neighborhoods it spans. Today, the elevated park located twenty-five feet above ground is simultaneously separated from and connected to street life. The High Line is part promenade, town square, and botanical garden (Goldberger, 2011). Its planting design uses the same plant species that began growing on the tracks when operations ceased in 1980 (TheHighLine.org). The High Line through reuse has managed to remain true to its context at every level. This prominent unique amenity is a structure that stands as a constant representation of the dynamic framework of local industrial heritage.

4.6.3 Unique Amenities Reclassification – Bankside Power Station

Tate Modern, a London art gallery resides in the former Bankside Power Station as a local institution created from a unique amenity. Located on the south bank of the River Thames, the Bankside Power Station sits opposite St. Paul's

Cathedral. The power station was built in two phases in 1947 and 1963 by Sir Giles Gilbert Scott. The construction was originally met with strong public opposition. After its use ceased in 1981, the Tate Trustees selected the site in 1994 to accommodate their desire for a separate gallery to house international modern contemporary art. Herzog & de Meuron were selected for the task based on their proposal to retain much of the existing station. Tate Modern opened in 2000 and became one of the top three tourist destinations in the United Kingdom with more than forty million people having visited it since the opening (Tate.org). The Bankside Power Station's switch to Tate Modern is an example of successful reclassification that unique amenities can undergo.

The Bankside Power Station's heavy machinery was removed stripping the structure back to the original steel and brick work. The brick shell and interior steel structure remain with the original turbine hall, boiler house, and 325 foot high central chimney. The turbine hall was converted to an entrance with the boiler house becoming galleries. In 2009, Tate Modern embarked on an additional project to reuse existing oil tanks increasing gallery space and improving visitor facilities (Tate.org). These changes illustrate the usefulness of the unique amenity category. What otherwise would stand as a place-specific unique amenity was turned into an institution. It is also important to note that the originally negative public perception of the power station at the time of its construction is of little consequence to its classification. As a reminder, industrial heritage consists of more than the most celebrated features. The accumulated status and ties to local heritage made the power station a feasible gallery home. This change in use not only created an institution, it also reclassified a unique amenity. The power station structure was in

need of a new purpose and use despite its local historic stature. Tate Modern provided that new use, transforming the station into an expansive modern art gallery. In turn, the Bankside Power Station's reuse managed to heighten awareness for the industrial heritage resource. Reclassification turned an otherwise distinct, but silent reminder into a major attraction and local benefit.

4.6.4 The Character of Unique Amenities

The creation of entire locations through industry is what enabled a multitude of local facets to be infused with industrial heritage. Unique amenities are distinct area summarizing markers of this industrial heritage, not just limited to physical structures. Such markers represent the extents of the heritage resource in a number of ways. Unique amenities are the narrowest point on the spectrum of industrial heritage, but their true value is shown because they embody and define a place. This distinctiveness ultimately impacts both place and surroundings that are in turn acclimated to each of the other categories. Geographic advantages are the most outstretched umbrella category in terms of industrial heritage because they diffuse all the way down to place specific unique amenities. However, these specific features also operate in reverse, branch out, impact, and influence the other respective categories. There are connections that exist under the broadest and narrowest of circumstances cultivated by industrial heritage. Unique amenities can be intertwined amidst geographic advantages, business clusters, and institutions. The categories of industrial heritage stand up because they are a linked representation of scale. This linkage allows the narrowest of the group to maintain a relationship with the most expansive and cover everything in between. In this

fashion, each category remains united through industrial heritage. Unique amenities show a multitude of roles, but they must be place specific defining features.

4.7 Category Summary

Industrial heritage is the result of place specific, defining changes that played out in the spaces of landscape and environment over time. This process is present in each of the described categories and their respective Rust Belt contexts. Defining these categories simplifies a complex resource providing a basis for local assessment. Geographic advantages are a part of the local framework. They encompass nearby surroundings, consisting of linking features that despite their existence may be difficult to grasp. Business clusters represent a valuable economic background. This background operated as a part of organized industrial life showing the extent and diversity of industrial heritage. Institutions, another part of industrial life, either exist in the local context or can be added to it while being a representation of society and a means of heightening awareness for the value of industrial heritage. Unique amenities are a narrow, but useful category. They cover a broad range of distinct local features that are specific to place; but they do not necessarily need to be the most distinguished. These categories provide a discernible representation of a slowed process that defined the Rust Belt and the evolution of an industrial heritage. Each category offers a basis from which to grasp industrial heritage so it can be used in determining valued local assets.

4.7.1 Industrial Heritage Category Definitions

- **Geographic Advantages** - Geographic advantages are the broadest category consisting of geographic features that make up a local framework, but also encompass nearby surroundings consisting of linking advantageous features that exist in the landscapes and environments of industrial heritage.
- **Business Clusters** - Business clusters represent a valuable grouped economic background that operated as a part of organized industrial life showing the renewal, extents, and diversity of industrial heritage.
- **Institutions** - Institutions assume a new use or carry out an original purpose through existing as part of a local context, acting as a rooted representation of a society's industrial heritage, and a means of heightening awareness for the value of the resource.
- **Unique Amenities** - Unique amenities are the narrowest and most place specific classification acting as a blanket default category of industrial heritage referring to the useful broad range of distinct local features that frame a location as part of a larger network through accumulated regional heritage.

4.8 The Industrial Heritage Mechanism

The defined categories of industrial heritage were meant to provide an understanding of a diverse resource. Each category is a representation of the industrial influence that created the Rust Belt setting. However, the categories like industrial factories are a smaller part of a larger network. In this case, the categories were developed as part of a larger assessment mechanism that determines existing industrial heritage assets. The industrial heritage categories,

once defined and understood, function as part of the devised mechanism. The categories offer a strong basis from which to assess the value of industrial heritage assets. They define the industrial heritage of the Rust Belt from different perspectives as well as scales. Such a distinction is necessary because industrial heritage is a dynamic resource, constantly in a state of flux, lending itself to a multitude of categories. These categories, like industrial heritage, span the region in the physical sense and also exist in the cultural sense as part of a boundless heritage landscape. All the categories represent industrial heritage through the landscape and the environment. The categories serve as an interface between people and place in the sense of the landscape; and in terms of the environment, are measurable in the architectural sense (Fairclough, 2006). These qualities confirm that industrial heritage in the physical environment and mental landscape can reside at both regional and small-town scales. The Rust Belt region, and the Mon Valley in particular, were altered by industry, which today persists in the form of industrial heritage. This heritage is a workable resource that overlaps the stated areas and permeates each of the described categories of geographic advantages, business clusters, institutions, and unique amenities. In the case of the Rust Belt, the need arises for a means of determining and viewing assets in terms of the value of industrial heritage. Since industrial heritage as a resource is difficult to classify, multiple defined categories were required by the mechanism to provide various perspectives as part of assessing value.

The created Industrial Heritage Mechanism (IHM) functions with two parts joined by a linking framework. The first part is the industrial heritage categories that were defined to deliver a streamlined insight into an intricate resource. The second

part is a town profile that uses the heritage categories, allowing the mechanism to evaluate industrial heritage assets. The IHM will be put to use in the next chapter through the creation of town profiles for the Mon Valley towns of Braddock, Monessen, and Brownsville. However, before this, a mechanism framework was necessary to link insight to assessment. This linking framework portion of the mechanism is rooted in the same context and defined by the same processes that led to the creation of the industrial heritage resource and its remaining assets. The process that links and directs an understanding to an assessment operates within the context of the physical environment and the more abstract heritage landscape. The IHM creates a symmetrical connection centered on process and context. The IHM pieces that cultivate insight and generate asset inventories of industrial heritage achieve this symmetry only when they are subject to, and linked by the same context and processes [See Table 3]. Any aspect of industrial heritage that pertains to Rust Belt or Mon Valley small towns will have a lasting impact on these contexts. The four IHM categories provide insight into a complex resource consisting of material evidence, a social record, and an intrinsic quality. The setting of landscape and environment is the background or canvas upon which Fairclough's (2006) space, time, and change process constantly plays out. Space and time induce change which shapes and reshapes the industrial heritage resource and its accompanying assets. In terms of industrial heritage, the process depicted as physical evidence, social record, and the intrinsic quality create local assets. All of these are important factors from which to draw industrial heritage. *Physical evidence* refers to the tangible examples of industrial heritage that exist. The *social record* refers to the distinct way of life created and altered over time by industry. Lastly, the *intrinsic quality* references a unified bigger picture value. This quality

covers the changing evolution of a place and its relations to its own surroundings as well as those within a wider context. These elements created the experiences and perceptions of industrial heritage that were originally broken down into the assessable categories.

Industrial Heritage Insight	Environment / Landscape	Process	Environment / Landscape	Town Assessment Profiles
IHM Categories	Evidence	Space	Evidence	Case Study Town
Geographic Advantages Business Clusters Institutions Unique Amenities	Social Record	Time	Social Record	Determined Industrial Heritage Assets
	Intrinsic Quality	Change	Intrinsic Quality	

Table 3. The IHM Linking Insight to Assessment

The IHM categories compile industrial heritage assets appearing as part of the environment and the landscape. The process that creates industrial heritage induces change that in turn alters the ensuing assets that appear as evidence, social record, and intrinsic quality.

The IHM takes into account defined industrial heritage categories resulting in town profiles. In terms of industrial heritage, these town profiles determine a place's valuable assets that have, or already have the potential to play a role in the revitalization process. The analysis criteria of each town profile consists of the categories covering existing town assets viewed in terms of the value of industrial heritage. These assets are evaluated as: *Geographic Advantages*, *Business Clusters*, *Institutions*, and *Unique Amenities*. The chosen Rust Belt case study towns in the Mon Valley operate within the same confines as the IHM; with their respective environments and landscapes subject to change influenced by industry. The town profiles created within this context value local assets that are also subject to the same processes. These assets in need of categorization add to the experience and perception of industrial heritage. The next chapter will focus on the

IHM category use in generating town assessments for Braddock, Monessen, and Brownsville. These assessments are meant to provide the building blocks of revitalization efforts that take advantage of the value presented by each town's industrial heritage.

Further application of the Industrial Heritage Mechanism is demonstrated in Chapter Six by using each town's determined assets as part of place-specific revitalization strategies. Through its defined categories the IHM contributes a new point of view when determining local assets. Local assets can now be effectively evaluated through the lens of industrial heritage. The examples of Chapter Four help to identify characteristics of industrial heritage while providing development ideas and revitalization strategies that make use of these same characteristics. These examples are successful representations of the very same categories that the IHM uses for assessment. The Chapter Four examples, such as Emscher Park, made use of their own industrial heritage assets. The categories define and classify what these places had and make it applicable to what the Mon Valley possesses. The insight of these ideas and the IHM's evaluated assets of Mon Valley small towns can create successful revitalization plans that value the industrial heritage resource. The mechanism is a categorical device and evaluation lens which gives context to a created local assessment. The concluding product is a means to value industrial heritage through its own contributing factors, leading to small town revitalization.

Chapter FIVE

Industrial Heritage Assessment

5.1 Building an Industrial Heritage Profile

Industrial heritage as a resource is the byproduct of industry that once influenced nearly every aspect of life in the Rust Belt. This means industrial heritage can be found within a wide variety of forms [See Figure 23]. Industry overlapped physical and mental landscapes and at the same time, managed to exist on both social and economic terms. While this was occurring, an industrial heritage was forming that would remain long after local industries had waned. The continued accumulation of industrial heritage would outlast industry, remaining within the various contexts that had once been industrial creations. These processes spanned the Rust Belt region, but Pennsylvania's Monongahela River Valley is one location in particular that developed an abundance of industrial heritage. The economic and social plight of these former industrial small towns has been largely blind to the value that still resides in industrial heritage. Mon Valley towns can be viewed through a lens of industry as the primary force that allowed the towns to take shape. A new means of assessing this industrial heritage is required as it is most often difficult to see and interpret.

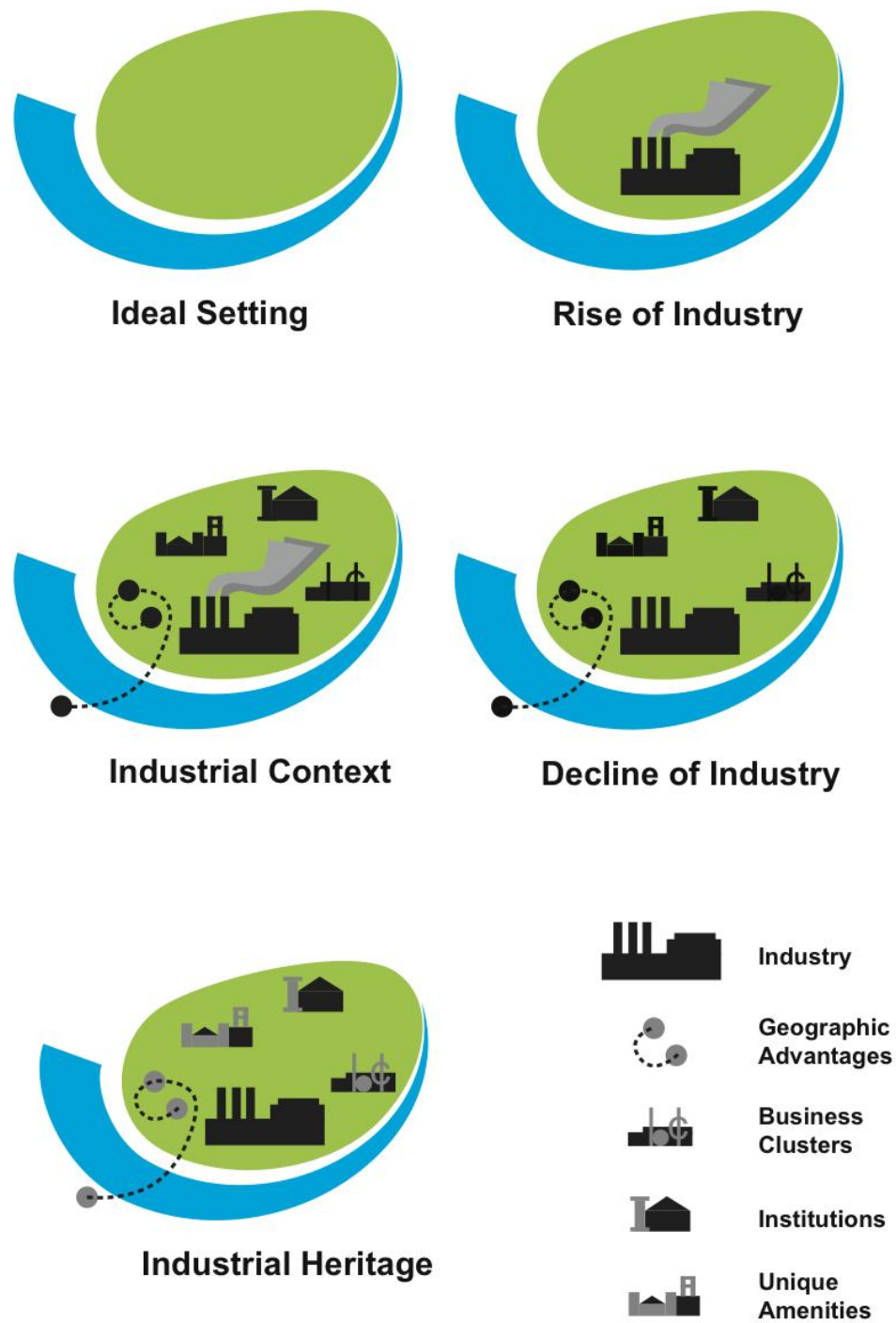


Figure 23. Industrial Heritage Creation Sequence

The Industrial Heritage Mechanism (IHM) is a means to evaluate existing industrial heritage assets. The mechanism shares the context of industrial heritage with the locations it seeks to analyze. Each small town in the Rust Belt and specifically in the Mon Valley displays an extensive industrial past that has reached a crossroads. The industrial histories of these places have all seen wide scale change, resulting in an accrued industrial heritage. If it can be evaluated, this present industrial heritage is a useful revitalization resource. The IHM begins this evaluation by providing heritage categories and a unified context of both insight and assessment. The industrial heritage categories are visible within the context provided by small towns as well as supplied by the mechanism. The completed mechanism framework illustrates this context through the relationship between the industrial heritage resource and the processes of its establishment. The industrial heritage categories and the IHM itself were built around their shared context. Rust Belt small towns also happen to be built around such contexts and therefore are subject to the same process that creates industrial heritage. The industrial heritage categories take a dynamic resource and provide a new viewing lens. The landscapes and environments of these places have seen consistent change alongside an accumulation of useful assets. These remaining assets are the defining characteristics and features that remain tucked away across a multitude of industrial landscapes.

The IHM uses the industrial heritage categories for the evaluations of the chosen case study towns. Braddock, Monessen, and Brownsville are all in need of revitalization and all possess industrial landscapes filled with potential, but untapped resources. The established material evidence, social record, and intrinsic quality of

industrial heritage are present in the form of measureable local assets. Assets are present in the selected towns in various stages with some being more readily adaptable than others. For instance, some of the examples already have an established direction in terms of revitalization efforts. Others hold the potential to provide such direction or be a part of one. The mechanism is used to evaluate all of these existing assets, breaking them down through defined categories of geographic advantages, business clusters, institutions, and unique amenities. Each category represents a different perspective from which to view industrial heritage, but all are necessary parts of a complete inventory. Any new perspective on industrial heritage has to be viewable from different angles to widen the field of vision of a complex resource.

The Mon Valley towns of Braddock, Monessen, and Brownsville share an industrial past and are used to demonstrate the method for assessing the value of their industrial heritage. The presented categories are characterized by an understanding of the whole town in relation to its surroundings. This understanding progressively zooms in from the broader extents of industrial heritage to the more town specific features that grant local distinctiveness. The approach of using the IHM to evaluate industrial heritage in the chosen small towns is meant to build a foundation capable of generating revitalization strategies that value industrial heritage. These assessments of useful industrial heritage resources work to formulate town profiles that provide direction for revitalization efforts.

5.2 Braddock Town Assessment

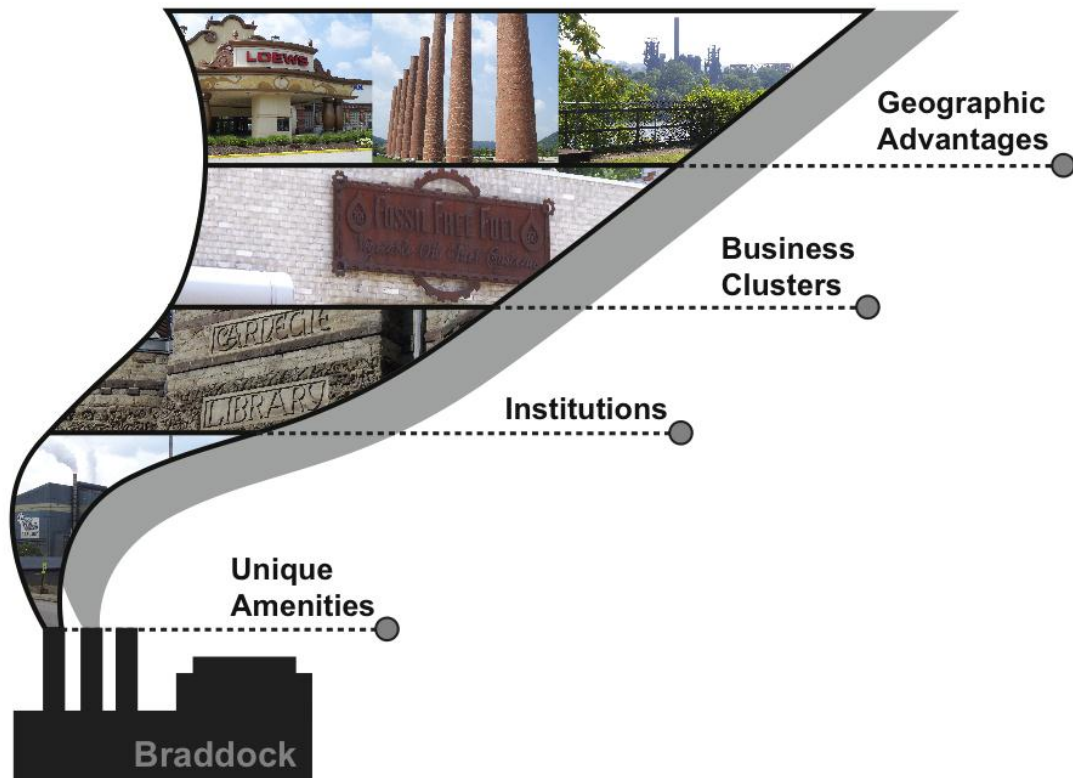


Figure 24. Montage of Braddock Industrial Heritage

Braddock, Pennsylvania is home to a variety of assets that can be gauged in a quality sense to industrial heritage. The town of Braddock has declined with the demise of the U.S. steel industry. Despite this hardship, it bears industry as a defining town characteristic. The site of Braddock is probably most well-known for its pre-industrial history through its role in the French and Indian War. Since then, the town has taken on an industrial dependency. This dependency subjected the

town and its industrial heritage to the changes brought on by the rise and fall of local industries. The remainder of Braddock's industrial heritage is illustrated through its local properties and relationships to its immediate surroundings. The town's functioning steel mill remains as the last and largest looming physical reminder of industrial heritage. The assets of Braddock include the operational remains of a steel mill, a town spanning business/commercial avenue, local community institutions, and close proximity to the city of Pittsburgh. All of these industrial heritage assets developed over time along with the town.

