ASSESSMENT OF BROWNFIELDS REDEVELOPMENT PROJECTS IN PITTSBURGH, PA WITH THEIR ECONOMIC, SOCIAL AND INSTITUTIONAL DIMENSIONS

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Brownfield redevelopment has been considered as one of the major environmental and social concern since 1980s all around the world. The revitalization of these sides includes diverse set of issues and understanding their complex dynamics requires theories, concepts and methods of different academic disciplines. There is no doubt that revitalization of brownfields not only brings improvements to the urban structure but also economic, social and environmental benefits. It is also acknowledged as an important tool to achieve development which is sustainable.

Brownfields can be found in almost every community in the U.S. and can impact communities in variety of ways. The environmental and public health threats, safety problems caused by brownfields. Their huge impact on the environment and communities triggered the governments to constitute new regulations which motivate the communities' participation and define the liability issues more clearly at federal, state and local levels.

There are numerous definitions about brownfields, but anybody who starts to work in brownfield arena generally find the USEPA's official definition: real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutants, or contaminant".

In this context this study aims to take a picture of brownfields redevelopment in U.S. with particular focus on Pittsburgh, Pennsylvania. Pittsburgh has a strategic location at the southwestern Pennsylvania. During its history it has had greatly influenced by the three rivers and the regions' rich and plentiful natural resources. Both of these physical properties have had a significant role in the region's development. However, the structural changes in the regional economies due to the changes in manufacturing industries, to post-Fordist production and the rise in transportation technologies affected the Pittsburgh Region beginning from the late 1970s. The city of Pittsburgh represents a good example in transformation from a heavy manufacturing city to a magnet for education, health care, financial services and

advanced technology, the collaboration of different stakeholders and the support of governments beginning from federal level to local level.

The brownfield revitalization attempts in Pittsburg Region can be considered as one of the most remarkable institutional attempts all around the nation. There are three institutions which played important roles in Pittsburgh brownfield redevelopment: 1-Regional Industrial Development Corporation (RIDC), 2-Urban Redevelopment Authority (URA) and 3- Allegheny County Economic Development. These institutions play unique roles as initiators, catalysts, coordinators, planners funding agents, providers of technical assistance and land assemblies. Especially URA has been the key facilitator not only in funding but also in implementing the City's overall economic strategies.

This paper tries to examine the past and current brownfield redevelopment projects which have been achieved by these institutions according to their environmental, social/community, economic, legal and physical concerns through a comparative approach and addresses the question of what is essential in a successful brownfield redevelopment project. Furthermore, the barriers and assets of brownfields redevelopment in Pittsburgh, PA are determined with SWOT analysis.

Key words: Brownfields redevelopment, Pittsburgh/PA, sustainability, transformation.

1. Introduction

The structural changes in the regional economies due to the changes in manufacturing industries, to post-Fordist production and the rise in transportation technologies affected the Pittsburgh Region beginning from the late 1970s. Shifting from industrial economy to service sector based economy draws attention all around the country. (Deitrick, 1999:10)

During the industrial age, Pittsburgh became the seedbed of innovation and technological advances. However, these large industrial complexes along the riverfront ant rail lines that serviced them caused the isolation of the community from the waterways. (UP, 1998:7)

Since World War II, two developments have noticeably reshaped Pittsburgh's landscape. The first one, which took a series of redevelopment and known as Pittsburgh Renaissance, was the reformulation and involvement of public and private partnership (Muller and Tarr, 2005:35) Alterations under Renaissance programs involved the construction of new skyscrapers, downtown parks, automobile parkways along the rivers and clearing of structures and railroad tracks that damaged Pittsburgh's historic Point. (Muller and Tarr, 2005:35)

By the early 1980s, another tragedy struck Pittsburgh region again. Due to the lack of capital investments, increase in demands of unions, and fall in competitiveness in a world economy, the steel industry collapsed and many of the industrial complexes

closed. By the collapse of manufacturing in the early 1980s the region's employment fell 6.8% between 1980 and 1986, while the recovering national economy expanded by 11.4% (Deitrick, 1999a:16). Fortunately, Pittsburgh achieved to reverse the economic decline in manufacturing industry into a new development trend in service sector with a well-defined urban strategy in a short time.

Revitalization of the brownfields which were occurred as the result of economic decline was considered as advantages for reversing the city's bad situation with the sprawling office parks, retail shopping centers, and residential developments through urban periphery. Clearing of the brownfield sites began slowly during the latter part of the 1980s and the 1990s (Muller and Tarr, 2005) The Urban Redevelopment Authority (URA), private salvaging firms and regional nonprofit organization called Regional Industrial Development Corporation (RIDC) worked together under the direction of county government to undertake redevelopment of brownfields around the county. The primary goals were to attract new residents and provide new taxes and jobs.