Industrial Heritage Insight	Environment / Landscape	Process	Environment / Landscape	Town Assessment Profiles
IHM Categories	Evidence	Space	Evidence	Braddock
Geographic Advantages	Social Record	Time	Social Record	Past Industrial Links
Business Clusters	Intrinsic Quality	Change	Intrinsic Quality	Braddock Avenue
Institutions				Braddock Redux
Unique Amenities				Edgar Thomson Works

Table 4. IHM Town Profile Assessment for Braddock

5.2.1 Geographic Advantages

Braddock is a linear town along the Monongahela River centrally located around other sites. The geographic advantages of Braddock are largely defined by its close proximity to Pittsburgh, the closest city with a population of over 50,000 people, located only 8 miles away. Braddock and its immediate surroundings fit the category as part of a larger industrial network that centers on Pittsburgh. The geographic advantages present for Braddock can be construed as not readily visible. The once apparent linkages associated with Braddock were seemingly severed when the industry diminished. Some links remain, but can be challenging to see as they resemble what could be referred to as industrial breadcrumbs. The value of industrial heritage by way of geographic advantage lies in the greater whole

on a place specific scale. The broken industrial links or pieces are still present and subtly demarcate the industrial landscape.



Figure 25. Carrie Furnace – Rankin, PA.
(Bastin, 2011)



Figure 26. Homestead Smokestacks – Homestead, PA
(Bastin, 2011)



Figure 27. The Waterfront – Homestead, PA
(Bastin, 2011)



Figure 28. Kennywood Park View From Braddock – West Mifflin, PA.
(Bastin, 2012)

Though Braddock is considered part of a geographically broken piece of industrial heritage, its primary geographic advantage is its location in relation to Pittsburgh. Near the Braddock area is another former mill site also located along the Monongahela River. The site of Homestead today is now known as *The Waterfront*, a retail complex built over the former site of the Homestead Steel Works [See Figure 27]. *The Waterfront* operates as a business cluster with little remnants of the former steel works. What does remain includes a pump house, a crane, and a set of smokestacks on the site of *The Waterfront* [See Figure 26]. The Carrie Furnace #6 and #7 are blast furnaces that stand in nearby Rankin as part of the planned Homestead Works National Park [See Figure 25]. The implied connections between these sites are important with the industrial mill remains presented by Braddock, Homestead, and Rankin all at one time part of the Carnegie Steel Company that later became U.S. Steel. These links can be pieced back together if the trail of industrial breadcrumbs is followed. Lastly, Kennywood Park needs inclusion as a geographic advantage because it stands over the area as a sort of industrial adjunct [See Figure 28]. The park is a popular regional attraction located in the city of West Mifflin and is one of two amusement parks in the National Register of Historic Places. The park was built for working-class leisure beginning as a trolley park in 1898 (Kennywood.com). There is potential to mend and solidify Braddock's geographic advantages into a large Pittsburgh area industrial heritage park. Individually, Braddock also has the potential to play off of its surrounding geographic advantages because of existing past and present links. These industrial breadcrumbs lie within close proximity to the city of Pittsburgh making it possible to see the ties of industrial heritage. Braddock's geographic advantages make it possible to give direction to these ties of industrial heritage as well as show the

remains of ties that once existed. In review, Braddock has the apparent geography of a small steel mill town that once operated as part of a larger network on a much superior scale.

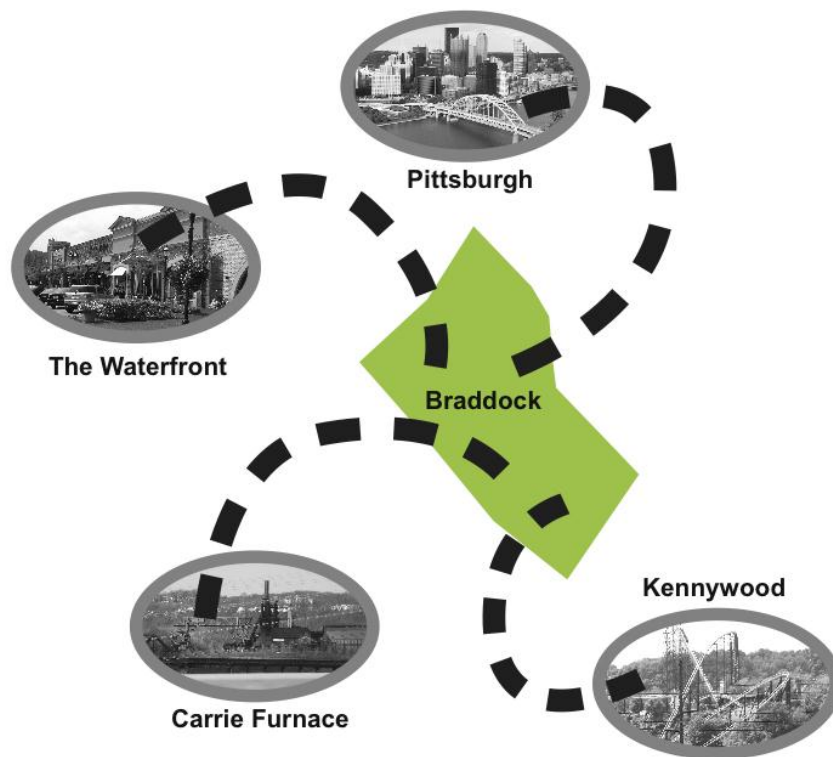


Figure 29. Braddock Geographic Advantages

5.2.2 Business Clusters

The business clusters of Braddock are a reflection of industry's ability to encourage new outlets of further economic growth. The common clustering associated with business districts developed along Braddock Avenue. Braddock Avenue's business district became an economic addition, evolved into a part of the town's foundation, and successfully functioned alongside its heavy industry

counterparts. The bulk of Braddock's industry was located along the river with its business center behind the waterfront. Braddock Avenue was once a thriving business district that ran parallel to the Monongahela River and through the center of town during the steel industry's highpoint. Today, much of Braddock Avenue is vacant, but it is nonetheless home to several businesses and eager for new use. The composition of the avenue is made up of scattered concentrations of buildings. The street has businesses and open properties spaced out along other parcels and parking lots. The collection of properties located on Braddock Avenue could still be seen as unique amenities if not for the diverse set of new uses brought on by some tenants. Instead they show the adaptability of the unique amenity category as well as the renewal often associated with business clusters.

One of the town's new goals is to make use of these properties by bringing in artists, designers and green businesses to Braddock (Brown, 2010). Some local businesses have started to settle into these properties. These businesses range from a shop known as Fossil Free Fuel that turns used vegetable oil into biodiesel fuel, to a custom reclaimed wooden furniture warehouse called Roadburne Furniture that operates from an abandoned Chevrolet dealer [See Figures 30-32]. Next to the furniture shop is Unsmoke Systems Artspace, an old Catholic school renovated to house artist live-work studio space [See Figure 33]. Fossil Free Fuel came to Braddock in 2007. Over the past five years, diesel engines for around 200 privately-owned cars have been converted to run on vegetable oil. Since then, the company's founders have created Optimus Technologies (out of Pittsburgh) to focus on auto conversions in order for Fossil Free Fuel to continue working on the collection and distribution of used cooking oil. Fossil Free Fuel has agreements in

place with several local restaurants to retrieve their used cooking oils. The ultimate goal for this business is to become more widespread and develop as part of the Braddock Biofuels Block intended to be a regional biofuels hub located at the base of the Rankin Bridge (Jones, 2010).



Figure 30. Fossil Free Fuel
(Bastin, 2012)



Figure 31. Fossil Free Fuel Cooking Oil Drums
(Bastin, 2012)



Figure 32. Roadburne Furniture
(Bastin, 2012)



Figure 33. Unsmoke Systems Artspace
(Bastin, 2012)

The business clusters of Braddock Avenue represent part of a broader scope of industrial heritage within the town. Braddock Avenue is a business cluster for the town because it contributed to the re-organization of the industrial way of life. One of the premises of the business cluster's contribution to the value of industrial heritage is its ability to develop beyond the mill or factory. Braddock Avenue is an example of that capability. Braddock was once a mill town that housed a business cluster along its center street. While the development of business clusters in Braddock has quieted in the wake of the industrial decline, it continues to strive for regeneration. What remains are components of the town's heritage tied to its industrial beginnings which serve in creating additional economic outlets. From the industrial heritage perspective, Braddock Avenue is Braddock's business cluster created from a broad and steady industrial heritage that enabled the capability to accommodate new businesses.



Figure 34. Braddock Business Cluster Development

Braddock shows the economic spatial patterns of industry that go beyond the traditional mill. To represent this pattern Fossil Free Fuel is juxtaposed with Edgar Thomson Steel Works.

5.2.3 Institutions

Braddock's institutions reveal differences in age as they function alongside one another. The industrial context of Braddock's heritage is what remains unchanged allowing for both old and new institutions to be utilized in diverse capacities. Braddock's institutions accommodate social activity created by the patterns of industrial heritage as a result of time and industrial settings. Braddock is home to the nation's first Carnegie Library, an institution with the strongest direct ties to the town's industrial heritage [See Figure 36]. The library holds such strong industrial heritage and institutional ties to the town of Braddock because it was established by Andrew Carnegie, who also provided Braddock with its most unique amenity. Andrew Carnegie is largely responsible for Braddock's status as a one-time industrial center, but his widespread philanthropic endeavors are also important. Carnegie had a history of funding projects such as public libraries throughout countries like the United States, United Kingdom, and Canada. The Carnegie Library, an example of Carnegie's philanthropy, is a Braddock institution with an extensive history that runs parallel to the town. Older institutions such as this library are another example of industrial heritage developing in the social realm while remaining steadfast as the town itself changes. Both the place and the institution are usually subject to change in an industrial setting, but the Carnegie Library has strong ties to industrial heritage that root it in the Braddock context. At the same time this status allows it to exist outside the realm of heavy industry.

Another of the town's institutions, Braddock Redux, is a relatively new institutional asset with goals that ultimately lie with the betterment of the community [See Figure 35]. Braddock Redux was established out of an old church to foster

community action, collaboration, and support. The organization works regularly to draw community and outside interest by providing opportunities for local youth, and preserving Braddock's built and natural environments. Braddock Redux is concerned with Braddock's sustainability by providing avenues for enhancing career skills as well as activities for teens and seniors (BraddockRedux.org). This organization's quarters within a reused old Presbyterian church has helped strengthen its roots within the town's industrial context. This church turned community center, spawned a summer jobs youth program in urban agriculture, the arts, media, literacy, and entrepreneurship. Going even further, Braddock Farms, a result of the youth program and the Redux organization, grows organic produce on ten acres of reclaimed urban land to provide vegetables to local restaurants (Braddock 15104.cc) [See Figure 37]. The process of becoming part of a place is one way that institutions operate within the confines of industrial heritage. The context of Braddock is always changing like any town, but the context of the town's industrial heritage never changes in such fashion. Rather, it remains relatively the same while holding the capacity to assimilate further heritage. The point of view towards industrial heritage can change with time, but this can also aid a new use within an industrial landscape. The assimilation is visible through the context, connections, and use of the Braddock Redux institution. Braddock Redux is a new local institution that has planted itself in an industrial setting within a structure not usually associated with industry, but still a part of a common industrial heritage. Seeming opposition to the industrial underscores a newly created symbiotic relationship in an industrial setting. The resulting tension of this relationship embodies the important character change aspect that can occur with institutions as

their uses change. Braddock's context possesses industrial heritage that permeates the town thus making such renewal efforts possible.



Figure 35. Braddock Redux Community Center (Bastin, 2012)



Figure 36. Carnegie Library (Bastin, 2012)



Figure 37. Braddock Farms Site with Edgar Thomson Steel Works (Bastin, 2012)

The Carnegie Library and Braddock Redux are two institutions that function alongside Braddock's changing context. The old Presbyterian church which houses Braddock Redux is located in the historic center of town directly across the street from Braddock's other notable institution, the Carnegie Library [See Figure 38]. Their proximity to one another creates a certain dialogue that further illustrates the differences and similarities of old and new institutions through their contrasts in creation and overlapping stances. Braddock Redux is an example of a new institution that planted itself within the industrial heritage of the town's altering conditions. The Carnegie Library is a little different in that it was already an established and ingrained piece of that heritage. The Carnegie Library as an institution has the ability to heighten awareness for industrial heritage while Braddock Redux had to create this ability by taking advantage of the one constant element within the town's changing context.

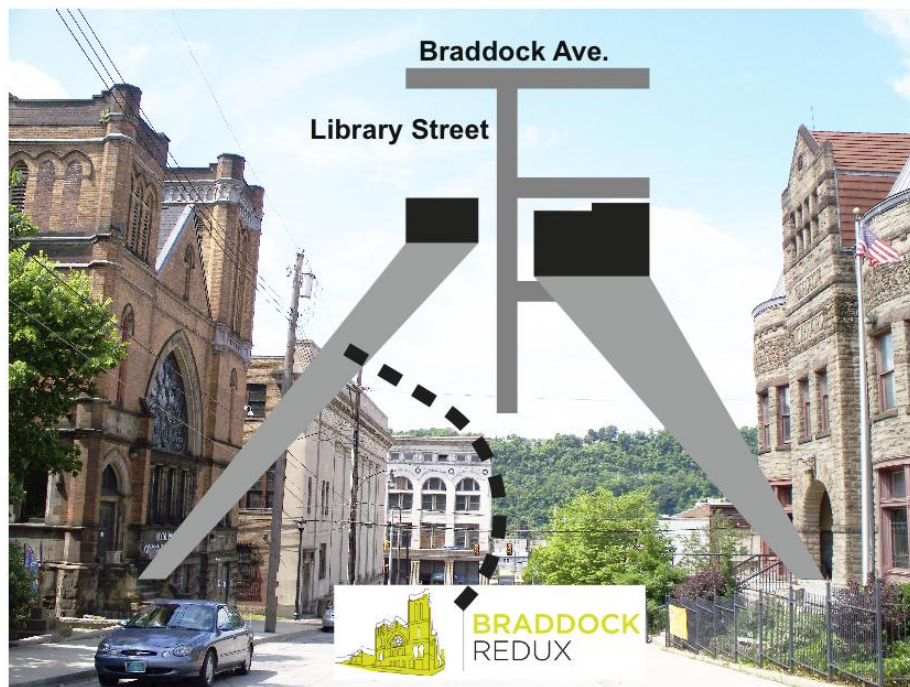


Figure 38. Braddock Institution Formation
The institution dialogue along Library St. is shown between Braddock Redux and the Carnegie Library.

5.2.4 Unique Amenities

Braddock possesses one of the last functioning steel mills in the Mon Valley. This gives it a valuable industrial heritage resource which validates that small towns can still hold onto nodes of industry. The Edgar Thomson Steel Works is Braddock's most prominent unique amenity [See Figure 39]. Presiding over the one-time battlefield of Braddock, Andrew Carnegie's mill is largely responsible for Braddock's status as a one-time industrial center. After a trip to Europe, Carnegie decided to adopt the Bessemer process, known for inexpensively mass producing steel, for the first time in the United States. The result was the construction of a Bessemer plant that defined the town of Braddock while setting the stage for the town's industrial legacy. The single mill complex covers a large riverfront land area along the Monongahela River. It was once the industrial heart of Braddock and remains steadfast in serving as the town's industrial heritage epicenter. Active since the late nineteenth century, the mill's workers were a part of the Homestead strike in 1892, one of the most serious labor strikes in U.S. history. The Edgar Thomson Steel Works in 1994 was recognized by an engineering society called ASM International as one of the society's recognized historic landmarks since it played a prominent role in the development of metals and other engineered materials (ASMInternational.org). Braddock's most visible unique amenity today stands as a reminder of the town's one-time status within the larger Mon Valley industrial network that operated up and down the Monongahela River.



Figure 39. The Edgar Thomson Steel Works
(Bastin, 2011)

The Edgar Thomson Steel Works is the defining landscape element that provides distinctiveness to Braddock as its most easily celebrated unique amenity. Industrial decline, and the mill's own reduced capacity however, have caused its status to wane. Despite this reduction, the Edgar Thomson Steel Works remains in use and still looms over much of the town and its surroundings as a nearly silent, yet still visible force of industrial heritage [See Figure 40]. The reduced standing has not lessened its visible impact over the community as the mill appears as an ever-present background element. Unique amenities that define place are what differentiate the location. A "still operating" mill with extensive industrial history is a valuable amenity regardless of the capacity because its presence and resulting aura

is what defines the local character of industrial heritage. Whatever its status or usage, the mill will always be the primary means of maintaining a link to the industrial past of Braddock. The Edgar Thomson Steel Works is a town-specific unique amenity reflective of local culture as well as a much bigger picture.

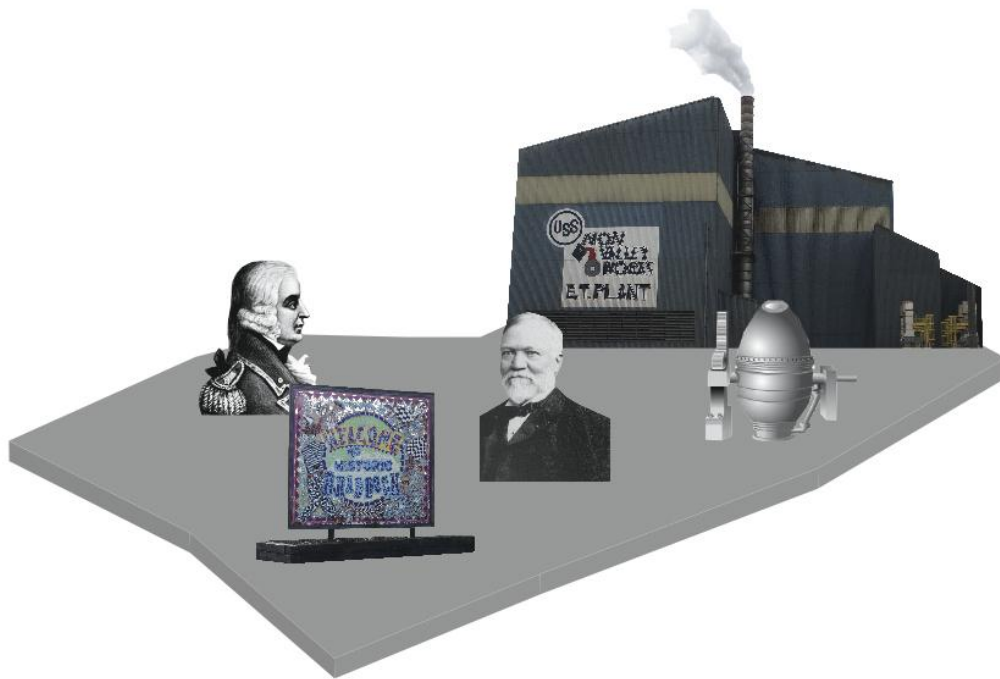


Figure 40. Photomontage of the Elements Contributing to the Edgar Thomson Steel Works as a Unique Amenity
Each image is an important representation of Braddock's past with the Edgar Thomson plant and its influence looming over the collected history.

In contrast to the Edgar Thomson Steel Works, Braddock also retains what could classify as unique amenities of the less celebrated variety. Braddock is home to an abundance of vacant industrial era property capable of supporting new uses. These unique amenities are specific to the Braddock context and represent the town's industrial heritage even though they appear at a much smaller scale compared to the Edgar Thomson Steel Works. The properties have strong potential for adaptive reuse that can allow these unique amenities to field a variety of purposes. The property locations are scattered, but most reside along the waterfront and Braddock Avenue. These new uses in some cases have already started in a variety of forms changing the spaces themselves from unique amenities to the business cluster category. Attempts to make use of lesser-known, but still prevalent unique amenities, are in line with the town's concession that it will never again be exactly what it once was, choosing instead to focus on what it can be next (Braddock 15104.cc). These properties remain as unique amenities of Braddock with the potential to keep that status or take on new roles like those on Braddock Avenue.

5.2.5 Braddock Town Profile

-
- **Geographic Advantages** - The geographic advantages of Braddock are mainly defined by its close proximity to Pittsburgh and broken industrial links to nearby towns reflective of a larger context that subtly demarcates the industrial landscape.
-
- **Business Clusters** - The business clusters of Braddock are a reflection of industry's ability to spur on further outlets of economic growth beyond a mill. The main cluster is located along the town's central street, Braddock Avenue, a collection of properties capable of accommodating diverse new uses already seen through establishments like Unsmoke Systems Artspace and Fossil Free Fuel.
-
- **Institutions** - The institutions of Braddock demonstrate differences in age functioning alongside one another in constant dialogue along Library Street. Braddock is home to the first Carnegie Library and Braddock Redux a relatively new institution. The Carnegie Library was already an established ingrained piece of industrial heritage. Braddock Redux is a new local institution that has planted itself in an industrial setting within a structure not usually associated with industry, but still a part of a common industrial heritage. The Carnegie Library as an institution has the ability to heighten awareness for industrial heritage while Braddock Redux had to create this ability by taking advantage of this heritage within the town's changing context.
-
- **Unique Amenities** - The unique amenities of Braddock are marked by one of the last functioning steel mills in the Mon Valley. The Edgar Thomson Steel Works is Braddock's most prominent unique amenity. This originally constructed Bessemer plant located on the site of a battlefield is the defining landscape element that provides distinctiveness to the town.

5.3 Monessen Town Assessment

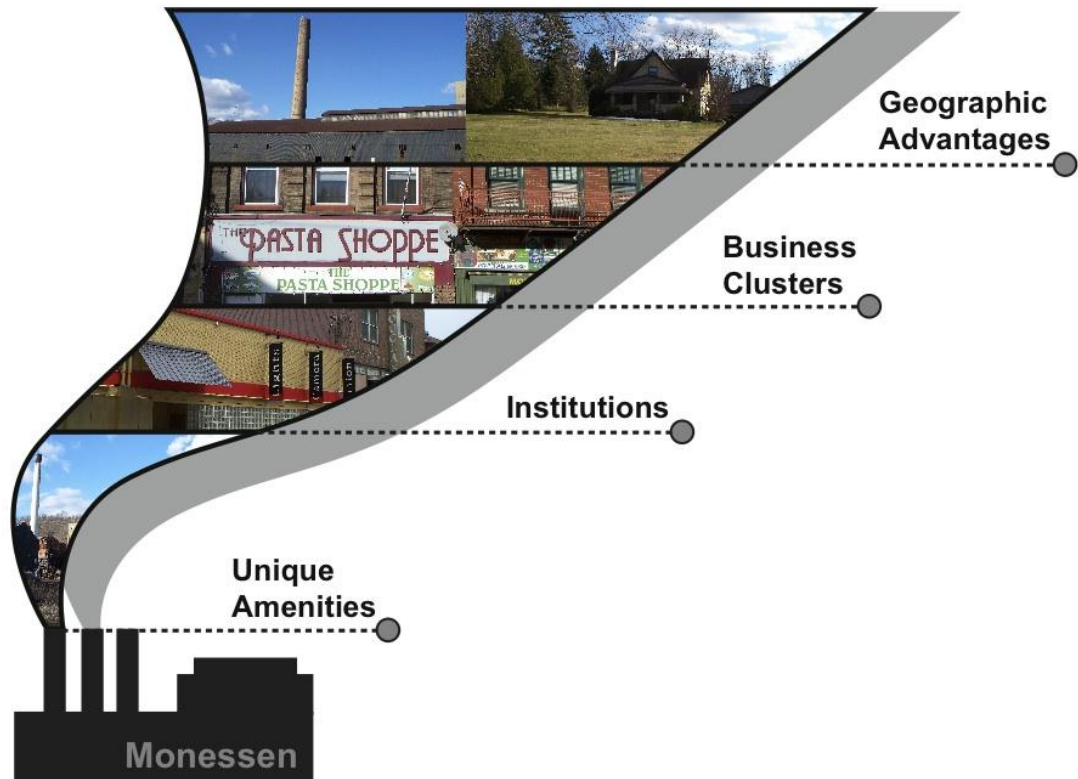


Figure 41. Montage of Monessen Industrial Heritage

The town of Monessen has a relatively short history when compared to other Mon Valley towns. However, Monessen made up for this age gap with a very fast rise to prominence that kicked off with the onset of the twentieth century. Since its founding, Monessen like others in the Mon Valley has seen its ups and downs and is today a struggling Rust Belt location still coping with deindustrialization. The remains of the city's industrial assets hold significant defining value, but their meaning and presence can be difficult to determine. Monessen began as a town

created to accommodate industry, since then, it has never expanded from this scope, only in territory. Monessen's remaining assets reflect this lack of a broad scope (Vivian, 2002). The city's industrial heritage offers a sizable industrial waterfront, two major avenues of business, educational institutions, and a separation between the industrial and residential.

Industrial Heritage Insight	Environment / Landscape	Process	Environment / Landscape	Town Assessment Profiles
IHM Categories	Evidence	Space	Evidence	Monessen
Geographic Advantages	Social Record	Time	Social Record	City Shape
Business Clusters	Intrinsic Quality	Change	Intrinsic Quality	Schoonmaker/Donner Ave.
Institutions				Douglas Education Center
Unique Amenities				Waterfront Section

Table 5. IHM Town Profile Assessment for Monessen

5.3.1 Geographic Advantages

The geographic advantages specific to Monessen lie in the city's general shape. Monessen's geography is that of a hill located along a horseshoe shaped bend in the Monongahela River. Monessen, located thirty miles south of Pittsburgh, is relatively isolated on the river bend it occupies. The city's industrial developments were concentrated along the Monongahela River. The portion of the city located behind the river bend at the higher elevation is mainly comprised of residential neighborhoods. Monessen's layout is structured in such a way that separates the upper residential portion from the lower industrial business sections. The clear divide between the social and economic realms of the past and present is still visible today. This geographic divide makes more sense when considering that the city first started with the economic realm along the river that then created a need for housing. The geographic advantage is that the residential section remains

separate, but conveniently accessible since it lies both above and within the city's more economically geared portion. This setup is a clear reminder of the city's original purpose, but still a geographic advantage of industrial heritage in that it allows the mapping of Monessen's local changes to be seen [See Figures 42-44].



Figure 42. Monessen Residences on a Hill
(Bastin, 2012)



Figure 43. Lower Industrial Section
(Bastin, 2012)

Monessen is a primary example of how the geography of small towns can be shaped by industry. The industrial heritage of Monessen, however, does not draw that many geographic advantages from its surroundings. Monessen still maintains regional connections to its neighboring former mill towns. These links to the larger industrial contexts of the Mon Valley are present, but mostly invisible, except for the large number of bridges that connect the towns. These towns (such as Charleroi and Donora) have histories similar to Monessen and their current standing is roughly the same. Monessen and its neighbors, at one time were thriving Mon Valley mill towns that saw their status diminish along with the U.S. steel industry leaving behind a shared industrial heritage. With the city coming to fruition so late in the history of the Mon Valley, Monessen's origin is solely industrial. The city's land

was relatively untouched and ignored until its industrial potential was realized. This quickly led to the development of numerous mills along the city's waterfront.

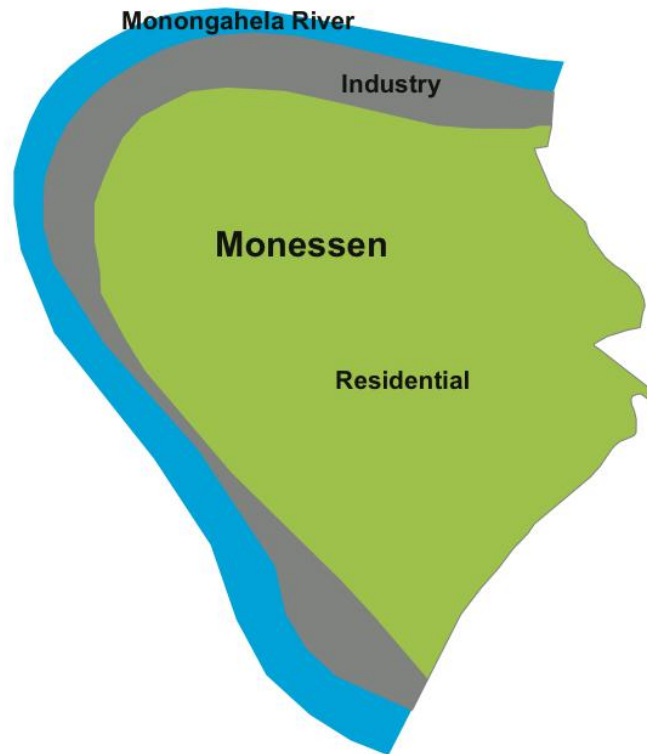


Figure 44. Monessen Geographic Advantages

5.3.2 Business Clusters

Monessen's main business cluster is located on two of the city's earliest streets, Schoonmaker and Donner Avenue which are located behind the sites of past industry. These streets hold scattered building clusters of small restaurants, banks, stores, bars, and other shops. Vacancies remain, but the existing commercial uses reflect the vast number of nationalities that once created a small-scale melting pot within the city. Monessen was home to twenty-seven different

nationalities of immigrants who came to the area in search of work. In doing so, they established themselves into distinct cultural communities throughout the town. “The Bureau of Naturalization figures claimed Monessen made more U.S. citizens out of immigrants than any other city in the country” (Vivian, 2002, p. 68). These ethnic trends are present in the variety of local restaurants and clubs designating the heritage of the Monessen residents that were once attracted by the city’s industry-fueled opportunities [See Figures 45-50]. A reciprocal exchange, Monessen had the appropriate setting for industry and industry needed human capital. The result was an influx of immigrants who brought with them a host of customs and traditions that accrued in the city as well as the Mon Valley. The opportunity to begin a new way of life attracted a great number of European immigrants who chose to leave behind their homeland in favor of a chance at a better life. In some ways, these opportunities were realized, but in others, they fell short. For example, the culture and traditions that were brought along and maintained were part of the success, but the pay and worker treatment was lackluster. The struggle to be treated fairly with fair wages was an ongoing struggle for immigrants. On a positive note, Monessen’s past industrial dependency created an industrial heritage directly related to the diverse ethnicities and traditions brought here by the immigrants. This created an addition to Monessen’s urban fabric in the form of business clusters. Without industry, such a diverse pool of culture would not exist and the city’s business clusters would have developed much differently.



Figure 45. Luchesi's Restaurant
(Bastin, 2012)



Figure 46. The Pasta Shoppe
(Bastin, 2012)



Figure 47. Monessen Italian Club
(Bastin, 2012)



Figure 48. Monessen Ukrainian Club
(Bastin, 2012)



Figure 49. Monessen Slovak Club
(Bastin, 2012)



Figure 50. Monessen Hungarian Club
(Bastin, 2012)

The undertone of nationality played a key role in shaping Monessen's business clusters. A diverse ethnic heritage is one of the byproducts of industry and can affect the formation of institutions. But in Monessen, this impact is much more readily available in its business clusters. Monessen holds distinction as being a mix of many cultures, even among its Rust Belt counterparts. Specific to Monessen, an alternate economic realm developed around a city whose origin was an industrial experiment. Monessen was an ideal industrial setting which enabled local businesses to develop and flourish. The settings of Donner and Schoonmaker Avenue are examples of business clusters which demonstrate the value of industrial heritage that goes beyond the tangible factory. It was Monessen's diverse status as a melting pot that united and solidified ethnic businesses. Monessen owes its variety of ethnicities to industry and its business clusters to those same ethnicities [See Figure 51]. These business clusters are an example of industrial heritage that would not have been possible without the diverse pool of nationalities that industry attracted. These nationalities provided the outlet for industrial heritage to develop, even absent of heavy industry. One thing led to the next as the value of industrial heritage was again illustrated in a non-factory setting with its roots in industry. The ethnicities and culture present in Monessen indicate the wide scope of industrial heritage that can be embraced by business clusters. The organization of industrial life depicted through these business clusters played out on Monessen's streets because of the city's ability to accommodate diversity.

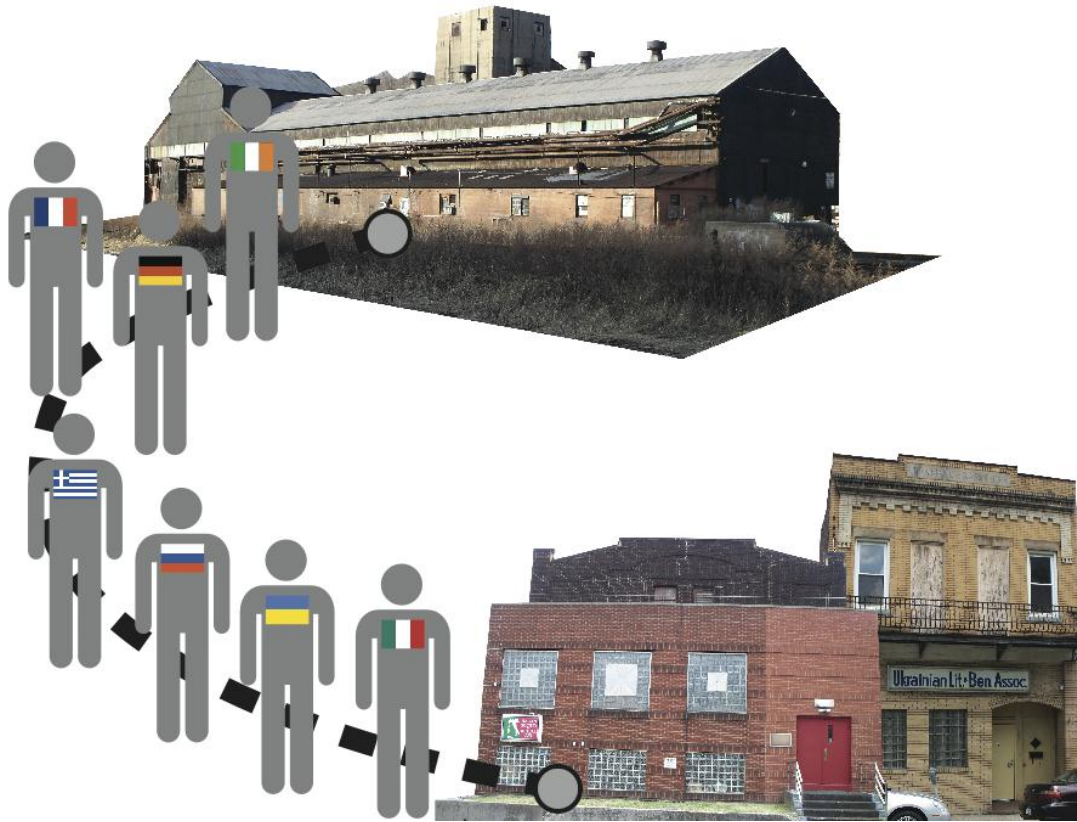


Figure 51. Monessen Business Cluster Development

5.3.3 Institutions

In terms of local institutions, Monessen maintains operational organizations within the city. Monessen, shaped by its industrial institutions, developed a working environment very much bound to place. Today, heavy industry is no longer a prevalent factor in terms of Monessen institutions, but rather the city's industrial heritage relies on other institutional ties that differ from mill history. The only new industry established in Monessen while the mills were still in operation was the city's health center which is now a surviving local institution which houses a variety of local needs. It is located off of Schoonmaker Avenue and is now renamed as the Monessen Municipal Complex. Formation of newer institutions in Monessen reflects

an industrial past and accommodates a range of social activities. Monessen's industrial heritage, in combination with time and the city's setting, allowed a new institution to develop with a focus on education. When industrial institutions faltered, they left behind an ill-equipped workforce to meet the needs of a changing society (Connelly, 2010). Industry built a dependent way of life that fell short of essential educational outlets that would later be required in the Rust Belt's changing social contexts.



Figure 52. Douglas Education Center: The Factory (Bastin, 2012)



Figure 53. Douglas Education Center: Tom Savini Program (Bastin, 2012)



Figure 54. Douglas Education Center: Cosmetology Academy (Bastin, 2012)



Figure 55. Douglas Education Center: Medical Technology Building (Bastin, 2012)



Figure 56. Douglas Education Center
(Bastin, 2012)

Institutions are an integral part of a town's local surroundings. Monessen's industry which created and shaped the city, left behind the groundwork needed for institutions to be placed within these surroundings. The Douglas School of Business, now the Douglas Education Center, managed to make use of this groundwork [See Figures 52-56]. The school found a way to plant itself in the city's industrial heritage and fill Monessen's educational void created by local industry. The Douglas Education Center operates out of Monessen and provides education in computer skills, cosmetology, and makeup artistry, along with developing programs in cinema animation. The trade school mostly occupies one-time vacant properties in downtown Monessen along Donner Avenue. Tom Savini, a nationally known

Hollywood makeup artist, is an instructor attracting young people to the developing school. The Douglas Education Center functions within the context of industrial heritage that was created by the city's steel mills. The opening left behind would transform into a new institution. For Monessen, the educational void created by industry when the steel mills departed, ultimately produced a new educational endeavor.

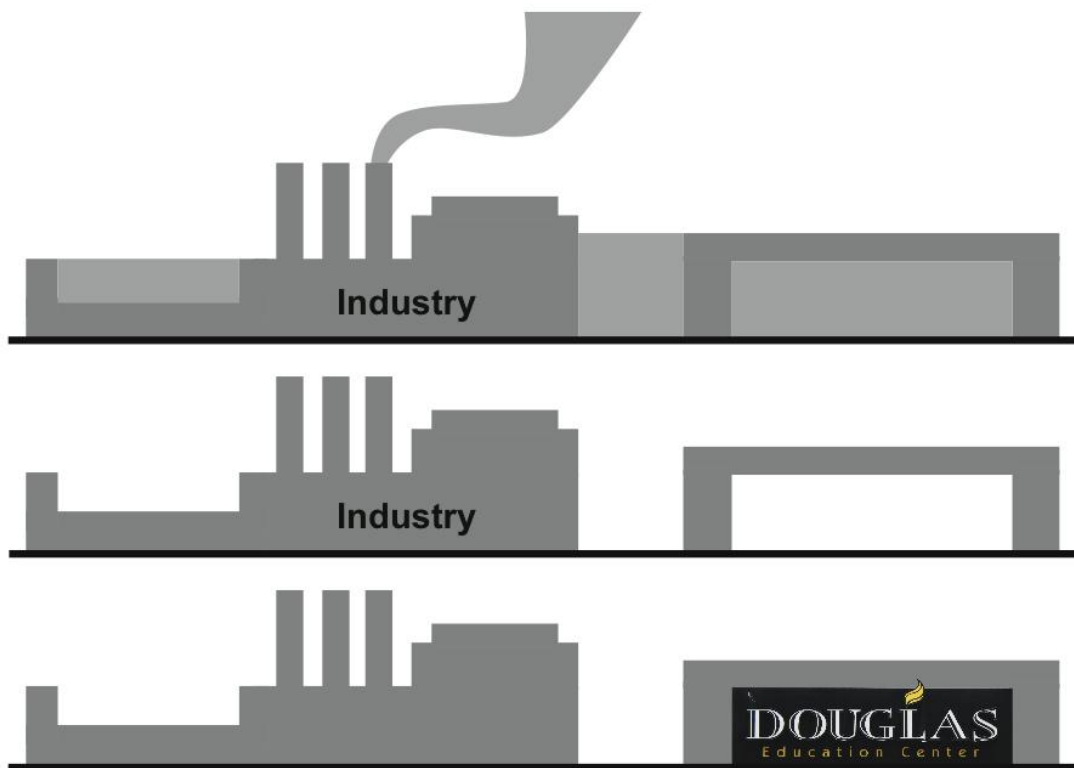


Figure 57. Monessen Institution Formation
The Douglas Education Center fills an educational void left by industry.

5.3.4 Unique Amenities

Monessen's most unique amenity is its waterfront, which has been subject to many changes since the city's inception. Most of what could be considered visible unique amenities are gone such as the remains of Page's Wire. However, one

section of Monessen continues to reveal its visible industrial past which is located at the site of the city's first industrial structure. The presence of these structures is important, but the real prominence now lays in the site itself and its usage history.



Figure 58. Monessen Industrial Remains 1
(Bastin, 2012)



Figure 59. Monessen Industrial Remains 2
(Bastin, 2012)



Figure 60. Monessen Industrial Remains: Tin Mill Site
(Bastin, 2012)

Monessen's shape is derived from its location and is situated along a horseshoe like curve in the Monongahela River. The furthest southern point of the city contains the remains of the Gibsonton Distillery. The westernmost portion of the city's waterfront is now home to the Monongahela Riverfront Industrial Park. Lock and Dam 4 (on the Monongahela River) can be easily seen just below it. This industrial park development was built over what was the original site of the Monessen Foundry and the Pittsburgh Steel Hoops Company later taken over by Pittsburgh Steel. Any elements or physical traces of an industrial past are mostly invisible in this general location. The industrial park at this site consists of several large warehouses and only a couple smaller structures. This complex has businesses such as Santelli Tempered Glass, Westmoreland Advanced Material, and the much smaller Green Energy Business Center. This riverfront development is only a starting point; not every structure here houses a tenant as it employs less than 200 people (Vivian, 2002). Industrial remnants remain at the northern edge of Monessen and are located on a site that accommodated the city's first industry, a tin mill that would later become a Pittsburgh Steel site [See Figures 58-60]. This portion of Monessen's riverfront is the last remaining visible imprint of a past history in heavy industry. This makes it a unique amenity within Monessen's waterfront as the site and its remains are place specific and represent a town built for industry. In terms of a physical factory remnant of industrial heritage, this is the last section standing in Monessen. Next to this site (at the intersection of Donner and 1st Street), is the former location of Page's Wire. The site today is comprised of mostly vacant lots. Alfrey & Putnam (1992) remind us that industrial heritage is best utilized when not separated from the original context. Monessen's unique amenity is the city's once industry heavy waterfront that has changed greatly from its original

context. However, Monessen's waterfront portion still has the strongest psychological connection to an industrial context. The site saw the spatial story of industry play out along its riverbanks. Most of the structures that created Monessen and spurred its success are gone. Nonetheless, its history and remains are an illustration of the exclusive context that frames Monessen's industrial heritage.