2. The Institutional Structure of Brownfield Redevelopments in Pittsburgh

The brownfield revitalization attempts in Pittsburgh Region are the most remarkable institutional attempts all around the nation. There are three institutions which played an important role in Pittsburgh's brownfield redevelopment: 1- Regional Industrial Development Corporation (RIDC), 2-Urban Redevelopment Authority (URA), and 3- Allegheny County Economic Development

1)Regional Industrial Development Corporation (RIDC): The Regional Industrial Development Corporation of Southwestern Pennsylvania (RIDC) is a private, non-profit organization that focuses on a regional approach to economic development which was established in 1955 for fostering new employment opportunities and diversifying the regional economy of southwestern Pennsylvania (Muller and Tarr, 2003:37, RIDC. 2011). As a corporation, working under the direction of county government in Pittsburgh region, the RIDC undertook redevelopment of brownfields around the county (Muller and Tarr, 2003:37). However, its single-minded focus on economic development resulted in the sweeping demolition of the old industrial landscape and, except for a few isolated structures, almost a complete disregard for the history of the region (Muller and Tarr, 2003:37).

2)Urban Redevelopment Authority (URA):The URA, one of the first redevelopment authorities in Pennsylvania, was first incorporated in 1946 to take advantage of a new state law permitting municipalities to create redevelopment authorities for the purpose of acquiring and clearing blighted land through both negotiations and the use of well-known domain (Stewman and Tarr, 1982).

URA is still the major agency for the economic development of Pittsburgh city. Its goals are stated as creating jobs, increasing the city's tax base, and improving the vitality of businesses, neighborhoods, and the City's livability as a whole (URA, 2011, http://www.ura.org/about/about_us.php). Since the mid-1980s, The URA took on new responsibilities in addition to its traditional activities of land acquisition and clearance. As a joint developer with an economic stake in projects, its impact is varied through encouraging tourism, monitoring projects that could take advantage of the riverfronts for recreational use. By the early 1990s, URA had a role as a facilitator of major economic development initiatives, by 1996; it was involved to 31 major initiatives including riverfront development, industrial site reuse, downtown development, and neighborhood development (Stikkers and Tarr, 2000). URA's original purpose to eliminate slums and urban blight has been expanded over the years to encompass revitalization and expansion of Pittsburgh's economic base. This role led the URA into active revitalization of brownfields through land acquisition, clearance, planning, site preparation, marketing, financing and project management. (Stikkers and Tarr, 2000) Today it became an authority which is assisting low income clients to attain homeownership, recovering brownfields for new developments and helping communities reinvent themselves (URA, 2011)

3) Allegheny County Economic Development (ACED): Allegheny County Economic Development (ACED) determine its mission as managing economic and residential development for the County (ACED, 2007). ACED also serves a s the catalyst for public-private neighborhood partnerships. Federal government and the Commonwealth of Pennsylvania are their most important partners. In addition, in order to create Tax Increment Financing Districts, ACED partner with local governments and school board

3. Pittsburgh's Brownfield Projects

The brownfield projects realized by those institutions generally take place along the riverfront in Pittsburgh (Figure 3.1, Figure 3.2)

Figure 3. 1. Brownfields at Pittsburgh and its surrounding regions. (WPBC, available at http://www.cmu.edu/steinbrenner/brownfields/Case%20Studies/nav1a.html)

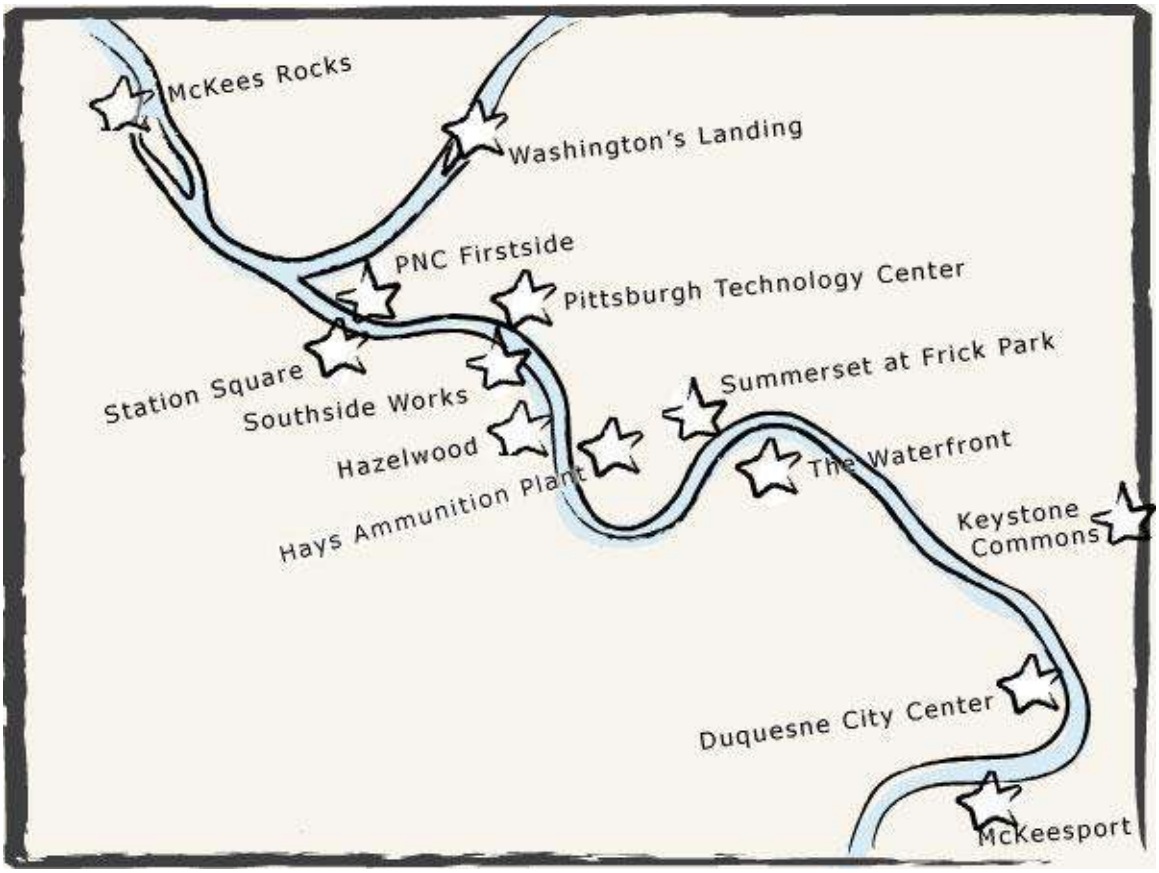

Figure 3.2. Some important Pittsburgh brownfield redevelopments (WPBC, available at http://www.cmu.edu/steinbrenner/brownfields/Case%20Studies/nav1a.html, August 6, 2011)

3.1. RIDC's Brownfield Projects

3.1.1. Industrial Center for Mckeesport

The Industrial Center of McKeesport was once home to several metal tube and pipe mill companies (Figure 3.1). In 1984, RIDC started working with the McKeesport Area Recovery Plan on a strategy for the distressed urban communities in the Mon Valley. (RIDC, 2010)

The Industrial Center of McKeesport offers land, water, and rail access. It is close to the turnpike and next to the river; although rail access competes with ground transportation (such as trucking) due to obstruction of passing trains (WPBC, 2007a).

RIDC undertook all the environmental threats since 1990s at the site. According to the Act 2 the developer of the site is responsible only for mediating immediate and direct threats to public health. Most of the contamination on the site was due to fuel oil and heavy metals. Starting in 1990, phased plans for environmental remediation, selective demolition and sale of miscellaneous scrap were undertaken.(RIDC, 2010)

The community's input is considered as the key factor for the success of the site. Particularly, the West-to-West Coalition was formed in order to serve as an economic developer for this and many sites. The Coalition represents 21 communities and has been selected to receive (WPBC, 2007a).

The RIDC used the Department of Community and Economic Development's (DCED) Industrial Sites Reuse Program funds for environmental assessments and for cleanup projects. Also, $8.0 million in loans and grants from the U.S. Department of Housing and Urban Development (HUD) were sent to redevelop the City Center of Duquesne and the Industrial Center of McKeesport. The Allegheny County Department of Economic Development worked with the Redevelopment Authority of Allegheny County (RAAC) and the Regional Industrial Development Corporation (RIDC) to take advantage of HUD's Section 108 Loan Guarantee Program, which enables public entities to leverage Community Development Block Grants into additional funding (WPBC, 2007a). Some images from the past and current use of the site can be found on Figure 3.1 and Figure 3.2.

Figure 3.1. Past and current uses of McKeesport Brownfield redevelopment site. Available at http://www.ridc.org/files/a_files/Case%20Study%20-%20McKeesport%20-%20red.pdf

Figure 3.2. Images from current use of McKeesport Brownfield redevelopment site.

3.1.2. The Almono Site (Hazelwood)

The 178-acre ALMONO brownfield site is a long, narrow strip of derelict riverfront land, geographically bound by the Monongahela River to the west and a steep hillside to the east. It was once home to two of the largest steel manufacturers in the Southwesten Pennsylvania region: Jones and Laughlin Steel Company (J&L) from 1884 to 1974 and Ling Temco Vought (LTV) Coke Works 1974 to 1998 (Gtech. 2011).

This land is the last large brownfield left within the Pittsburgh city limits, making it attractive to the hospitals and universities that reside in Oakland. Therefore, various site plans which aim to capture the interesting urban landscape of the site in a way to integrate the needs and current conditions of the nearby community have prepared (WPBC, 2007i). Because of its being the only brownfield owned by local foundations there are many opportunities that allow unique development. It is the first urban brownfield in the city in which is developed without the contribution of local government agencies and departments.

As the other brownfield sites which locate in the inner parts of the cities, Hazelwood also has a wealth of physical infrastructure that will be an asset for future developments. There are two rail lines that cross on either site of the site, one of

which connects to downtown and the other travels up Panther Hollow to Oakland. It has a working and licensed dock system that would allow for barge traffic and it is bounded by Second Avenue which is the main commercial corridor of the neighborhood. The size and flat structure of the site are the other features which enable many alternatives and opportunities for the future developments.