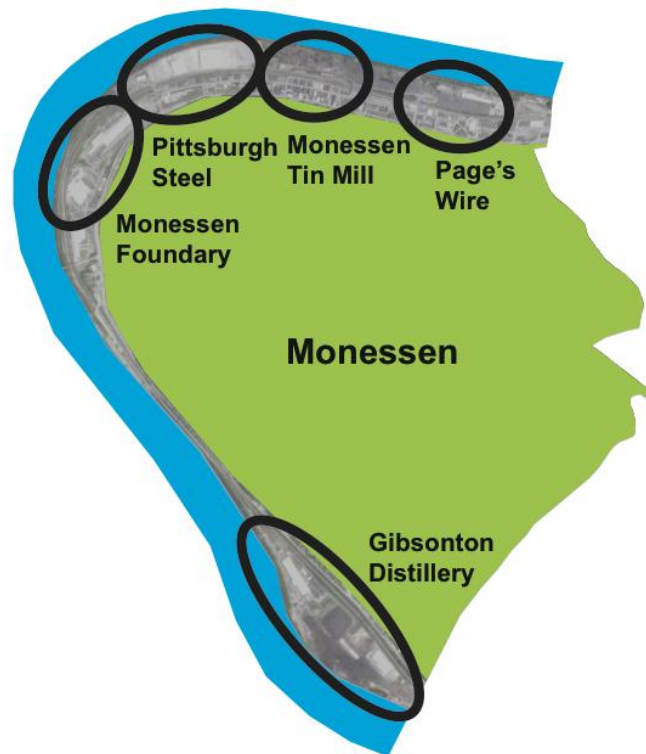


Figure 61. Monessen Waterfront Industrial Sequence

5.3.5 Monessen Town Profile

-
- **Geographic Advantages** - The geographic advantages of Monessen lie in the city's general shape as a hill located along a horseshoe shaped bend in the Monongahela River with a separation of the upper residential portion from the lower industrial business sections. Past links also remain to surrounding former mill towns.

-
- **Business Clusters** - The business clusters of Monessen are located along a bend in the Monongahela River behind the sites of past industry on two of the city's earliest streets, Schoonmaker and Donner Ave. Business clusters in Monessen are a representation of the city's industrial heritage reflective of ethnic trends present in the variety of local restaurants and clubs designating the heritage of Monessen residents that were once attracted to the city's industry fueled opportunities.

-
- **Institutions** - The institutions of Monessen rely on ties that differ from the city's mill background. The Douglas Education Center is a new institution that managed to make use of the groundwork of industry by planting itself in the city's industrial heritage and filling Monessen's educational void left behind by the deterioration of local industry.

-
- **Unique Amenities** - The unique amenities of Monessen are showcased through its waterfront that holds the strongest ties to industrial heritage, offering scenic and recreational potential where the spatial story of industry played out along its riverbanks. Industrial remnants remain at the site, located on the portion once home to the city's first industry. Monessen's waterfront site is a place specific representation of a town built for industry that became a notable city within the steel industry.

5.4 Brownsville Town Assessment

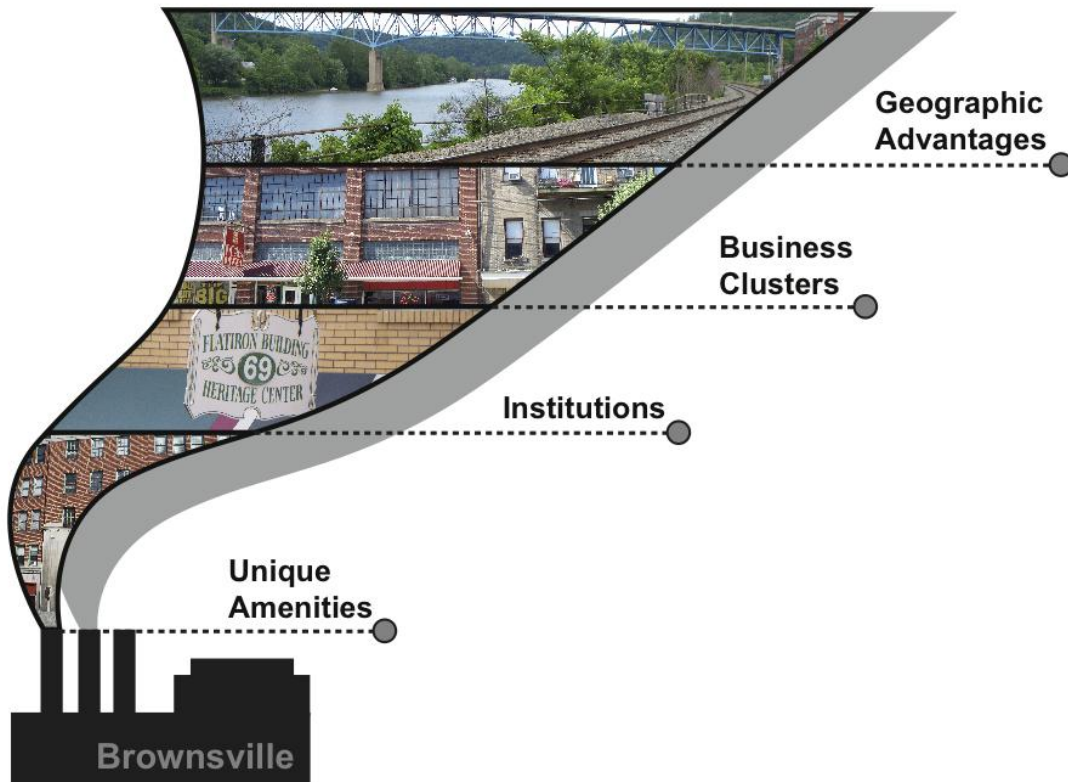


Figure 62. Montage of Brownsville Industrial Heritage

Many assets of the industrial era remain visible throughout the Borough of Brownsville. Most of these are historic in nature and echo to the town's manufacturing period. The variety of these chronologically-layered buildings creates a nostalgic architectural fabric reflective of the town's industrial heritage. Brownsville is a town rich in history offering a plethora of industrial-era structures and sites; namely, two distinct business clusters, a town revitalization institution operating from a local landmark, and perhaps most interestingly, a layered

geographical landscape which trimly embodies its heritage. There is richness to Brownsville's interrelated industrial heritage assets that convey a variety of overlapping stories.

Industrial Heritage Insight	Environment / Landscape	Process	Environment / Landscape	Town Assessment Profiles
IHM Categories	Evidence	Space	Evidence	Brownsville
Geographic Advantages	Social Record	Time	Social Record	Industrial Stratum
Business Clusters	Intrinsic Quality	Change	Intrinsic Quality	Market Street - "The Neck"
Institutions				Flatiron Building
Unique Amenities				Road/River/Rail Features

Table 6. IHM Town Profile Assessment for Brownsville

5.4.1 Geographic Advantages

The town of Brownsville rests on a bluff overlooking the Monongahela River. Since the town's initial layout in 1785, an unusual sequence of urban design has played out which resulted in an accumulation of accrued industrial heritage. From its original framework, the changes undergone in Brownsville are the result of many historic industrial events. Consistent changes to Brownsville from different eras, coupled with a respect for structural preservation, have enabled the borough's cultural ethos to survive. Brownsville's upper portion (located on either side of the National Road that cuts through the town), is comprised of residential neighborhoods. The National Road itself launched a host of other building projects needed for its own accommodation. These unique amenities are intermixed around clusters of newer era homes, several historic homes, and a variety of old churches to name a few.

Connections to Brownsville's surroundings, in the sense of ties to a larger industrial network, are difficult to see. Despite this, Brownsville does display visible connections to its immediate neighbors, West Brownsville and the former Bridgeport. These connections became necessary when Brownsville's combination of location and industrial status attracted the National Road. West Brownsville is straight across the Monongahela River and connected by the Lane Bane Bridge with California, PA directly behind [See Figure 65]. California is home to California University of Pennsylvania which began as a college in 1852 (CalU.edu) [See Figure 64]. The borough of California exists today primarily as a college town. Twenty miles to the southeast of Brownsville is the Eberly Campus of Penn State Fayette, a university branch campus located near Uniontown in Lemont Furnace [See Figure 63]. These schools give the town close proximity to a network of educational opportunities.



Figure 63. Brownsville Surroundings Map



Figure 64. View Towards Cal U
(Bastin, 2012)



Figure 65. View to Brownsville From West Brownsville
(Bastin, 2012)



Figure 66. Overlap of Road, River, and Rail
(Bastin, 2012)



Figure 67. Geography of Road, River, and Rail
(Bastin, 2011)

The geography of Brownsville is one of its greatest assets since its natural features are a living record of sorts for industrial heritage. The traces of heavy industry in the form of mills or factories are not readily seen in the borough, but traces of water-based and coal industries remain. Brownsville's natural and man-made geography is what allows its accumulation of these industry-influenced advantages to be seen. Industrial highpoints shaped Brownsville as the changes to industry brought about new town developments. The industrial heritage of Brownsville's geographic advantages can be summarized by its periods of industrial prosperity which ensued with connections to the Monongahela River, the National Road, and the local railroad [See Figures 66 & 67]. All of these elements are present in and around the town and serve as part of its local geography. Brownsville first rose to prominence because of its ideal natural location on the Monongahela River. The river allowed Brownsville to foster steamships and boat building industries. The town later regained its place by way of the railroad and the coal industry which was essential in supporting the burgeoning steel industry. Brownsville's first period of prosperity was the result of its riverfront site, a natural geographic feature that allowed industries requiring waterways to take off. The second highpoint resulted from the mining industry where the use of coal deposits led to the development of rail lines and coke ovens. In the background, while these industries were shaping the town, the National Road and its accommodations were making further alterations that would stretch into some of the other categories of industrial heritage. The geographic advantages of Brownsville are the town's accrued layers, developed in such a way that its natural assets fueled its own industrial growth and change, thus building a new geographic advantage through amassed industrial heritage.

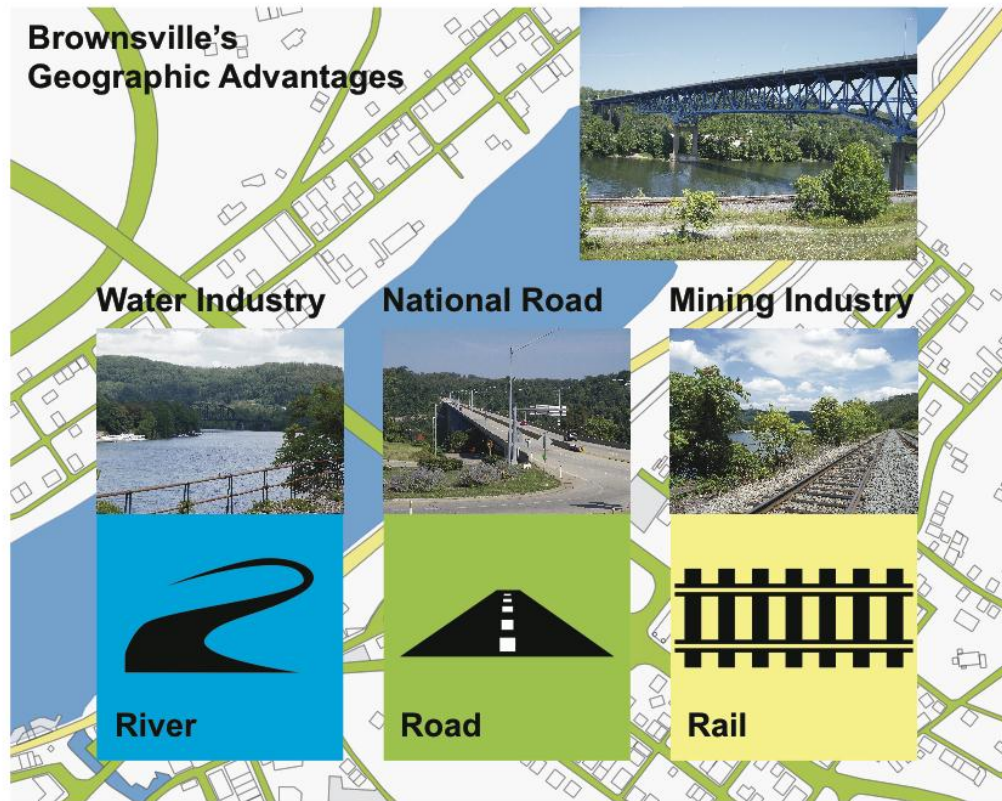


Figure 68. Brownsville Accrued Geographic Advantages

5.4.2 Business Clusters

The grouping of business clusters in Brownsville developed alongside the changing context of the town. Brownsville's business clusters were evidence of how industrial activity can influence an economic realm. Brownsville initially achieved status as an industrial center. The town served as a gateway to the West making it a target destination for the new National Road. This road was completed by 1817 and remains a strong reminder of Brownsville's appeal. This appeal was as an industrial center that attracted a large-scale national project. Brownsville's local industries made the town into a notable destination. The addition of the National Road path was another added advantage and its presence created the need for

some rerouting within the town. This ultimately led to the formation of a new business cluster. The first business district of Brownsville was developed along Front Street running perpendicular to the Monongahela River. The National Road could not handle the steep descent of Front Street. Therefore, a new diagonal segment was created by extending Market Street to the west down the bluff Brownsville resides on. This caused the business district to shift to Market Street. The curve in Market Street that allowed a new business district to develop is located along Lower Market Street which is a section of Brownsville referred to as “The Neck” [See Figures 70-72]. The Neck is the narrowest business district that exists along the National Road (Neccai, 2009). Today, Brownsville has a couple of business clusters of differing character. Most properties along the Market Street section in Brownsville were part of a once active shopping center that currently remains mostly unoccupied. A newer, more active small business cluster continues higher up in the town where the National Road currently cuts through [See Figure 69]. This section appears after traveling over the present path of the National Road that crosses over the Lane Bane Bridge (U.S. Route 40) into West Brownsville. This business cluster is comprised of several small bars and restaurants parallel to the highway.



Figure 69. Upper Market Street Business Cluster
(Bastin, 2011)



Figure 70. Lower Market Street Business Cluster
(Bastin, 2011)

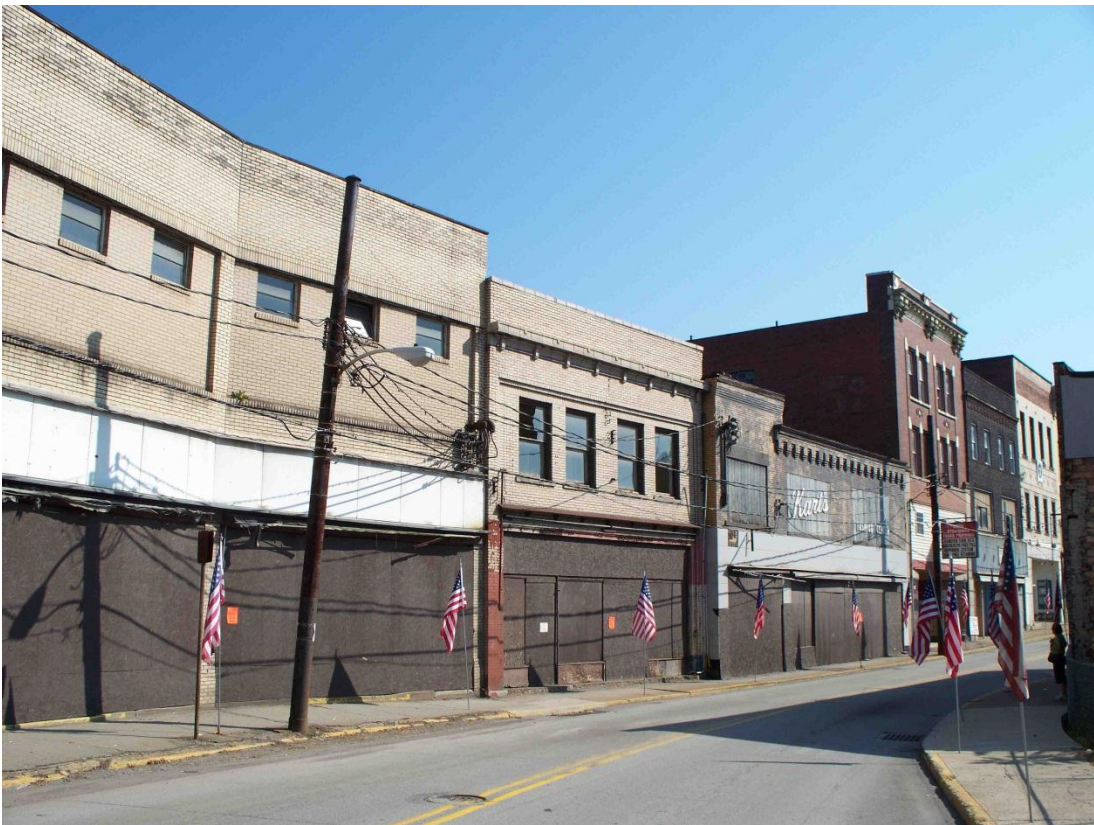


Figure 71. Lower Market Street Business Cluster, "The Neck"
(Bastin, 2011)

Brownsville's location enabled it to grow. Today, the town is a collection of various forms of industrial heritage that have accumulated over the years. The addition of business clusters are the indirect byproducts of industry. Business clusters contributed to the town's growth as its industrial status was being

perpetually redefined. Currently, the Market Street business cluster is a part of Brownsville's culture as well as its industrial heritage. An ideally located industrial center and gateway town attracted the National Road to Brownsville resulting in a reformatted business cluster. The necessary alterations to become a viable National Road option spurred the development of a feasible business cluster. The business clusters of Brownsville embody industrial heritage as a far reaching resource with consequences of creation that can be both intentional and unintentional. For example, the development of the Market Street cluster was originally unintentional and only developed because Front Street was too steep. Without the town's industrial status, the National Road would have most likely gone elsewhere. Without the National Road, this cluster would have lacked any basis to form. Market Street, however, is illustrative of a process that added to the industrial heritage of Brownsville in the form of a business cluster. Ironically, additional rerouting of the National Road (with the 1960s addition of the Lane Bane Bridge over the Monongahela River) made it easier to drive quickly through Brownsville (nearly bypassing the town) which further contributed to its economic struggles.

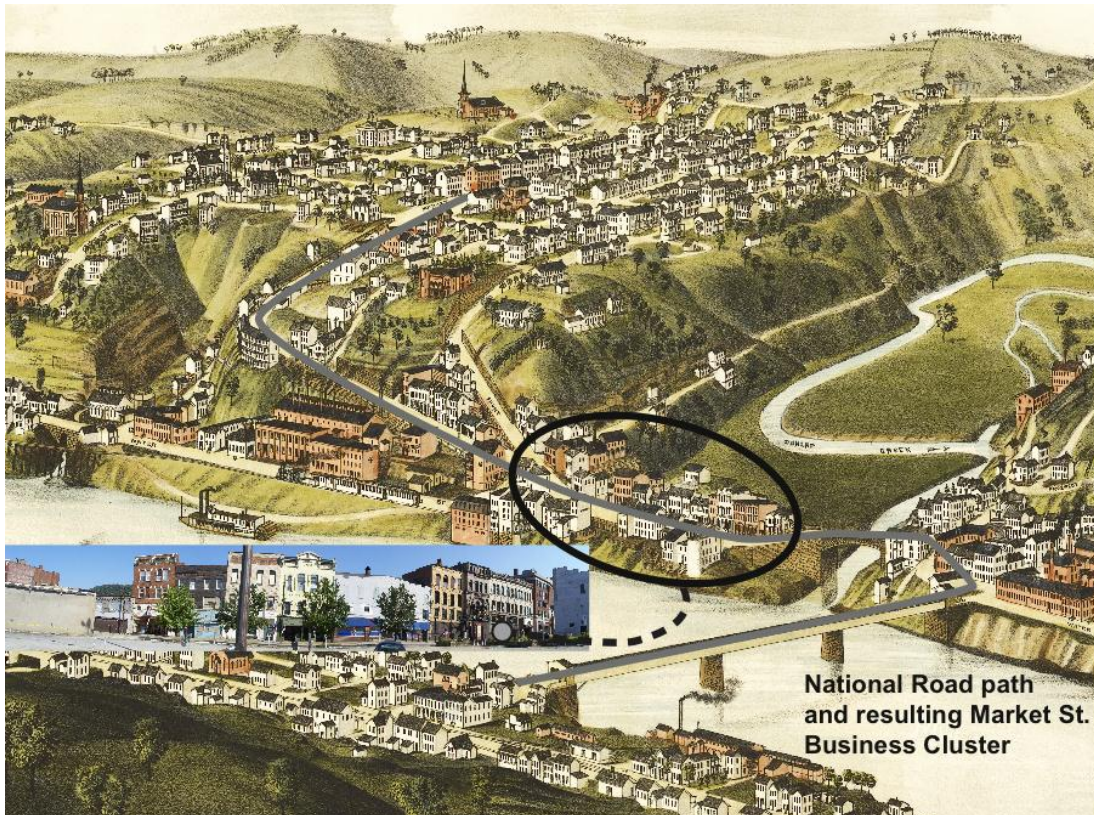


Figure 72. Brownsville Business Cluster Development
The cluster is shown on an 1883 Map of Brownsville.