Due to contamination, the area needed to be de-commissioned of asbestos, petroleum, PCB removal, and other environmental hazards (Gtech, 2011).The site has currently cleared Act II remediation The entire site has been cleaned for commercial use and much of the site would need little or no remediation for future housing (WPBC, 2007i) (Figure 3.3.)

The community in Hazelwood is aware of the development of the site with a successful planning strategy and design criteria will bring the wealth and better living environment. The community involvement in the planning process has been organized through a Hazelwood Initiative, Inc (HI). The mission of HI is to act as a catalyst for the revitalization of the Greater Hazelwood Community in collaboration with the city, county and state representatives and serve as a vehicle to address resident concerns relating to various city services and to all community stakeholders (WPBC, 2007i).

Before starting the master plans, six stakeholder groups were engaged. These groups included transportation agencies; economic development agencies; private developers; river life and recreation interest groups; river commerce agencies and neighborhood residents from Hazelwood and adjacent communities (Vavro, 2003). In 2000, all these stakeholders developed their own vision of how to turn the site into a neighborhood in a sustainable way and how to make the site attractive for the residents. Their ideas, many of them similar to those that guide the Almono development today, include remediation of the site for commercial use, housing, recreation and regaining their access to the river (Fraser, 2004) (Figure 3.4.)

In the redevelopment process infrastructure costs will be significant. It is estimated that the redeveloping former steel mill sites due to the large building foundations that are often left after building teardowns will be difficult. The removal of the foundation take a considerable amount of money. The water and sewer lines, and other abandoned infrastructures on the site need a large investments to dig out, to refill, to repair, to replace or bury. (WPBC, 2007i)

Because of the land has not be developed yet it is not possible to estimate the possible economic benefits of redevelopment.

Figure 3.3. Current use of Almono Site (Hazelwood)

Figure 3.4. Almono site (Hazelwood Avenue- Courtesy of Urban Design Associates)

3.2. URA's Brownfield projects

3.2.1. Washington's Landing

Herr's island is located approximately 2 miles north of downtown along the Allegheny Rivers at a very famous point, where he Allegheny and Monongahela Rivers join to form Ohio River. The site's industrial history is extending over a hundred years to a variety of industrial uses (Deitrick and Farber, 2005) (Figure 3.5.)

In 1978 URA bought 0.5 acres from the Western Packing Company and, in 1979, 20 acres of the Buncher Company's land (Chute, 1979). The redevelopments began with the CDC, a private developer, and the city prepared a mixed-use projects comprised of commercial, light manufacturing, recreational and housing facilities. (Deitrick and Farber, 2005)

According to the environmental assessment of the central and northern part of the island, waste materials from rendering operations were found on the site. Besides, because of the placement of ash, sand, slag, cinders, and other granular materials in the fill, the groundwater did not meet drinking water standards (WPBC, 2007c).

During the planning and implementation of the brownfield redevelopment project, the developers tried to give much attention to the aesthetic viewpoint of the island in order to enhance the beauty of the island. The plantation of the streets and other public spaces, the materials used, building facade and roof slopes clearly defined. Eventually, in addition to upsacle townhouses, marina and tenis complex , many public spaces including public parks, tennis courts, biking trails, and hiking trails were formed in order to improve the accessibilty on the site (CMU, 1998a; WPBC, 2007c) (Figure 3.6.).