5.4.3 Institutions

Brownsville's institutions are an example of local industrial heritage despite the town lacking the common industrial archetypes of visible factories or mills. The industrial heritage of Brownsville is within the town and expressed through other artifacts part of local industrial culture. An original commercial structure that dates back to the 1830s, called the Flatiron Building, could otherwise be considered a unique amenity as it is a lasting representation of Brownsville's steamboat era. The building is architecturally interesting and significant because it is one of the earliest known examples of a triangular flatiron design modeled after clothing irons. Today, the building itself has taken on a new use that has transformed it into an institution.

This transformation is in the metaphorical sense reconditioning the structure's goals to that of an institution. This transformation allows the flatiron building to once again operate with much of the same reverence afforded to long standing, industrial institutions of the mill variety, all because of a change in use. Institutions can change, or in this case develop, along with their surroundings while the link to local heritage remains. The Flatiron Building, a historic town feature, has become the home of The Brownsville Area Revitalization Corporation (BARC) that also supports a small museum in the building [See Figures 73-75]. BARC was established with the goal to acquire and rehabilitate vacant properties; their first acquisition was their current home in the Flatiron Building (Neccai, 2009). This organization has since taken up obtaining some of the town's other historic properties for reuse. The revitalization goals of the institution are also fitting because they add to the awareness of industrial heritage through the reuse and promotion of a structure already ingrained in the town's industrial past.



Figure 73. Flatiron Building BARC
(Bastin, 2011)



Figure 74. Melega Art Museum
(Bastin, 2012)



Figure 75. The Flatiron Building
(Bastin, 2012)

BARC has also started to lay a foundation for another institution within the present one. The Frank L. Melaga Art Museum operates from the same property where it showcases the work of past local artist Frank Melaga [See Figure 74]. The display started out as a show on the Penn State Fayette campus located about twenty miles away in Lemont Furnace, before finding its more permanent home in Brownsville. Having been in operation for over a decade, the small museum today shows various works of art along with traveling exhibitions (MelagaArtMuseum.org). Much of the work seen today maintains an industrial tone to its content. The formation of these institutions spawned from an early example of Brownsville's varied industrial past. What otherwise could be seen as a major unique amenity

specific to the town, is actually home to a set of like-minded institutions. The Flatiron Building is the deep rooted outlet that allows these institutions to collaboratively operate while also utilizing the industrial heritage of Brownsville's past. The institution becomes a part of the building and vice versa, but they both are now a part of local industrial heritage. Institutions like these demonstrate a latching-on process that enables viable assets with ties to industrial heritage to share their status.



Figure 76. Brownsville Institution Formation with Multiple Institutions

5.4.4 Unique Amenities

Brownsville's extensive history includes many examples of unique amenities that are specific to the town. The unique amenities of Brownsville accumulated over time as a part of the town's industrial heritage which spanned over several industrial eras. These unique amenities are a strong part of local culture as well as the place defining parts of Brownsville that manage to combine prominence and presence with abundance. Most examples of Brownsville's past mining industry have long since disappeared. The remaining unique amenities represent area changes that occurred within different eras of Brownsville's industrial history. For example, historic infrastructure from these periods remains in the form of bridges such as Dunlap's Creek Bridge and the Intercounty Bridge [See Figures 77 & 78]. These bridges recall Thomas Jefferson promoting Brownsville in 1811 as the best suited site to accommodate the new National Highway that started out of Cumberland, Maryland. By 1817, the Historic National Road had reached Brownsville (Neccai, 2009). This led to the construction of Dunlap's Creek Bridge in 1836 to carry the National Road over Dunlap's Creek. This bridge was the first cast-iron metal arch bridge in the United States that would be a proving ground for the feasibility and durability of iron in bridge construction. Brownsville and Bridgeport (which is today a part of Brownsville), shared a main street connected by this bridge (Hart, 1904). The bridge itself still stands as a historic feat of civil engineering having been in use for over 170 years. There are almost no obstructions from the bridge above the road grade. Several of the structures that once flanked the bridge were torn down in the 1980s, but at least two remaining platforms from past commercial buildings are still in place (Neccai, 2009). To further accommodate traffic from the National Road, a site was chosen in what was once Bridgeport for the bridge that would span the

Monongahela River (Hart, 1904). The end result was a new covered wooden bridge connecting to West Brownsville. The site of the covered wooden bridge is today taken up by what is called the Intercounty or Brownsville Bridge that also remains in use.



Figure 77. Dunlap's Creek Bridge
(Bastin, 2012)



Figure 78. Intercounty Bridge
(Bastin, 2012)



Figure 79. Nemacolin Castle
(Bastin, 2011)



Figure 80. Brownsville Wharf
(Bastin, 2012)



Figure 81. Railroad
(Bastin, 2011)



Figure 82. Union Station
(Bastin, 2011)



Figure 83. Rail Tunnel
(Bastin, 2011)



Figure 84. Freight Depot
(Bastin, 2011)

Beyond the town's historic infrastructure are other attractive amenities located within the borough. Bowman's Castle (now called Nemacolin Castle) is today a house museum, but was built over the course of Brownsville's industrial history [See Figure 79]. What began as the private residence of one of Brownsville's first industrialists, Jacob Bowman, has seen new additions over the years and is today open to visitors. The house is a useful attraction with

attachments to industrial heritage because of what Bowman meant to Brownsville's groundwork industries as he is largely responsible for the early incarnations. Nemacolin Castle is located on a high point overlooking the Monongahela River surrounded by a grouping of smaller residences. Also in this lower downtown portion of Brownsville, is the Brownsville Wharf, the site of The *Enterprise's* launch that would make it the first steamboat to reach New Orleans and back [See Figure 80]. The wharf itself is a unique amenity because of the significance of the site to local and national water-based industry. The wharf today has the look of a small riverfront stage. Continuing along Brownsville's waterfront, the town's one-time thriving railroads left behind vacant properties no longer in use. These are the remaining examples that are still bonded to Brownsville's most recent industrial apex in the form of once thriving coke and coal industries connected to Pittsburgh's steel industry. Unique amenities in this light, appear in the form of a small old freight depot below the Lane Bane Bridge (U.S. Route 40), a blocked up rail tunnel, and a larger vacant train station called Union Station [See Figures 82-84]. These structures are some of the most recognizable unique amenities in terms of industrial heritage for Brownsville's waterfront portion which also holds the Brownsville Wharf. The train stations are unique amenities because of their potential use or reuse as a part of Brownsville's waterfront. Union Station is next to Brownsville's downtown section and was formerly used to carry goods and passengers. Today, Union Station is a very prominent, but vacant building of several stories, as well as one of the largest within the entire town. Running along these sites is an active railroad that follows the Monongahela River [See Figure 81]. The railroad (operated by Norfolk Southern), still transports coal along the River in its railcars, providing the last dynamic example of an industrial heritage still at work. The unique amenities of

Brownsville differentiate it from other towns and contain a variety of entities with their own distinct characteristics. Structures such as these have become defining components of Brownsville. Each one operates as a direct or indirect reminder of an extensive industrial past that has ultimately shaped and reshaped the town. This is why Brownsville's unique amenities hold value ranging from the locally specific, to the nationally relevant.



Figure 85. Brownsville Unique Amenities

5.4.5 Brownsville Town Profile

-
- **Geographic Advantages** - The geographic advantages of Brownsville are summarized by the town's accrued industrial layers that developed in such a way that its natural assets fueled industrial growth that resulted in connections to the Monongahela River, the National Road, and the local railroad. Past links also remain to West Brownsville and the former Bridgeport along with California, home to California University of Pennsylvania and the Eberly Campus of Penn State Fayette near Uniontown.
-
- **Business Clusters** - The business clusters of Brownsville prove the true extent to which industrial activity can influence an economic realm. The town's Lower Market Street business cluster also known as "The Neck" is a result of accommodations for the new National Road attracted to Brownsville because of its status as an ideally located industrial center and gateway town. A newer and smaller, but more active business cluster still remains higher up within the town along the current path of the National Road (U.S. Route 40).
-
- **Institutions** - The institutions of Brownsville reside in the Flatiron Building an otherwise unique amenity transformed into an institution through new use. The Flatiron Building is the current home of The Brownsville Area Revitalization Corporation (BARC) and the Frank L. Melaga Art Museum, both operating from the same property. The institutions became a part of the building and vice versa by latching on to industrial heritage, but they both are now a part of this local heritage functioning together under the same roof.
-
- **Unique Amenities** - The unique amenities of Brownsville have been accumulated over time as a part of the town's industrial heritage and progression spanning several eras of industry. These place defining parts of Brownsville manage to combine prominence and presence with abundance. Brownsville's unique amenities hold value ranging from the locally specific to the nationally relevant because each one operates as a direct or indirect reminder of an extensive industrial past that has ultimately shaped and reshaped the town. Examples consist of Dunlap's Creek Bridge, the first cast-iron metal arch bridge in the United States, The Brownsville Wharf, the site of The Enterprise's launch, and railroad sites such as Union Station and an old freight depot.

5.5 Mechanism Assessment Features

The assessment of small towns through the IHM allows the identification of important industrial heritage features. These features were evaluated in terms of geographic advantages, business clusters, institutions, and unique amenities. The small towns themselves supply these assets leading to the IHM's evaluation. This evaluation finds useful local characteristics and offers a new point of view towards assessing these features. The resulting IHM profiles cover assets by categories that provide development directions for revitalization. The variety of forms industrial heritage takes and the variety of facets in which it exists makes it difficult to grasp, but at the same time highly valuable. The evaluation using the IHM exposes assets that could otherwise go unnoticed in terms of their revitalization potential. These assets are part of a rather complex and dynamic resource that holds the potential to be both more visible and more useful.

The assets determined by the IHM are all examples of local industrial heritage with the ability to be a major point of revitalization efforts. However, some of these features offer an already-established direction that can further heighten the awareness of industrial heritage as an abundant and worthwhile resource. These features, wherever they appear, are defined by attributes of the widespread variety ranging to the most place specific of assets. The assessed town profiles have allowed the identification of important industrial heritage features. This is possible because the categories take in and consider a wide range of potentially beneficial items. Through the lens of industrial heritage, the town profiles first account for local geography and existing ties; both internal and external. They account for institutions and business clusters; which from both a physical and a social standpoint show the

broader valuable reach of industry beyond the factory setting. Lastly, the profiles consider the most specific place defining local elements. The categories themselves have some overlap which makes using them together the best way to get a view of the entire picture. What each category represents individually can also function in relation to the other categories. This further enhances revitalization approaches that require multiple and often connected angles to renew the entirety of a place. The categories used in these assessments interpret physical features as well as social ones through links and relationships both within a site and beyond. The IHM enables this because it was constructed to understand the context of industrial heritage and the circumstances of its creation. This creation is always reflected on the local landscape and environment. A complete profile of valuable industrial heritage assets produced from the IHM perspective was presented as a table at the end of each respective town section.

5.6 Town Assessment Summary

Industrial heritage remains as a viable resource in the Rust Belt. Looking at physical and mental landscapes in terms of industrial heritage provides a new perspective on the variety of remaining local components touched by industry. Local assets presented by the Mon Valley towns of Braddock, Monessen, and Brownsville, are industrial in nature. These assets represent the value of industrial heritage in each location. The places themselves were dependent on industry, and were in turn shaped by it; meaning industry and industrial heritage are a part of the individual town make-ups. After their respective local industries diminished, the towns began to struggle creating a much different reality for these past industrial

contexts. The industrial heritage of these towns is present in this new context in the form of local assets that hold value as an important starting point for revitalization efforts. The assessed building blocks of renewal in the three towns provide potential to spur revitalization efforts.

The value of industrial heritage has been assessed through the IHM from the point of view of the given industrial locations of Braddock, Monessen, and Brownsville. The evaluation of assets and implications of industrial heritage value was done in regard specifically to these chosen sites. These implications begin in the broadest sense with each town's physical make-up and surroundings, and become increasingly specific, zooming into the town's finer details. This approach demonstrates the various arenas of industrial heritage. The resource may be broad and complex, but it is also present in many different forms. The qualities and characteristics of industrial heritage were first broken down into definable categories used in the creation of the IHM. The mechanism next applies these categories to real situations within the small town context. The small town evaluations inventory local assets through the viewing lens of industrial heritage. The selected Mon Valley towns showcase this method for evaluating local assets in terms of industrial heritage that illustrate its value in revitalization. Each town, in its own way, exemplifies the value of industrial heritage through their determined assets. A town profile consisting of these assets was the mechanism's final product needed to begin revitalization.

Chapter SIX

Industrial Heritage Revitalization

6.1 Using the Town Profile Assessments

The town profiles developed from the Industrial Heritage Mechanism (IHM) show local assets that allow small towns to value industrial heritage in revitalization efforts [See Table 7]. The town profiles are generated through the IHM to evaluate local assets based on the developed industrial heritage categories. This evaluation took place in the small towns of Braddock, Monessen, and Brownsville. Each town profile is an inventory of industrial heritage assets ranging from entire landscapes to place specific features. The generated assessments points out important features and characteristics that can be of use to revitalization efforts that value industrial heritage.

The examples used to provide insight into the IHM categories also offer development directions. Each example was a successful representation of the categories that the IHM incorporates. For example, Emscher Park as a geographic advantage added ideas of a linked industrial landscape holding ties within itself as well as to its surroundings. These ideas provide insight into defining a facet of industrial heritage and also contribute a revitalization approach that makes use of such insight. The approaches presented by these examples represent the categories of the mechanism's assessment. The examples have given insight,

which leads to assessment. Now their respective approaches used to define each industrial heritage category can be applied to the evaluated small town assets.

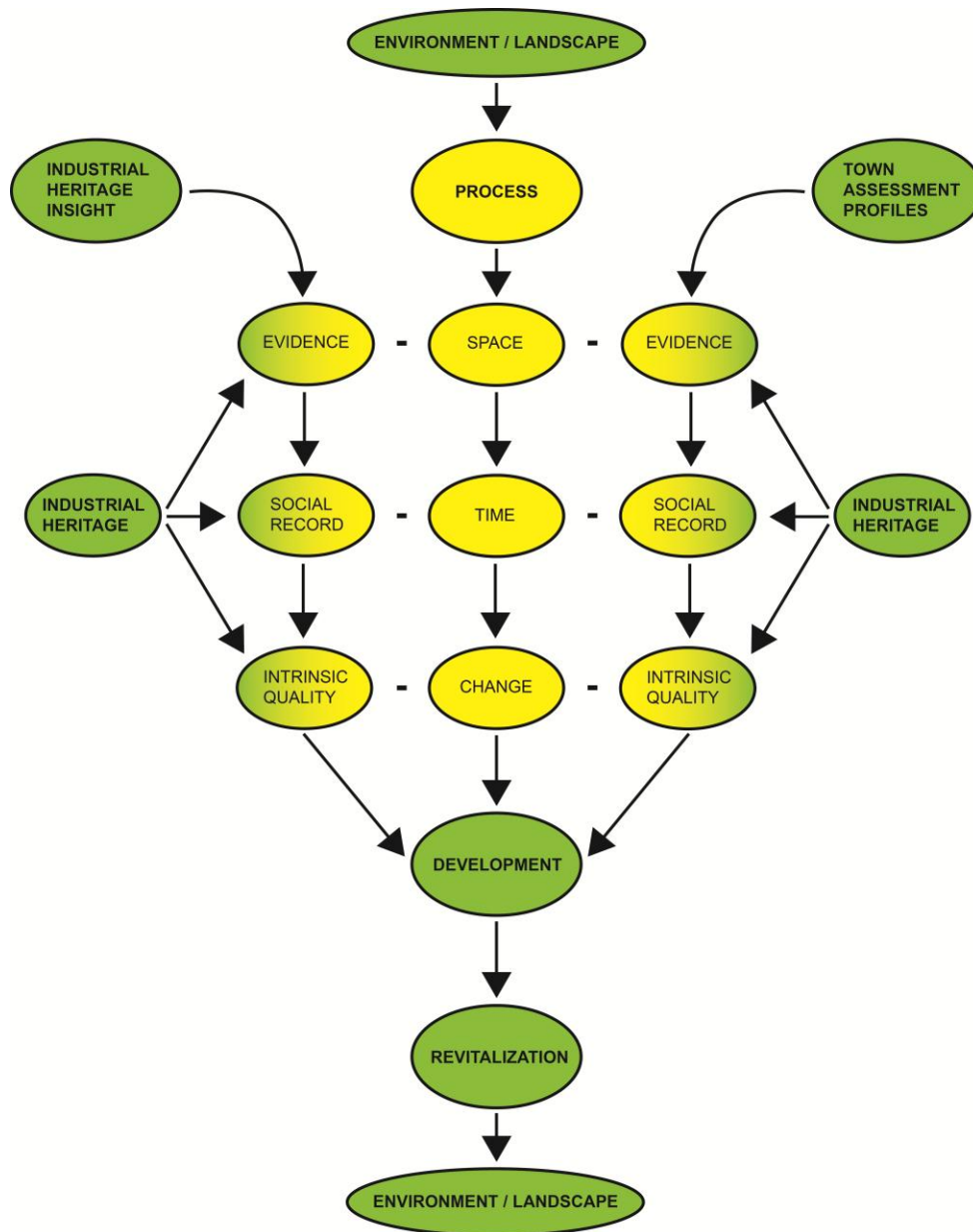


Table 7. The IHM Linking Insight and Assessment to Revitalization

The shared creation process and context of these assets parallels the framework of the IHM. The town profiles generated by the IHM are the result of assets that embody a local resource being streamlined to fit a series of categories. These categories, consisting of geographic advantages, business clusters, institutions, and unique amenities, apply to specific features. Each category offers a different perspective from which to view industrial heritage and therefore a different perspective from which to approach revitalization. The categories function individually, but they overlap because of the broad range of heritage they cover. Evaluating assets of each town in terms of one specific category only offers one direction. The true value of such a multifaceted resource is when it can be utilized to benefit the numerous small town components marked by industry.

The IHM through its categorical assessments provides insight into each type of asset. Each town's assets, due to the industrial circumstances of their creation, share a common context that links them through their development. The town profiles provide the basis of revitalization efforts that value industrial heritage. These revitalization strategies are best suited when they make use of the assets offered by each town working in concert with one another. Industrial heritage is an intricate resource heavily linked to place. Revitalization that values industrial heritage in these places will take the unified efforts of their own evaluated IHM profile assets. The value of industrial heritage is in the entire resource, rather than just individual parts, creating the need for linked solutions. In effect, specific features of small towns can be revitalized through efforts that address the entire industrial landscape. According to Luís Loures (2008) a Portuguese landscape architecture professor, the industrial landscape as a whole should be viewed as a

resource. This makes sense as cultural and historic industrial processes mostly created these landscapes. The use of this resource along with its recovery presents a paramount opportunity. Sticking with the view of the whole as a resource, location is important, in that the physical and economic character of an area is significant (Ball, 1997). Despite ideal locations mostly located along waterways, today these locations are frequently impaired assets. Their landscapes need to be returned to productive uses, so they can be reconnected with the local community (Loures, 2006): “Even derelict and degraded industrial areas can be filled with a new spirit and can be made worth living by keeping visible the spirit of existing site, by applying design strategies that contribute to economic prosperity, social cohesion, and environmental quality” (Loures & Panagopoulos, 2007, p. 794). For this to occur, industrial resources must be seen as significant and accepted intrinsic parts of local culture (Bodurow, 2003). With industry's role in shaping local culture, appearance begins to play a factor. Industrial heritage is often linked to visual value and isolated to individual structures, when the correct approach is directed at the entire industrial landscape that considers function and history (Loures, 2008). Such a design approach has been reaffirmed through the context shared by the IHM.

6.2 Developing Revitalization

Each small town essentially presents a differing form of an industrial landscape, meaning practices that tackle such scale are required. The idea of revitalizing the entire industrial landscape as a whole lends itself to utilizing every available heritage asset (Loures, 2006). The use of available assets is covered by the IHM through the interrelated categories that evaluate industrial heritage. There

are environmental concerns to address when reclaiming an entire industrial landscape, but it is also necessary to “reinforce landscape character taking into consideration the spirit of the place, integrate a preindustrial existence in the new landscape, and promote the creation of multi-functional resilient landscapes, capable to incorporate change and enhance life's quality” (Loures, 2006, p. 12). These ideas recognize the entire industrial landscape defined as a single unified element rather than individual buildings or sites. Loures (2006; 2008) provides various design solution principles that focus on the entirety of the landscape. Most of these basic ideas were already inherent parts of the examples reviewed in Chapter Four that established the IHM's categories. These ideas have been summarized and further condensed. To begin, revitalization plans should utilize public participation inside local communities. Any proposal needs to fit within the given place and context, while also reinforcing local distinctiveness and character. Environmental considerations are necessary along with increasing practices that enhance local ecology. In industrial locations, opportunities are presented by existing structures; so the past should be recognized and revealed when utilizing the present. Taking this a step further; strategies that add to a landscape or reuse the existing need to carry multiple facets providing a mix of different uses and functions. Design plans will also need to be dynamic and therefore responsive to change that accommodates adaptability as well as diversity (2006, 2008). Ideally, revitalization strategies for industrial resources would “put them into a continuous cycle of use, retaining the opportunity to tell not only the story of how technology originated, but how it continues to evolve” (Bodurow, 2003, p. 85). This continuous cycle of use can be aided by identifying a location's origin. For example, if the inception of a place is centered on innovation as a past defining feature, then innovation in the

contemporary sense can guide revitalization strategies. Looking to the past to inform the future manages to tell the whole story. This leaves a vast history to be consolidated into a concise perceptible experience (Bodurow, 2003).