Figure 3.5. Image from past use of Washington's Landing

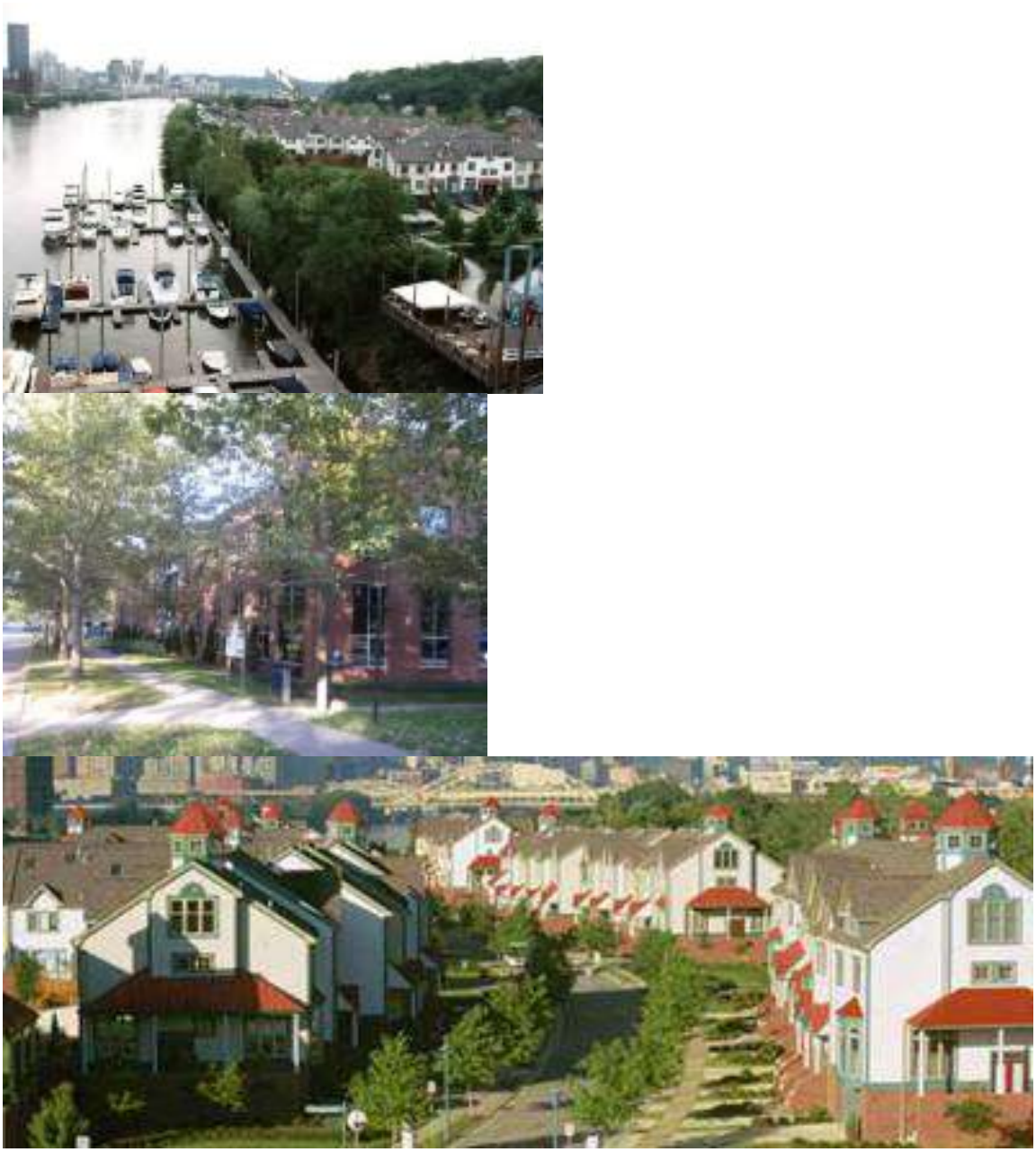

Figure 3.6. Images from current use of Washington's Landing

3.2.2. Pittsburgh Technology Center

Pittsburgh Technology Center sits on a portion of former Jones & Laughlin (LTV) integrated still mill located in Oakland across north side of the Monongahela Rivers

(Figure 3.7.). The site is less than two miles to Pittsburgh downtown and two major universities, the University of Pittsburgh and Carnegie Mellon. University.

There were numerous industrial uses during its history, including sawmills, iron and coke works, glass companies, manufactured gas, and steel production. URA purchased the land in 1983" (CMU, 1999a) Before construction on the site, all existing buildings except one, the former Soho Works galvanizing line and attached warehouse, were cleared off. Because of the wide variety and large number of industrial companies which occupies on the current PTC site, many environmental factors took into consideration (CMU, 1999a; WPBC, 2007d)

Although the URA wanted to increase access to the riverfront in this area, the active railway line on the bank of the river prohibits access. Existing infrastructure required renovations and some new infrastucture was required. None of the existing roads within the site were used. New sewer lines, electric lines, and a road system were constructed. The renovation of the Hot Metal Bridge was carried out in 2000. (WPBC, 2007d)

Today, there is an increasing demand for new office buidings in the area. The success and continious interest shown by private organizations induces URA to make more available land for office space and give more oppotunity to use more smart growth practices on the site (WPBC, 2007d) (Figure 3.8.).

This project is considered as an embodiment of Pittsburgh's evolution from town founded on heavy industry to a city on the cutting edge of innovative research and technology. (Lubove, 1996) Furthermore its sucess makes clear the contined prominence of the URA in shaping the Pittsburgh environment as well as the emergence of a broadened civic coaltion in the post-steel era (Lubove, 1996).

Figure 3.7. Images from past use of PTC

Figure 3.8. Images from current use of PTC

3.2.3. Southside Works

Southside Works is located on the south side of Monongahela River, directly across from what is now the Pittsburgh Technology Center. During the 19th century iron was produced and a big steel Company took place at the site for over a century (Santoro and Messenger, 1998) (Figure 3.9.)

After purchasing the land in 1993, URA made an effort for community consesus related to development of the site until 1996. Over the next few years URA tried to attract the developers while completing environmental, infrastructure, and traffic enhancement efforts and executing a Tax Increment Financing (TIF) package with the three taxing bodies The URA focused on improving the accecibility of the site and traffic. (WPBC, 2007e)

Today, the site contains approximately 330,000 square feet of specialty retail, restaurants, a hotel, residential urban living units, and up to 700,000 square feet of class A office space (WPBC, 2007e).

Southside Works considered as a first-class riverfront development utilizing a mix of office, medical, recreational, housng and retail uses. By this brownfield redevelopment Project, 5400 employmnet opportunities and approximately 1500 jobs were created (WPBC, 2007e) (Figure 3.10.)