From existing assets to landscapes, the whole of a small town is a constant source of memory, which is a useful component to accommodate the needed changes. Industrial heritage associated with architecture and infrastructure can do the same while serving as a means of revitalization. With respect to contemporary society, this type of revitalization operates in the economic and cultural senses (Bodurow, 2003). The individual place is only one part of culture, but various meanings have been amassed over the course of its creation. With this in mind, revitalization plans will need to make use of this collected history and heritage. Preservation or reclamation alone must do more than just celebrate the past, but also restructure the future: "Thus, industrial preservation that connects people, place, and history fosters a sense of place and the power for community renewal (Loures, 2008, p. 693). In an ideal scenario industrial landscapes will need to transform further, to add to their own recorded history (Loures & Panagopoulos, 2007). The local landscape and environment is not a blank canvas, but still the basis upon which new developments can grow leading to revitalization. The idea of a created industrial landscape is what links insight and assessment together. The landscape is at the core of the mechanism's framework presented by a shared process and context. This is the sweeping industrial representative that revitalization strategies for each small town must recognize in its entirety.

The categories of industrial heritage provide useful resources in the form of town assets. Assets of these small towns can be creatively used together in

revitalization. This is due to an overlap among assets that simultaneously share the same point of origin. This shared and common point of origin is industry. Industry created the industrial heritage resource and its discernible assets. The combination of categories and assessments depict the value of industrial heritage present in small towns. This resource, which has been summarized and illustrated, can be put to use as a start for developing revitalization. The first step was to understand exactly what to look for, and then apply that new vantage point to determine industrial heritage assets. This method allows the value of industrial heritage to be categorized and assessed, taking a complex dormant resource and turning it into a viable one. A mixture of understanding the industrial heritage resource, then viewing town specific assets, were provided and added to the mechanism. The categories that enabled such an understanding, along with the assessments, operate under the same criteria and in the same context. This allows them to connect and produce a foundation for revitalization. The connection is possible because the context of the IHM is the same as the one that defines each of the three case study towns. The industrial landscape and its processes gave a unifying background from which to draw insight and from which to assess. Revitalization of an entire landscape and thus an entire small town is the foundation that must be perceived. This foundation has been determined in the towns of Braddock, Monessen, and Brownsville through the creation of each location's respective IHM profile. The resulting profile is a useful foundation that puts the industrial heritage resource back into play at each of the three towns. Valued industrial heritage assets will ultimately inform small town revitalization strategies. A revitalization plan that makes use of the value of industrial heritage at each location was created based on the conducted research.

The IHM enables the recognition of assets that can be used in revitalization. The mechanism's assessments make use of what a particular place has to offer. The assets themselves are viewed through the four categories of industrial heritage. These categorizations provide a new point of view that allows industrial heritage to be seen and used as a valued resource. The resource is present in all of the case study towns, with each possessing a similar look, feel, and character. In addition to comparable industrial pasts, each town also shares present struggles. Despite these similarities that reside under the industrial heritage umbrella, specific remaining assets are what defines and differentiates the individual locations. The IHM assessments consider these remaining assets to determine revitalization strategies that make use of the four categories. Each category represents a different, but interrelated perspective on industrial heritage. Depending on the town, one particular category's assets may be more prominent or carry more weight than the others. The more prominent features deserve the focus, but must facilitate the other asset categories. This is to create more diverse strategies that use industrial heritage in the variety of its present forms. Each town should be approached accordingly and treated as its own distinct case. The IHM is not meant to provide one size fits all solutions or even a group of such options. Rather the need is for place-specific revitalization that understands the value of the industrial heritage resource, recognizes existing assets, and strategizes with those existing features in mind.

6.3 The Braddock Plan

The borough of Braddock can be revitalized through the value of the town's remaining industrial heritage network. The main geographic advantage of Braddock is its status within its own surrounding context. The town's major unique amenity is the Edgar Thomson Steel Works, which is part of the broader context that extends to Braddock's immediate surroundings. This steel mill is an example of past success that spurred the development of the town's institutions and business clusters. Braddock's other assets take the form of existing institutions such as Braddock Redux and the Carnegie Library. Braddock's main business cluster runs through the center of town located on Braddock Avenue. The relationship that exists between these local assets leads to a strategy designed for Braddock's revitalization. The IHM profile for Braddock makes use of this relationship through its linked categories that point to the creation of an industrial heritage park. Braddock's heritage is the resource that allows inclusion as part of a larger industrial heritage park to revitalize the town by making use of its surroundings. The fragmentary nature of industrial heritage is reflected at the site of Braddock and its neighboring towns. The present associations, contexts, and relationships of this heritage need to be brought back into focus (Alfrey & Putnam, 1992). There is an interrelated aspect to the industrial heritage that exists between Braddock and its neighbors. Linking these locations helps to reestablish forgotten connections. This is necessary as the meaning of industrial heritage can be broken up or altered (1992). The Carrie Furnace site, with its mill remains and Homestead's *Waterfront* mall site link up with Braddock's place in the proposed park re-establishing ties through the town's largest unique amenity, the Edgar Thomson Steel Works. The

steel works still operates today and owes its origin to Andrew Carnegie's influence that extends further into Braddock as well as the neighboring towns.

The Edgar Thomson plant is the starting point from which Braddock's industrial heritage, both internal and external, can be relinked. The mill's extensive influence on Braddock's industrial heritage can be seen at the Carnegie Library, an institution provided by Andrew Carnegie. This influence is also prevalent on Braddock Avenue, a once thriving business district that runs through the center of town. Some of the new businesses operating on Braddock Avenue have begun directions of reuse and diversity. An industrial heritage park can make use of these existing assets while rebuilding the past industrial connections between Braddock and its surroundings [See Figure 86]. Braddock remains part of a larger coherent network that shows the patterns of human activity within an industrial landscape. Braddock's industrial heritage provides the town's basis for revitalization through a unified heritage park with outlets for future direction. The twofold combination of a new direction presented by the park and past connections solidify Braddock's place within the proposed revitalization strategy.

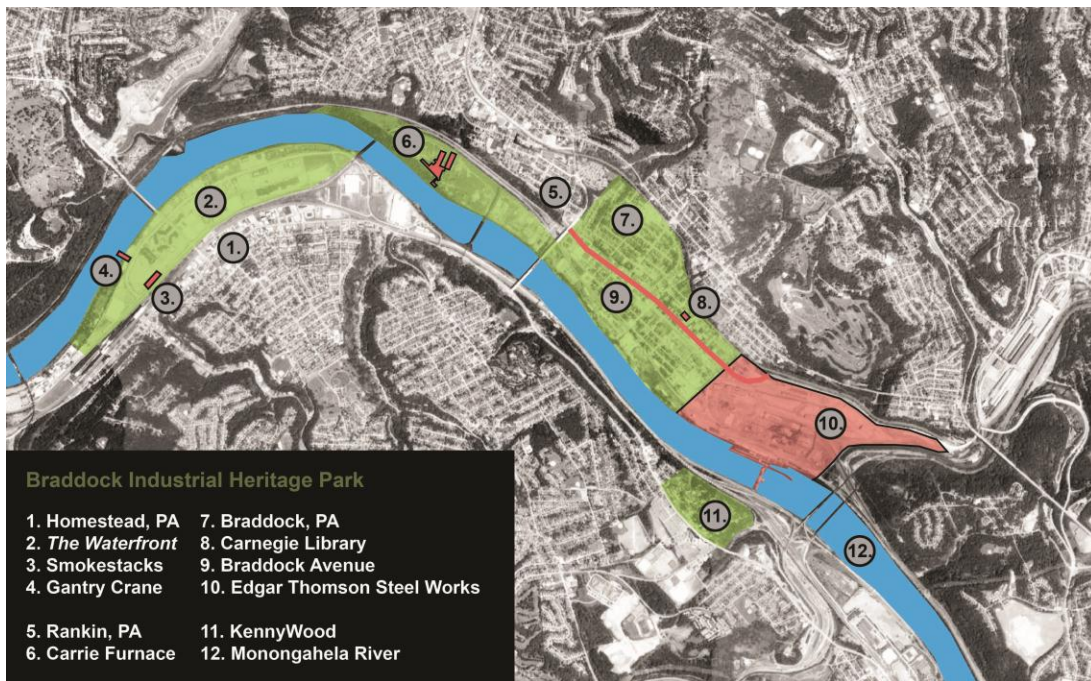


Figure 86. Braddock Industrial Heritage Park Concept

6.3.1 Braddock Strategies

Braddock needs a strategy to reconnect with its industrial heritage. Braddock's industrial landscape was the town's geography. Following the example adapted from strategies seen at Emscher Park can strengthen past ties while restoring a degraded landscape. Industry played a large role in shaping the Ruhr region, leaving behind sizable traces of its presence. Today, Emscher Park is the force that makes use of the area's heritage to bind the location together. The site of Emscher Park presented a vast history of industrial influence present over much of its own geography. This park works because it has the necessary features that can link together an industrial heritage. The town of Braddock also displays the needed features that functioned as part of an extensive industrial past linked to a larger network. This network and its links have gone dormant alongside most industry.

Using the IHM categories and Braddock's profile; underlying geographic advantages, present both in and around the town, are a foundational basis for a park operating in similar fashion to Emscher Park, albeit on a much smaller scale. Braddock is a part of a series of latent links of industrial heritage that also include the Carrie Furnace in Rankin and the remains of the Homestead Steel Works in Homestead. These steel mill sites, along with Braddock's own Edgar Thomson Steel Works operated under the Carnegie ownership umbrella. The resulting geographic network that once established Braddock diminished alongside the steel industry. Once valued built connections hold the potential to be re-established if their presence is recognized. These connections are part of the industrial heritage landscape reflective of the fact that not every link between sites survives (Fairclough, 2006). This landscape feature is what makes the site of Braddock such a distinctive option for a strategy similar to the one at Emscher Park. Emscher Park relinks a place and its connections within a region through industrial heritage and green infrastructure. The combined use of this green infrastructure with an industrial landscape serves to unify the features of Braddock with its neighbors in a fashion similar to the Ruhr region. This approach uses the entirety of an industrial heritage landscape as a resource. The focus should be directed at the landscape with regard to its function and history (Loures, 2008). This is the focus of the Braddock plan as it takes an existing industrial landscape and exposes dormant links through an expansive park design.

Further augmentation of this plan includes the Carrie Furnace site and the Homestead Works site. The Carrie furnace site hosts the large-scale remains of two blast furnaces. The open terrain around the furnaces (which can be toured) will

utilize green park infrastructure that will tie back to the other park locations. The Homestead Works site is home to *The Waterfront* which functions as a retail district among a few standing industrial reminders. In addition to these features, Kennywood Park in West Mifflin is another neighbor capable of functioning within a unified industrial heritage park. This industrial adjunct is a historic destination that incorporates a storied amusement park into the proposed industrial heritage park. Together these points can work together again as a symbol of a changing, but restored landscape. These existing geographic advantages can reconnect with the Edgar Thomson Steel Works site of Braddock. Each park site was at one time united under the Carnegie umbrella which was part of a larger industrial network that helped Pittsburgh become such a notable industrial city. If the links presented by geographic advantages are reclaimed and rebuilt, then Braddock has the basis for its own revitalization. This strategy makes use of the whole instead of focusing only on individual, stand-alone parts. The individual parts are united through a park rather than functioning alone. The restoration of industrial ties unites an area thereby creating a wider park capable of reconnecting more than just the individual sites, but a shared industrial heritage.

Looking closer at Braddock's contributions to the proposal, exposes existing assets. The IHM assessment covers Braddock's potential to reinvent its business cluster on Braddock Avenue. Braddock Avenue, a once thriving shopping district resulted from the industrial influence of the Edgar Thomson Steel Works. Braddock Avenue shows the organization of industrial life and industry's ability to spur economic expansion outside of traditional outlets. Manhattan's Chelsea Market exemplifies the same type of status. The Chelsea Market recognizes the need for a

diverse set of uses shown through its mixture of office and retail in an industrial setting. The market does not hide its heritage or origin; rather it uses this as an attraction within its refurbished structure. Chelsea Market is still a linked part of its industrial setting, but it is no longer defined by past industries. Braddock Avenue can operate in similar fashion, as a central business district within the proposed park offering diverse retail options.

Today, this avenue is moving in the direction of more diverse sustainable businesses. This diversity is part of the designed park that will allow Braddock to be more adaptable and responsive to future change. Maintaining diverse business offerings is a start. Some of these businesses and their goals have already been established and covered including Fossil Free Fuel as part of the town assessment in Chapter Five. Braddock's local vision is to attract artists, designers, and green businesses to its properties. These goals are an integral part of redefining Braddock's business clusters as well as their role within an industrial heritage park. Such a new direction embodies the idea of diversified uses for business clusters covered under the IHM. The push for diversified business has begun in Braddock with its clusters maintaining the potential for renewal along with an array of future uses. These options can further increase diversity by standing in contrast to Homestead's business contributions. *The Waterfront* offers more traditional retailers, while Braddock's direction provides a new stance that offers different opportunities. One specific experience can be had at Homestead, while a different one is offered by Braddock. This leaves different areas of the park to offer their own distinct features, while still being rooted in and maintaining the area's industrial

heritage. Braddock's business clusters as part of the park will continue the trend towards more diverse offerings.

Institutions in Braddock offer a means to facilitate and expand Braddock's role in the park that links the town's geographic advantages with its neighbors. Braddock's Carnegie Library landmark becomes a park destination due to its own historic importance and development. Across the street is Braddock Redux with clear goals of reuse and a sense of the town's history. This former church has been empowered through its new purpose as a community center. The proximity and dialogue between these structures shows two institutions standing side-by-side, separated only by Library Street. Both are ingrained in the industrial heritage of a changing context with similar goals for the betterment of the community. These institutions link to the local industrial heritage. The Sloss Furnaces of Birmingham represent how contexts change alongside an institution. It also shows how an institution that works with its changing context can adjust. The industrial heritage park of Braddock can use these rooted institutions to work alongside a changing context.

The Carnegie Library is the long-standing institution that heightens the awareness for industrial heritage. The neighboring Braddock Redux has made use of this heritage in the wake of the town's changing context. Braddock Redux also uses industrial heritage as a means to spread its goals. This parent institution spawned Braddock Farms, another likeminded institution of sorts. A further expanded Braddock Farms facilitates itself as part of the park. Braddock Farms can locally grow and sell its own produce from its location on Braddock Avenue. Braddock's place in the park will be defined through its local institutions and

business clusters which share overlapping sustainable grassroots reuse goals. These goals work in unison with the larger heritage park's proposed green infrastructure and proposed revitalization of the whole landscape. The linking of local assets within Braddock serves to reconnect the town, but in a way that also reconnects it with its surrounding industrial landscape.

All of the local characteristics assessed through the IHM are owed to Braddock's defining unique amenity still at work in the background. Insight is required in terms of people, products, and uses for an industrial history to be visible (Fairclough, 2006). The Edgar Thomson plant is Braddock's most prominent window to once again make this history visible. Unique amenities are the markers of industrial heritage. These features prove that the sites of this category have underlying connotations that enable them to manifest as unique amenities. The Edgar Thomson Steel Works, stands over the town of Braddock as its main unique amenity due to the fact that it represents the site as a past battlefield and is also largely responsible for maintaining a town economically. This feature must be accommodated within the industrial heritage park design. Bethlehem Steel, which is no longer operable, is a similar unique amenity. This site now manages the coexistence of a casino with a former steel mill. Such coexistence must happen with the new park proposal working alongside the Edgar Thomson Steel Works regardless of its capacity.

Whatever the future holds for the Edgar Thomson plant, it has a place in the layout of an industrial heritage park that spans Braddock and its surrounding neighbors. The steel works remains as the industrial heritage catalyst for Braddock that once generated, and now unites the town's other assets. A multitude of local

facets have been infused with industrial heritage that stems from the Edgar Thomson plant. This unique amenity is specific to Braddock, but it has ties to the other surrounding locations. The Edgar Thomson Steel Works is Braddock's cornerstone within the industrial geography of the town and its neighbors. Furthermore, this unique amenity has helped create the geographic advantages, business clusters, and institutions that when combined, lead in the direction of an industrial heritage park. The Edgar Thomson Steel Works shows the creation and history of Braddock's industrial heritage, but its symbolism and wider applicability holds Braddock as a major focus of the park. The points of Braddock's town profile could function individually, but the park can make use of collective advantages.



Figure 87. Braddock Industrial Heritage Park Braddock Avenue Plan
Braddock's newly revitalized Braddock Avenue as part of the larger park.

6.3.2 Braddock Plan Summary

An industrial heritage park that rediscovers the ties of Braddock's geographic advantages is capable of revitalizing a struggling small town. Such a park will reflect the changes of an industrial society while making use of Braddock's existing industrial heritage network. The town's determined assets serve to revitalize Braddock and improve its surroundings. The site's geographic advantages can function as unifiers alongside place-exclusive assets which developed in neighboring areas as well as the town of Braddock. The institutions, business clusters, and unique amenities of Braddock are the town's own contributions to the park. Braddock offers a functioning steel mill that operates in concert with its newly re-energized business cluster. This cluster resides along Braddock Avenue with a redefined mission that echoes the town's institutions.

The park maintains past examples of heavy industry, but through Braddock's industrial heritage, can also showcase a new direction that values this rich past. Braddock, as part of a larger industrial heritage park, further redefines the park with industrial heritage of various categories, ages, and uses that exist together for mutual benefit. The IHM assessment of Braddock reveals industrial heritage that allows assets to be linked internally. Simultaneously the town is relinked to its surroundings as part of a broader heritage landscape. Braddock's own industrial heritage completes the groundwork for the development of the new park which was designed around the past, but devised with the intent of a newly revitalized Braddock.

6.4 The Monessen Plan

The industrial heritage of Monessen provides the city with revitalization opportunities through the combination of a reconnected waterfront and the evaluation of local assets. The city's main industrial section is separated from the geographically elevated residential portion. This asset is concentrated over an area along the Monongahela River, acting as a geographic advantage. Monessen's main business clusters are within this lower industrial portion on Schoonmaker and Donner Avenues. These streets still display some of the ethnic flair that once defined Monessen's heavy industry. Located on Donner Avenue is the Douglas Education Center that has transformed tangible evidence of industrial heritage into an educational institution. Adding to this concentration is Monessen's primary unique amenity (that runs alongside both Donner and Schoonmaker Avenues) which is its waterfront section that once operated the city's major industries. The IHM profile covering these assets leads to the city's main industrial section; a concentrated collection of industrial heritage features. These assets are intertwined alongside Monessen's waterfront section that once operated the city's major industries. Monessen can be revitalized through unified efforts designed around the opportunities provided by the city's industrial heritage. The investment in heritage can be a major part of development if the right connections are made (Alfrey and Putnam, 1992). Monessen's profile concludes that development should continue to link educational progress with the value of industrial heritage. As part of this strategy the evaluated assets of Monessen should be combined to augment an educational focus that makes use of the value of industrial heritage.

To revitalize Monessen, the expansion of the Douglas Education Center is proposed both in its presence on Donner Avenue and through new additions to the Monessen waterfront. A revitalized waterfront that works as part of an expanded campus serves to relink the city to its industrial landscape. A few small businesses operate out of the waterfront already, but the Douglas Education Center can be expanded to operate as a small college campus in this area. This campus combines the features of a waterfront park with the goals of a college. To add further support to this education expansion, the lingering ethnic diversity present in the city's business clusters is desirable as a starting point for a renewed focus on retail and dining. These assets would both operate alongside the Douglas Education Center, strengthening the ties of an industrial past. The geographic advantages of Monessen allow this plan of revitalization to utilize Monessen's most identifiable unique amenity, its waterfront and former industrial section, while maintaining and serving the city's upper residential portion [See Figure 88]. By using the industrial heritage that industry left behind, the city can reinvent itself to serve a new purpose. Local assets will allow for the creation and expansion of a college campus in the form of the Douglas Education Center to operate in unison with industrial heritage. The industrial heritage resources of Monessen have displayed the necessary assets that can be used to create an education destination centered on the city's initial beginnings and defining industrial heritage.



Figure 88. Monessen Reconnected Waterfront Concept

6.4.1 Monessen Strategies

The town profile of Monessen shows a city that began as an industrial experiment. This sole purpose defined the developing location and spurred Monessen's industrial heritage. The town's point of origin showcases its rapid rise, quickly spawning multiple mills and factories across its waterfront. These results would not last, leading to a depleted industrial section and city divide that exists between the upper residential and lower industrial portions. The idea of reconnecting to a waterfront was part of the strategy employed in Seattle for the Olympic Sculpture Park. A new landscape was built covering the old one and forging connections within itself as well as to the surrounding city. A prominent

piece of local geography was treated as an advantage. Links were created for the newly designed landform through the introduction of art into a z-shaped descending landscape. These connections serve to unite the park itself, but the new landscape as a whole is what again unites a city and its waterfront. This same type of separation is present at Monessen. The introduction of an education centered college campus to the waterfront can build the necessary ties within the site itself, while the new campus landscape reunites the city to its past.

The spatial patterns of the city and its organized industrial development are expressed starting at the Monessen waterfront. Through the years, this waterfront has been the canvas that has mapped Monessen's industrial changes. This makes it the city's primary concentration of industrial heritage assets. Taking advantage of this development pattern and city divide, can allow the residential section to remain, while focus rests on development of the industrial portion. The industrial section is the part of town that Monessen should focus its own education-centered revitalization that reconnects a town to its waterfront. Geographic and industrial patterns of creation have influenced Monessen and shaped its place along the Monongahela River. The broad nature of geographic advantages seeks to balance links to surroundings, while simultaneously existing as part of a specific place. This is what a new education development enacts for the city of Monessen. Nearly all of the major evaluated assets that Monessen already possesses are concentrated in this section, making it an ideal base.

The IHM evaluation puts focus on Monessen's industrial waterfront section that is backed by business clusters, and institutions. This is the major portion of concentrated industrial heritage assets. Revitalizing an entire landscape lends itself

to using every available asset (Loures, 2006). The establishment of an expanded campus will require a combination of every available asset. This makes using the waterfront portion an ideal site from which to grow. The business clusters of this section are Donner and Schoonmaker Avenues which will be a large part of such growth. Although the city has moved away from heavy industry, nationalities that defined these streets still remain in the town. Such an ethnic trend was also evident in the transformation of Pittsburgh's Strip District, as it moved on from a site of heavy industry to a produce distributor. The diversity and variety that made up industry extends into business which was the case in the Strip District. The same type of carryover has happened in Monessen, but on a much smaller scale. The Strip District is a representation of local character present since its origin. It is record of economic and landscape change that is still ongoing. The Strip's setting and heritage enabled its transformation and continued evolution. The setting is there in Monessen to do the same.

The Business clusters of Monessen demonstrate the far reaches of industrial heritage through the remains of industry and the people who worked in that industry. The steel industry of Monessen drew in a diverse population that shaped extensions of industry such as business clusters. Industry attracted a workforce as part of industrial heritage which extended to business clusters in Monessen through the infusion of a local ethnic flair. Business clusters of Monessen can both expand on, and recapture the local ethnic flavor that was a defining part of local industrial heritage. In Monessen as with the Strip, established underlying ethnic connotations are starting points for the redevelopment of business clusters. Such a point is needed to work with the newly-expanded Douglas Education Center as the

combined efforts of all assets are required. Active market districts show the value of industrial heritage that resides beyond the factory. Streets that were created by (and once served) an industrially-focused city can now adapt to serve the city and its institution. These described business clusters further augment the new education focus by recapturing the homegrown ethnic flavor of industrial heritage. The ethnic mix, largely created by industry, is an opportunity in the form of a renewed retail and dining district to serve the Douglas Education Center institution and reacquaint Monessen residents with an industrial past.

Along Donner Avenue is the asset from which the education strategy is drawn. This Monessen institution developed, forging a connection to the city through the structures left behind by an industrial era. Abandoned buildings that house the Douglas Education Center were given new life along with a new purpose. The IHM categories used to assess Monessen, reference a similar institution; the ACCD South Campus. The Pasadena college wanted to better connect to its city. This goal combined with an existing local structure resulted in a symbiotic relationship and a newly shared purpose. The Art Center College of Design rooted itself in the local past for a better connection. Today, the former wind tunnel facility is an institution representative of itself as well as its educational purpose. The Douglas Education Center similarly found a way to link itself to Monessen's industrial heritage by rejuvenating older buildings, thereby filling an educational void left behind in the city.

The revitalization plan for Monessen calls for the expansion of the Douglas Education Center. The school will become a larger more prominent educational facility with outlets extending to the city's other industrial heritage assets. Presently,

the Douglas Education Center is an answer to an educational gap. However, institutions are connected to local contexts and change along with them. Such a connection is evident with the changes enacted at the Douglas Education Center that rejuvenated past structures. Further changes must be made for the school to combine with the other described local assets provided by Monessen's context. This would allow the school to play a larger role in the city's revitalization and be a central focus of the proposed plan. Industrial heritage was the conduit of creation for this institution. The city, through its industrial heritage, possesses the accommodations and supporting framework necessary for Monessen to be further redefined by an institution. The same latching on process (by way of industrial heritage) that created an institution is a means to induce revitalization for an entire city.

The Monessen waterfront is the city's largest unique amenity. This amenity is what can bring increased prominence for the Douglas Education Center and its existing home within a business cluster setting along Donner Avenue. The waterfront section that was the starting point of industry in Monessen is also the proposed starting point for the city's revitalization plans. In Monessen, the unique amenities show a usage history. This layered record of change defines a location, from the broadest geographic sense, down to the most place-specific. This waterfront industrial portion of the city created and defined the town, which through industrial heritage, branched out to other developments.

Monessen's waterfront was its industrial hub that maintained a strong presence within the city, but today, most of the physical unique amenities have been demolished. Despite the lack of a strong visible presence, Monessen's waterfront is

still a living record of the town's industrial heritage. Another living record is the High Line of Manhattan which also holds industrial heritage that branch out to other assets such as the Chelsea Market. Together they are a linked example of heritage assets working alongside one another in a shared context. The Monessen waterfront may not seem easily relatable to the High Line, but they are both extensive industrial objects that define their respective locations. The High Line of Manhattan, an urban park elevated by an industrial rail section is a reflection of the past coexisting with a new use. This reuse enabled the expanses of the High Line to stay true to its context. A similar reuse is needed for the context of the Monessen waterfront. The storied collection of unique amenities along this section consists of the land and remnants of the city's steel industry. Monessen exhibits the lasting impact of a place specific and defining unique amenity that continued to echo in spite of diminished status. The added educational endeavors will now be contained within and coexist with Monessen's waterfront. The potential is in the whole waterfront site as this section of the town acts as one big unique amenity capable of linking to other assets.

Looking to a place-specific defining feature in Monessen shows where the city first started; but this can also show where things start over. Unique amenities are defining features, but industrial heritage does not limit features to just physical structures. In terms of industrial heritage, Monessen's waterfront holds the strongest ties and the most extensive history. The waterfront has the strongest psychological connection to industry that showcases a usage history. Today, aside from the original tin mill site, the waterfront is largely devoid of physical reminders of industrial heritage. However, both the visible and invisible are a part of adding to

local distinctiveness (Fairclough, 2006). Interpretation compensates for what is no longer present at the site while furthering the understanding of the uses of industrial heritage (Alfrey and Putnam, 1992). What does remain, can stand in a fashion similar to the Bethlehem Steel site which operates a casino, yet maintains tangible place-specific industrial heritage. At Bethlehem Steel a new use was enacted, but the local history and distinction of the site remains. This coexistence idea will need to be a defining feature of the new waterfront. The town profile of Monessen leads to the redesign of the waterfront working directly with and alongside the revitalization needs of the city. The terms of this plan expand the Douglas Education Center to the waterfront while maintaining the site's occupation as a distinguishing attribute. Monessen's further transformation into a college town will occur in conjunction with its own place defining industrial heritage enhancing the adaptability of both.



Figure 89. Monessen Reconnected Waterfront Plan
A before and after of Monessen's revitalization strategy focusing on the waterfront.

6.4.2 Monessen Plan Summary

The IHM assessment and resulting town profile points out Monessen's industrial assets that lend themselves to the creation of a college town rooted in an industrial past. This idea has its origins in the Douglas Education Center's expansion to offer additional courses and disciplines as part of a new waterfront campus. Students can be further educated and trained in the wake of industrial downturns. The business clusters on Donner and Schoonmaker Avenues would boast additional Douglas Education Center buildings providing them with a new use while gaining their status and resources. Additionally the cluster will support other retailers and restaurants that make use of the city's industrially infused melting pot background. Such an operational business cluster serves as a necessary outlet to the newly-expanded college and its students.

In Monessen, this is a revitalization of the whole using what is already present in the form of industrial heritage. Monessen can combine its industrial heritage assets with its waterfront narrative. The individual parts are valuable, but when combined, the waterfront (a former industrial hub) develops a new direction that becomes apparent. Under this proposal, Monessen would be able to work within itself to revitalize the struggling town. The unique amenity of the waterfront offers a starting point and backdrop for a revitalized Monessen on the same sites that industry once occupied. All of these proposed changes play a part in the local narrative and are not limited to physical representations alone. The story of the waterfront unique amenity is backed by both business clusters and an institution that are themselves extensions of Monessen's industrial origins. The educational void left behind by industry, now filled by an institution, can go even further as it provides a new primary focus for the city leading to revitalization that values industrial heritage. The IHM profile gives a new start to revitalize Monessen from the point where the city first had its own start.

6.5 The Brownsville Plan

The industrial heritage of Brownsville is a resource that can be used to revitalize a small town by building on its industrial stratum. Brownsville itself is a geographic advantage due to the variety of accrued industrial heritage that continually altered the town. Brownsville's industrial evolution is represented through roadways, railroads, and the Monongahela River. Each of these factors represents an industrial influence that created unique amenities within the town such as Dunlap's Creek Bridge or Union Station, both built because of Brownsville's

coal carrying railroads. In terms of roadways, the National Road and its accommodations led the development of the town's business clusters which started with the reworking of Market Street. The Flatiron Building (a current institution concerned with revitalization) exists in the last structure dating back to the steamboat era that represented Brownsville's first industrial highpoint stemming from its river location. The Brownsville IHM profile discovers these assets that were part of a layered interrelated past of amassed industrial heritage with a history of adaptation. The revitalization strategy of Brownsville that best values industrial heritage must recognize the town's layered past and seek to build on the present stratum. The strategy for Brownsville's revitalization can be encompassed by the development of a new industrial landscape drawn from the town's geography. The new landscape will combine an arts-based community with renewable energy technologies. This approach, concentrated along Brownsville's riverfront, creates, augments, and makes use of the town's industrial heritage assets. The plan is to find new uses for local resources that are the remnants of past industrial activity.

Brownsville would become an arts-based community stemming from the Flatiron Building that currently operates its own small scale gallery. The plan would extend to Union Station and Lower Market Streets operating alongside a new riverfront industrial institution focused on renewable energy. These new developments all operate amidst the town's rich history and storied variety of industrial heritage. Each industrial heritage category is prevalent and interrelated throughout the development of the town providing a multi-tiered foundation for revitalization efforts. What remains is to build on this provided foundation in such a way that adds new layers, while utilizing other existing assets [See Figure 90]. The

combination of a new industry with a Brownsville arts community uses an historic backdrop of industrial heritage to maintain and provide a background and new direction for a struggling small town. The result is a new landscape addition to the existing local stratum that values the past, but accounts for the future.

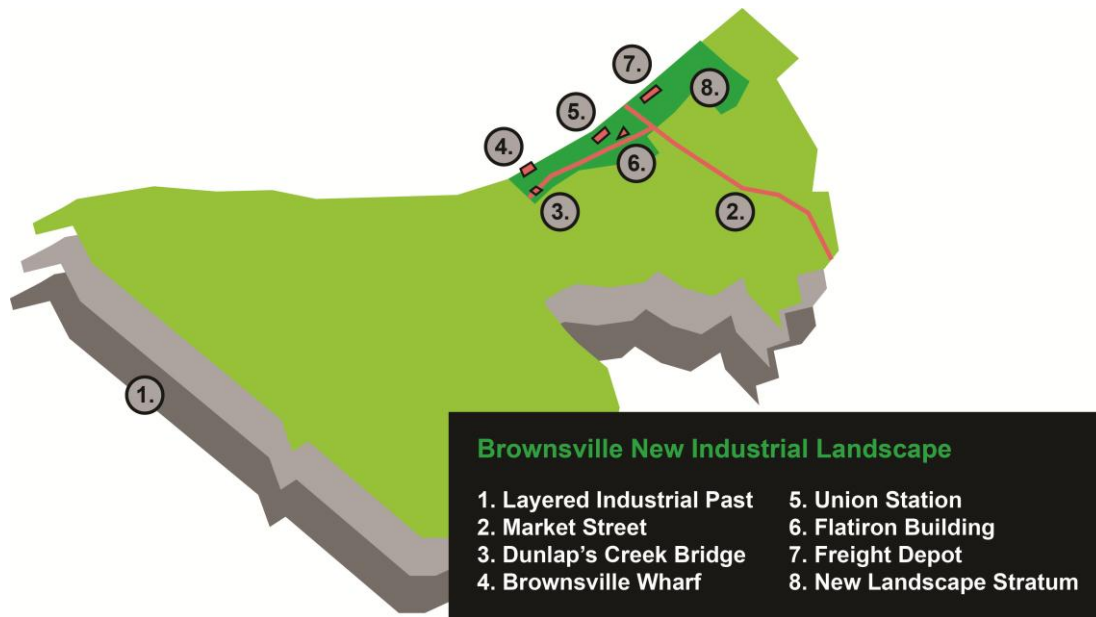


Figure 90. Brownsville New Industrial Landscape Concept

6.5.1 Brownsville Strategies

In Brownsville, internal connections to geography that enabled outside ties are encompassed by the layers of the town itself. Useful geographic advantages define the town of Brownsville as a reflection of collective industrial heritage. Natural assets fueled the town's industrial growth. This process created a landscape of layered industrial heritage. With each industrial change to the town a new layer was added. This process has ceased and the town has struggled ever since. The town profile of Brownsville reveals assets reflective of this pattern.

Seattle's Olympic Sculpture shows the idea of building a new landscape which is the process that Brownsville's assets point towards. The town's layered history of resource reliance is in need of a new layer to revitalize it. The Olympic Sculpture Park's new landscape which showcased art was built over the existing infrastructure of its site. In this case, active roads and rail lines were traversed by the newly constructed art landscape layer. Brownsville possesses this same type of infrastructure along with a collection of important historic features that a new development must work both with and beside.

Building a new industrial landscape in Brownsville has to be multifaceted which was not the case, in the past. Brownsville's geographic advantages can work beside an arts community plan, but they are in need of something else. According to Bodurow (2003), revitalization strategies should look to the past to inform the future. If the inception of a place is centered on an idea that defined its past, then the contemporary version of the same idea can be used for revitalization. Brownsville has a history of resource reliance that depended on local geography. Each resource added its own landscape consisting of industrial heritage. Brownsville was first an ideal location on the Monongahela River that led to a thriving steamboat industry. Eventually, Brownsville's next important natural resource of coal became the driving force. While these resources were sustaining the town, the National Road was at work rearranging the town's established industrial setting. Thus, the defining elements that make up Brownsville's geography are the road, the river, and the rail. Each of Brownsville's industrial high points can be directly attributed to the town's use of existing resources. The result is an intertwining of geographic advantages that tie the town and its surroundings

together. The contemporary version of Brownsville's past resource reliance translates to renewable energy which can work as part of the town's newly created landscape. Keeping with the town's historic pattern, Brownsville's industrial heritage would allow renewable energy to operate as a new industry. Renewable energy is capable of linking to Brownsville's history of resource reliance induced industrial heritage. Renewable energy as a resource-reliant industry maintains Brownsville's past industrial tactics while providing a direction for the future. The plan is to diversify an economy that was wrecked by the departure of a past singular industry. This new layer values Brownsville's geography as industry has in the past, but in a much different way that adds to and maintains an accrued heritage.

The lesson of Brownsville is that the whole of a town can be a geographic advantage through an accumulation of layers that intersect with various settings. Brownsville's own geographic connections are defined by its past utilization of natural resources which interlock with industrial heritage. The high points of Brownsville are all owed to the application of town resources that eventually created an industrial heritage. The geographic advantages of Brownsville are evident through industry drawing on the geography of the town itself in the form of natural resources. The landscape strategy is possible, because Brownsville itself has developed as a geographic advantage through its own intersecting resource-laden layers.

The ideal scenario was covered by Loures & Panagopoulos (2007), where an industrial landscape must transform further to add to its recorded history is a feature of Brownsville's proposed additions. The IHM considers other heritage assets with this role in a revitalized landscape. In addition to Brownsville's

steamboat and coal-related railroad industries, its location was an ideal point for the National Road. This road would further alter the town's layout resulting in the Lower Market Street business cluster. Outside forces and events can shape local industry (Alfrey and Putnam, 1992). Outside forces that were attracted by industrial status became a part of industrial heritage, which in the case of Brownsville, lead directly to a business cluster. Additional road rerouting of the National Road occurred after the Lane Bane Bridge was built, creating an upper business cluster on Market Street. These two distinct clusters are the result of the path drawn by the National Road. The Lower Market Street cluster called "The Neck," is an indirect byproduct of industry that is a major part of the development of Brownsville. What is today the Chelsea Market complex took an old business cluster and reused it to offer more diverse options by way of office and retail. Brownsville's Lower Market Street can be transformed through reuse in similar fashion. This section would be reformatted as an arts and cultural district offering businesses, museums, and shops that serve the town, while fitting into its layered background. The creation of an arts community brings new life to Brownsville's business clusters and provides an addition to the suggested landscape that can once again spur local business. This new cluster will operate, intermixed amidst other heritage assets, just as the Chelsea Market does. This arts community business cluster will work alongside the Brownsville Area Revitalization Corporation (BARC) as most of their properties are located nearby or along Market Street.

The Flatiron Building is home to the Brownsville Area Revitalization Corporation (BARC). BARC is an example of an institution concerned with the preservation and reuse of Brownsville's past owning several local properties.

BARC's focus on preservation serves the historic status of Brownsville that can be attributed to its extensive industrial heritage. BARC was a contemporary use that created an institution which had been a long-established unique amenity. The Flatiron Building's new use for BARC is equitable to the Bankside Power Station's transformation into Tate Modern, but on a much smaller scale. Brownsville is a town defined by industrial heritage and its assets, like the Flatiron Building, are a visible reminder of the changes that the town has experienced throughout its history.

A deeply rooted outlet, the Flatiron Building received a new purpose, enabled by BARC operations. BARC also works collaboratively with the Melaga Art Museum which also operates out of the Flatiron Building. The existing art museum is a small beginning and contributing force in the creation of an arts community component to the new stratum. The Flatiron Building, because of its age and the conception of its building type, was at one time an exceptional unique amenity within Brownsville. BARC with its revitalization goals, and the later addition of Melaga Art Museum, are two distinct, but united entities. When BARC was created, it developed a new institution stemming from a major piece of Brownsville's history that was firmly entrenched in local industrial heritage. The properties of BARC (most of which are currently on Market Street), should be adapted to accommodate artists, live/work spaces, and museums along Brownsville's waterfront. The reuse and transformation of one such property, a unique amenity known as Union Station furthers the arts contribution. Union Station, near the Flatiron Building, would become a large scale art gallery and central feature of the town. This part of the proposal is again similar to the Bankside Power Station transformation in London which also created an art gallery from an industrial asset. The refurbished Union

Station would stand as a newly created institution and part of Brownsville's arts community. These new developments would work in conjunction with local business clusters. The proximity of the developments allows these endeavors to work alongside Lower Market Street.

The assessment of Brownsville's unique amenities shows their persistence throughout the town in the form of features pertinent to road, river, and rail. These elements are the local basis of unique amenities created by industry. They remain intertwined among Brownsville's other determined assets. Such an intertwining was present at the High Line as it spans several Manhattan neighborhoods. The rail line's use has changed, but it has been reused as a park. The High Line by virtue of its structure still holds literal connections to other industrial heritage assets. All of Brownsville's unique amenities hold connections as well, but these are place defining specific attractions that tie back to past industries. In light of characterization, ordinary features can contribute in the same ways as the iconic (Fairclough, 2006). This adds to the potential of local unique amenities to utilize industrial heritage. However, the culture of industry brings its own stereotypes that can cloud true character. This character must be deciphered as it is prevalent in identifiable industries that span specific time periods (Alfrey and Putnam, 1992). The spanning of different time periods is represented through Brownsville's local assets and in this case, unique amenities, capable of attracting the tourist while providing a window into the past. This type of tourism-based approach brings value to the town and augments its redefined status as an industrial, but historic arts community.

The unique amenities of Brownsville are examples of the plethora of industrial markers that shape Mon Valley small towns. Each of Brownsville's place defining unique amenities are in some way relatable to a geographic advantage that industry once used. Again, this shows the connections that exist under the broadest and narrowest of circumstances cultivated by industrial heritage. These unique amenities spanning Brownsville's industrial layers, are interlocked among the town's geographic advantages, business clusters, and institutions. Some of the borough's unique amenities stand on their own as historically significant attractions, such as Dunlap's Creek Bridge and the Brownsville Wharf. These are the historic arts community features to be interwoven attractions within the landscape design. Other unique amenities require a new use. The revitalization of industrial resources as described by Bodurow (2003) should be put in a reuse cycle that both tell of technology's origin and its continued evolution. In terms of a landscape addition, this will require the transformation of some of Brownsville's unique amenities. These features represent the layered history of the town, but a transformation to a new category like an institution enables the story of Brownsville's industrial evolution to continue.