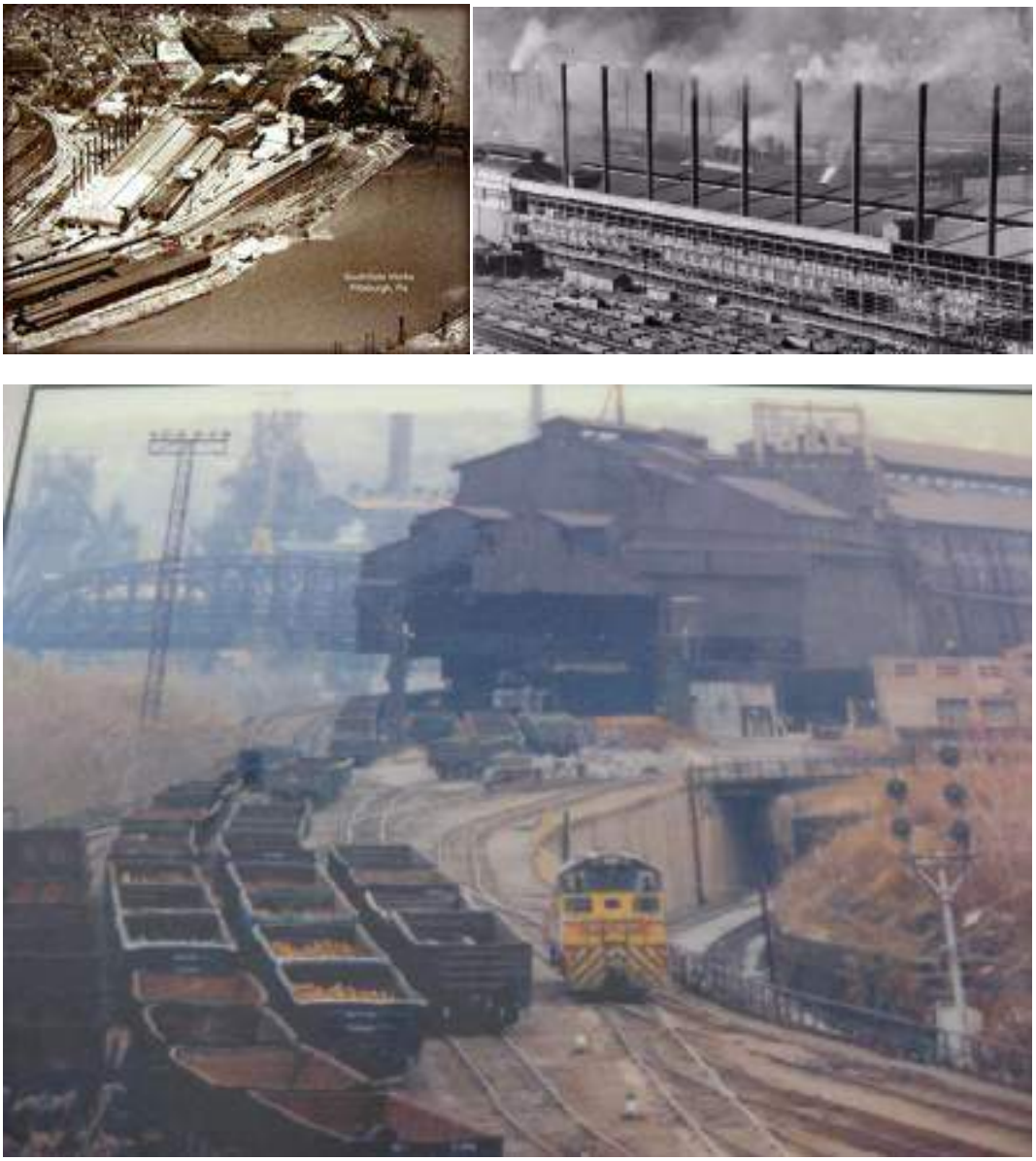

Figure 3.9. Images from the past use of SSW

Figure 3.10. Images from current use of SSW

3.2.4. Summerset at Frick Park/Nine Mile Run

In contrast to other Pittsburgh brownfields, any manufacturing facilities were constructed on Nine Mile Run and its valley during its history. It was served as a dumping ground over 17 million cubic yards of slag (Stikkers and Tarr, 2000) (Figure 3.11.). Nevertheless, its large size, close proximity to steel mills, river frontage and easy access to water and rail transportation made Nine Mile Run an ideal site for industrial development. (Stikkers and Tarr, 2000, CMU 1998b)

The URA purchased the property in 1995 and assembled a planning team to prepare plans for a housing development of up to 800 units (Deitrick and Farber, 2005:170)

Currently, Summerset at Frick Park projects is at its Phase II development. Phase I included 221 homes on 27 acres of land. Phases II will include 270 additional homes on 42 acres, and Phase III will include 213 homes on 40 acres. Phase I sales were a

success. (WPBC, 2007f) The developers constructed a main road throughout the housing areas. The projects is considered as a successful development in terms of economic concerns. There is a raise in the property taxes for the area and the project expected to generate over $2.9 million n annual revenue in the future (WPBC, 2007f) (Figure 3.12.)