A new institution would be created from an existing amenity, functioning as a renewable energy research and job training center. Situated near the Flatiron Building, the new institution would embody the renewable energy contribution to the designed landscape. The site to be reused is an abandoned former freight depot running parallel to the railroad and the riverfront. The features of road, river, and rail, prevalent throughout Brownsville, act as a linking extension of this institution used to accommodate aspects of renewable energy. Each of Brownsville's unique

amenities in some fashion ties back to the local geography used and redefined by industry. There is an association present among unique amenities and geographic advantages even though one is narrow and the other category is the broad. This connection can be made because the road, river, and rail induced amenities all stem from industry induced natural resource reliance. Through linking this connection to renewable energy, the Monongahela River lends itself to the application of hydropower. The National Road represents the biofuels that can be grown locally to fuel automobiles. Lastly, solar energy can be linked to the coal-carrying railroad that operates alongside the institution itself. Brownsville's amenities are a key part of revitalization working alongside a new industry doubling as a representation of the town's past layers of industrial heritage. The industry of renewable energy provides additional industrial layers to stand bonded to and alongside the attractions of the past, adding to Brownsville's own physical timeline. Those amenities of intense historic significance can serve as local attractions and place-defining features which maintain the town's industrial heritage. Unique amenities in Brownsville now have the potential to house a new purpose by working alongside other assets further strengthening their rich heritage.

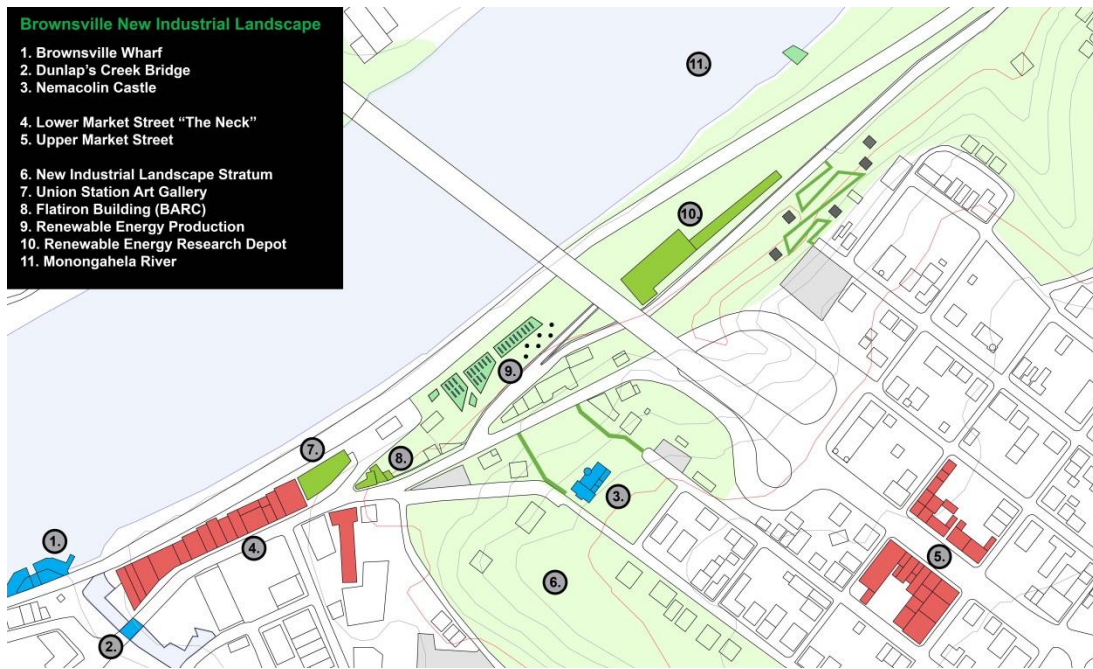


Figure 91. Brownsville New Industrial Landscape Plan
Brownsville's new introduced revitalization stratum using the arts and renewable energy.

6.5.2 Brownsville Plan Summary

A revitalization strategy for Brownsville has to recognize the town's history of highs and lows. Each recovery made use of an existing town resource that spurred an industry. This process of change left behind material evidence, an apparent social record, and an intrinsic quality capable of adapting to further change. Although aspects of these industrial changes remain, a new stratum of the town's already layered past is long absent. The answer is the reuse and transformation of local assets to combine industry with an arts community. Ultimately this creates the long missing stratum in the form of a new industrial landscape. This layering is important to Brownsville because as covered by Fairclough (2006), industrial layers reveal the history of human intervention. History can be deciphered from a layered industrial landscape and Brownsville has amassed its own extensive contribution.

Brownsville must create several features that can add to the town's layered past, while interlocking with its industrial heritage. This is the next progression for a town in search of a new identity. Brownsville's industrial heritage is a resource that provides essential building blocks for revitalization. This is in similar fashion to how the town's own natural resources were the original building blocks of industry. Brownsville's strategy is to combine existing efforts with new ideas. This creates an arts community that links and stands next to a newly-created industrial institution. These features are backed by a renewed business cluster and the interwoven historic attractions of the town as part of the larger created landscape. This new plan of action would work to revitalize the town of Brownsville both adding to and making use of its extensive industrial heritage.

6.6 Revitalization Summary

The Industrial Heritage Mechanism represents both insight and assessment along with a new perspective from which to view industrial heritage that is united by a common context. The mechanism provides this common context to the components of insight and assessment. Categories were defined to provide a greater understanding of a complex resource. Those same categories provided the lens from which to appraise assets. The mechanism makes use of this appraisal leading to town profiles which provide revitalization strategies that value industrial heritage.

The industrial landscape is the framework and background context from where each town's assets were appraised. Industry created this context along with

industrial heritage. This context and its heritage were mostly subject to change, but this process has slowed creating the need for increased adaptation. Industry operated in a constant state of flux where it was open to evolution and advancement. Industry itself is a physically and mentally recorded history of change where the old was always replaced by the new. Past industrial infrastructure was often built with the intent for evolution. Any new developments will have to adapt and change, the same way that industry and its sites did in the past. Industry was a source for transformation and the focus should always be on its evolution (Bodurow, 2003). In the Rust Belt, this evolution has nearly ceased alongside industry itself. However, the IHM accounts for this necessary evolution because the process and provided context that links both insight and assessment recognizes change. The inner workings of the mechanism's framework show the need for continued adaptation and evolution of space which occurs over time.

The IHM itself accounts for this adaptation as change is needed in Mon Valley small towns. Revitalization strategies that value industrial heritage will help with adaptation and should benefit the entire landscape. This is the same landscape that encompasses the entirety of an industrial small town. The IHM is the link and tool providing insight and assessment through a simplified categorical viewing lens. The mechanism consists of categories, links, and contexts to generate insight and assessments, all for the purpose of valuing industrial heritage in the revitalization of small towns. The small towns themselves supply the assets and share the same functioning context. This is the context in need of revitalization; one that spans the entire town.

The chosen case study towns of Braddock, Monessen, and Brownsville that were used to illustrate the assessment process were then put to further use. The towns do not inform the mechanism itself or its creation. Rather it is the defined categories of the mechanism that lead to the assessment of these small towns. The three case study towns were used to demonstrate the developed mechanism's final product. The linking mechanism and the conducted research allow the formation of specific revitalization strategies to be developed and applied to already familiar contexts. The revitalization plans of Braddock, Monessen, and Brownsville are united by their common shared resource of industrial heritage, but each town possesses its own specific set of characteristics. These differences enabled three different plans that all approach revitalization in ways that use the present value of industrial heritage.

Chapter SEVEN

Conclusions

7.1 Summary of Intent

The goal of this thesis was to determine how small Rust Belt towns could approach revitalization in a way that values their industrial heritage. To answer this question, common starting points of revitalization were changed into categories that define the value of industrial heritage. The understanding of industrial heritage in the form of categories was used as part of a mechanism to evaluate local assets. By using these categories and their linked assessments, revitalization strategies that value industrial heritage were proposed within small town industrial contexts. The revitalization of small towns remains a neglected research area. Most attention appears focused on large, midsized, or even small cities, leaving revitalization that is concerned with, and applied to, small towns filled with untapped potential. For the purposes of this study, the research was narrowed down to small towns located within the Mon Valley.

A location-specific resource is shared by most Rust Belt locations of various sizes. The common resource is an industrial heritage that binds the region together in the present day. This common resource is present throughout the entire Rust Belt, but becomes especially prevalent among small towns as their capabilities and circumstances are often much different from larger cities. In general, the Rust Belt region possesses these similar defining characteristics (material evidence, social

record, intrinsic quality) that also hold true for individual towns. The history of the Rust Belt as a whole tells a story similar to that of the Ohio and Mon Valleys. Zooming in specifically on the Mon Valley, each of the small towns chosen maintains these similar defining characteristics and resources that make them, their histories, and their heritage inherently similar. The Mon Valley was a noted Rust Belt location which is now home to several small struggling towns once completely dependent upon industry as a way of life. The Mon Valley towns of Braddock, Monessen, and Brownsville provided the grounds for an industrial heritage inventory in the form of a region-specific profile as well as town-specific versions. The profiles developed for the three towns look at industrial heritage in terms of categories consisting of geographic advantages, business clusters, institutions, and unique amenities. These mechanism categories evaluate a broad range of assets capable of forming a foundational basis for revitalization. Revitalization plans were developed for each of the three chosen towns using the mechanism's created town profiles. In terms of revitalization, however, each town has differences. No two towns are identical, no matter how much of a past they share. Some towns have different outlooks and either more or fewer resources at their disposal. Braddock, Monessen, and Brownsville were selected for their industrial heritage and to demonstrate such differences while showcasing the applicability of the resource. The conclusions drawn from the three towns extend to further conclusions based on the assessed value of industrial heritage.

7.2 Contribution Summary

A summary of the contributions of this thesis shows an increased understanding of industrial heritage alongside the specific histories of small town Rust Belt case studies. A simplified insight into industrial heritage was provided that further breaks the resource down into defined categories. The creation of these categories was then used to evaluate local assets of industrial heritage within the case study towns through an Industrial Heritage Mechanism (IHM). The IHM is the developed answer to the question of how can industrial heritage be valued in the revitalization efforts of small town Rust Belt communities [See Figure 92]. The result is a lens from which to perceive the value of industrial heritage within small Mon Valley towns. The IHM supplies a context to link both insight and assessment together. The Mon Valley context is the same as the one that the mechanism is built around. The link is made by way of a process that overlaps the existing forms of industrial heritage. The mechanism's final product is a town-specific profile of local assets from which to approach revitalization. The mechanism through its own framework operates in the same way that industry once did, in that it provides adaptable developments that are open to advancement. The use of the new mechanism was demonstrated through the combination of researched insights and assessments leading to a specific set of revitalization plans that are applicable to the three case study towns.

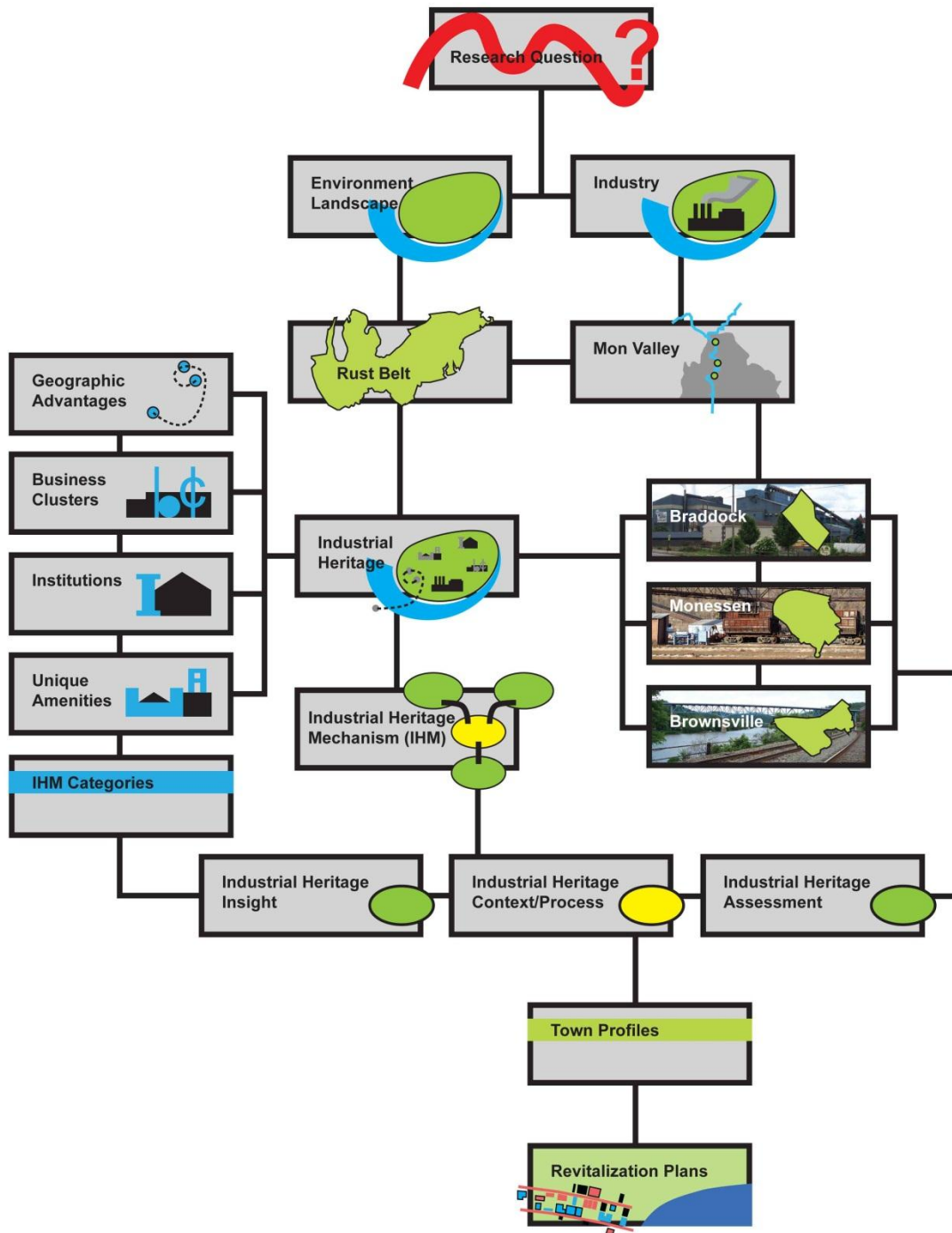


Figure 92. Thesis Contribution Summary

7.3 Future Research

Like many of their Rust Belt neighbors, the small towns analyzed, are caught in a slow period of transformation and in need of a starting point for renewal. Such renewal must recognize that these places have something useful to offer and provide a path towards progress. However, small Rust Belt towns are not the only locations capable of benefiting from revitalization. The challenge is to find the present local character from which to view assets. The industrial heritage lens can be changed out if the influences of some other type of heritage are more prevalent. The value of industrial heritage summarized from this research allowed the development of location-specific profiles. These profiles can vary by region based upon their respective makeups since industrial heritage as a resource is not present at each location. However, the assets of locations of interest can be defined, assessed, and plugged in, to formulate plausible revitalization strategies. The presented study is a tool that provides one approach to make use of what a struggling area has at its disposal. Whatever assets a location possesses can then be employed in a way that values them as a useful resource.

The context of this research was limited to the Rust Belt and its present assets in the form of industrial heritage. The constraints of the thesis can be seen in the form of location and scope. The location was specifically narrowed down to three small towns in the Mon Valley and the scope of the research was limited to industrial heritage as the most valuable force of local character. Opportunities for further research are present if the scope and/or location are changed to result in further applicability. The size, location, and character of a chosen place are the alterable variables that determine a location's uniting assets. For this study, the

mechanism is built around a context that produced industrial heritage. The framework is made by way of a process that overlaps the existing forms of industrial heritage. This shared context enables a wider applicability of the mechanism to other Rust Belt locations with similar contexts beyond the chosen three Mon Valley towns.

Industry in the Rust Belt left behind a heritage that is often misused or misinterpreted in the context of revitalization. Revitalization for small towns suffering from the decline of industry becomes progressively more necessary the longer they remain stuck in transition. The Rust Belt, a region that was created and shaped by industry, was continually altered through environmental, social, and economic terms. To successfully link an understanding of industrial heritage to real world assets, a common ground existing between the two was found. Industrial heritage is actively created through the processes of space, time, and change. These three ideas make up a larger process that constantly operates in the physical environment and perceived landscape. Other small towns are bound to the same process and context from which the mechanism operates. This makes the mechanism an applicable solution to evaluate assets leading to place specific revitalization plans in other Rust Belt locations as well as other Mon Valley towns. The context they share with the mechanism creates the same types of assets that the mechanism values through its categorical evaluation. The presented similarities show the application of the mechanism beyond the three chosen towns.

The research completed on the Rust Belt, and more specifically on the small towns of the Mon Valley, maintains the potential for a future application that further strengthens the provided links. This thesis was narrowed down to the Rust Belt

region and industrial heritage as a valued resource in terms of revitalization. Taking this a step further, a link can be created between the value of industrial heritage and more thoroughly defined development strategies. The ideas can be augmented or changed out to accommodate future use, but for the purpose of this study was limited to the ideas generated from the accompanying research. The industrial heritage demonstrated by small towns provides direction for future developments that offer revitalization options. The developed mechanism is a presented framework offering wider applications. This thesis used industrial heritage to directly link up with a devised framework of revitalization, but the possibility for other uses remain.

7.4 Final Thoughts

Feelings often arise questioning the relevance and the true viability of the Rust Belt and the areas it covers. What needs to be understood is that while these places possess the capability for improvement, they require a way to make that aptitude known. This thesis, through its perception of industrial heritage, has met that requirement. The Rust Belt and its individual parts are transitioning into something new, where new use and new purpose should be a sought out goal. The Rust Belt was formed over years of development combined with hard work, dedication, diversity, and innovation. The heritage of industry is a part of our history and a part of our lives. By accepting loss and lack of renewal, the concept of revitalization is ruined. To allow this history to disappear also implies mere survival as a main goal of Rust Belt revitalization efforts. The goal should never be about survival alone, but how the region can be more adaptive and receptive to change.

The Rust Belt's leading dilemma was that the region as a whole was entirely dependent on one thing. There is no past precedent available to learn the right approach to an unknown situation like the one presently provided by the Rust Belt context. Other industries have ceased in other locations, but never as quickly or on such a large scale as the Rust Belt. The innovation of lasting change as well as adaptability to future change in the region needs a focal point. One of the purposes of this thesis was to aid transition by using industrial heritage as a resource, not to simply maintain the current status quo. Today, the changes and alterations that constantly defined and redefined the Rust Belt have substantially slowed to a crawl. The specific processes that led to the creation of an industrial heritage may be mostly gone, but the potential of industrial heritage remains. This heritage is a lasting area resource capable of revitalizing towns that have seemingly had little to offer.

Wherever industrial heritage is viewed, perception will also have to change. The perception of the Rust Belt as a region for example, must change along with the place itself. The Rust Belt moniker is only a title. A preoccupation with changing the title is not as important as the perception of the region itself. If the Rust Belt and its communities can regain viability, changes will follow as to how it is perceived. In turn, the moniker will become inconsequential. However, altering the public's point of view along with internal perspectives is no small task. This is why revitalization is needed to provide a new use of industrial assets that simultaneously improves image and place.

Industrial heritage exists in a variety of forms and is constantly subject to change, as it continues to define both people and place. The natural environment

and the landscape are connected through this industrial heritage. Given the necessary variables in the Rust Belt, heritage is directly linked to an industrial past and is thus, industrial heritage. That process has ground to a near halt in a fashion similar to the region's defining industries within small towns such as Braddock, Monessen, and Brownsville. Industrial heritage is not solely about preservation without moving forward. In reality, industry and thus industrial heritage, is closely linked to innovation and forward thinking making it a valuable and relatively untapped resource. Industrial heritage was the embodiment of an accrued history of change. Struggling small towns require a base from which to move forward towards the future while recognizing their pasts. Small towns of the Rust Belt were located in once key industrial locations such as the Mon Valley, where the effects of deindustrialization appear readily visible to this day. The process that characterized these towns has slowed considerably which increases the need for action. For this action to work, outside individuals and residents alike will have to work together to reclaim a specific heritage; but the danger of inaction remains: "A civilization unable to recognize itself would be a frightening thing" (Alfrey & Putnam, 1992, p. 2). The small towns of the region known as the Rust Belt have already lost a lot, but they have a great deal to regain once they are presented with the option to commit to a new vision that embraces their own capabilities. There are multiple demonstrated values that epitomize industrial heritage, but a true understanding of the resource's potential is needed for it to work. Only then can the revitalization goals of small towns in the Rust Belt be suited to utilize the value of industrial heritage as a place transforming catalyst: a role in the past reserved for industry alone.

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