Figure 3.11. Images from past use of Summerset at Frick Park and Nine Mile Run

Figure 3.12. Images from current use of Summerset at Frick Park

3.2.5. Hays Ammunition Plant (Galvtech)

The Hays site lies in the southeastern part of the city and is more properly culturally and geographically connected to the Monongahela Valley the location of many former steel mill properties (Deitrick and Farber, 2005) The site is not located along a riverside but at a very accessible point in the Monongahela River drainage basin. In 1942, the U.S. navy constructed the Hays ammunition plant to manufacture gun forgings near the southeastern border of Pittsburgh.

In 1993, the Army donated the site to the URA for $1 (Massey, 1995, Deitrick and Farber, 2005). In September of 1995, it was announced that the Hays site would be leased by GalvTech from the Pittsburgh Economic Industrial Development Corporation (PEIDC) which is part of the URA. (Belko, 1995)

Currently,there are plans for improvement in the rails to accommodate new rail traffic. Also, a new entrance constructed on SandCastle Recreational Park property may be created. The existing entrance will include the construction of new concrete pavement and the widening of the roadway intersections. Economically, GalvTech's activity has brought tens of new jobs into the area (WPBC, 2007g) (Figure 3.13.).

Figure 3.13. Images from current use of Galvtech

3.4. Allegheny County Economic Development's Projects

3.4.1. The Waterfront

The site is located on the Monongahela river directly across the city of Pittsburgh. It was occupied by a steel mill headed by the US Steel Industry (WPBC, 2007h) (Figure 3.14.). Despite some advantages of the topography of the land, there are some disadvantages in terms of accessibility. Even though the topography is flat and nearby other prime locations such as Squirrel Hill, the location of the site is not easily accessible to the communities within walking distance. Active railroad tracks separate the development from surrounding communities (WPBC, 2007h)

The developer had to undertake main streets because of the increasing traffic due to the new residential, commercial and retail uses. Many physical changes were made, however the historical character were destroyed during these efforts.

The lubricants used by the steel mill were stowed in underground storage tanks, which leaked and contaminated the soil. There was also asbestos contamination on the site. The asbestos cleanup and a storm runoff test was conducted before the development. (WPBC, 2007h)

What the people expected most from the redevelopment of the site was jobs for out off work steelworkers (Serrin, 1992). The former residents were conflicted over what the new Homestead should be, but many wanted industrial or retraining facilities so people could stay in place, prepare themselves for new jobs, and "have control over their lives (Serrin, 1992). The citizens formed a non-profit citizen's development corporation (CDC) and a Homestead Economic Corporation (HERC). The state formed the Enterprise Zone Program. HERC and Enterprise Zone were able to develop two master plans together, one for the mill site and one for the community. However, most of the residents disappointed with Waterfront development. Because retail jobs do not support families, neither do they provide the unemployed with the sense of control Homesteaders so urgently need (Pearce, 2006).

As a result of these projects a new landscape has emerged along the rivers (Figure 3.15.) Although paying more attention to the river, the private Waterfront development on the former Homestead Steel Works site on the Monongahela River is retail, entertainment, office, and light industrial complex seemingly designed without any consideration of the riverfront (Muller and Tarr, 2003:37) In other words, it can be said that he development of Waterfront based on the suburban model and the land would be better utilized if storied buildings as well as structured parking was also part of development plans.(WPBC, 2007h)

Figure 3.14. Image from past use of the Waterfront

Figure 3.15. Images from current uses of the Waterfront

3.4.2. City Center of Duquesne

The City Center of Duquesne is located on approximately 250 acre site along the Monongahela River, south east of Pittsburgh on the former Duquesne Steel Works (Figure 3.16.). The plant was in service until 1984. In 1984, RIDC started working with the McKeesport Area Recovery Plan on a revitalization strategy for the distressed urban communities in the Mon Valley. Allegheny County Economic Development took control of the site in 1987.(RIDC, 2010; WPBC, 2007b)

The site is at an accessible point via water and rail. RIDC welcomes the newly proposed funding for flyover ramps which would improve vehicular access over extremely active rail lines. The current access to the site creates significant traffic, pedestrian delays and safety risks. Therefore, transportation by ground, specially trucking access is considered as the key issue for the site (WPBC, 2007b)

RIDC did not pursue environmental insurance for the City Center of Duquesne. The primary contaminants on the site were heavy metals and PFCs. According to the environmental assessments, it is determined that the site would require at least 12 inches of fill spread over the entire site in order for approval as a light-industrial commercial property. On the other hand, demolished blast furnaces that are laden

with asbestos have presented a large obstacle to redevelopment of the sites southern end. (WPBC, 2007b)

The railroad tracks run between the community and the property causes the feeling of separation from the site. It is not possible to say that the communities' decisions have been taken into consideration during the redevelopment of the site. The West-to-West Coalition was formed in order to serve as an economic developer for this and many sites (WPBC, 2007b)

This site is large in an area with an economically disadvantaged population. The attack of Hurricane Ivan in 2004 decreased the market conditions on the site. Even though several public funds have been available for the site, the redevelopment process has not been completed yet. Some of these funds are:

To date, a total of $31 million has been committed to the Duquesne and McKeesport projects. The funding includes: $8.0 million in loans and grants from HUD; $4.5-million grant from the RACP; $1.0-million grant from the U.S. Environmental Protection Agency (EPA); and $17.5 million in earmarked federal transportation funding.(WPBC, 2007b)Until now, RIDC has renovated 5 existing buildings into multi-tenant facilities. In addition to them several facilities have been constructed filling up 60% of the site (Figure 3.17.)

Figure 3.16. Images from past and current uses of Duquesne City center Brownfield Redevelopmnet Site. Available at http://www.ridc.org/files/a_files/Case%20Study%20-%20Duquesne%20-%20red.pdf

Figure 3.17. Images from current use of Duquesne City Center

4. Conclusions

With the redevelopment of brownfields through city's new economic vision and land-use strategies, Pittsburgh has achieved to reverse its decline into a a new development strategy. All the brownfield redevelopment projects In Pittsburgh analyzed here met the objectives of the following strategies

-Revitalizing the waterfront

-Increasing public access to waterfront

-Attracting the residents to the city

-Establishing high technology industry.

-Accelerating the urban developments through City's new development strategy

-Increasing the quality of life

-Reversing the city's economic decline

-Creating new jobs

There are some lessons which can be learned from the brownfields redevelopment projects of URA in Pittsburgh which can be applicable elsewhere. Stikkers and Tarr (2000) in their paper, try to clarify the important points for the redevelopment strategy in these projects: According to them all these projects facilitated the City's overall redevelopment goals of creating high technology jobs, encouraging people to move back into the city, increasing access to waterfront, and preventing the decrease in tax revenues. Public funding is the most important factor in achieving the city's redevelopment goals. It is nearly impossible to attract the developers' interest to abandoned lands in the cities where there is population decline. In many cases it was seen that the attempts to attract private developers and to develop the sites cannot be achieved unless the local governments took the lead. Most of the actors who play important roles during the redevelopment of these brownfields and in determining the City's new development strategy argue that without URA it was impossible to achieve these projects. It may be possible to find developers, but at that time the developments would have been not realized through mixed use planning strategy or through City's new development strategies.

In this context it is necessary to emphasize that to facilitate these strategies, significant amounts of public funds from local, state, and federal sources has been required. The city's efforts, combined with state government policies that favor brownfields redevelopment, have been able to provide the momentum necessary to transform and revitalize these properties.

URA has been the dominant body, as the primary source of funds, in the Pittsburgh's brownfields redevelopment process. As a developing agency, the URA was unique. As Lubove (1996) indicates, no other institution as URA combined so many functions: initiator, catalyst, coordinator, planner, funding agent, provider of technical assistance and land assembly. URA plays the key facilitative role not only in funding but also in implementing the City's overall economic strategies through acquiring brownfields and removing the barrier of environmental liability. By acquiring the land URA has the opportunity to control all the aspects of redevelopment. Implementing City's overall economic strategy may have been more difficult and slower had Pittsburgh sought to attract private developers to acquire and develop the land. Moreover, the success of removing the barrier of environmental remediation have only achieved by the lawsuits concerning environmental liability issues associated with the brownfield projects.

Infrastructure is another critical factor in the redevelopment of these sites. In most of these projects (except Hays Ammunition Plant and RIDC's projects), existing infrastructure was almost completely removed and the sites developed as it were vacant. This approach has some advantages in establishing connections to existing facilitates such as water and sewer system. A particularly important issue in this respect is transportation and how impacts to the community's existing street network will be addressed. Such a problem appeared at the Southside works by rehabilitating a historic bridge to serve as a new transportation gateway. In other cases, such a development cannot be achieved and the increased traffic with new developments has proven to be tough problem associated with development. An important issue

beyond the re-use of existing infrastructure, however, is the degree to which new development will connect to the fabric of surrounding community. In Pittsburgh cases, an important goal of redevelopment has been to transform the industrial sites at the waterfronts, to remove barriers associated with previous use of the rivers and to establish corridors that can connect the surrounding communities to the recreational public spaces at the waterfront.

In terms of transforming an abandoned site into a magnet for new jobs, the Pittsburgh Technology Center can be considered as successful project. However, the interconnection between the surrounding community and the riverfront was not achieved and an opportunity of enhancing public access to its prime waterfront location was missed. A rail road line along the site's southern edge adjacent to the Monongahela River was one of the barriers in the failure of this strategy. Because this line effectively blocks public access to the river and occupies land that might otherwise be used as a riverfront park. Critics also fault the development because of its overall design and use of space. Instead of establishing a connection between the river and surrounding neighborhoods, the site was designed as a typical suburban office campus.

Contrary to PTC, Washington's Landing can be described as successfully reconnecting the surrounding community with the Allegheny River. To achieve these goals and to improve public access, a historic bridge was refurbished with pedestrian and biking trails and these trails linked the island to an existing riverfront on the city's north side. These design features enabled Washington's Landing to achieve the goal of restoring access to the waterfront at a site that was previously reserved completely for industrial uses.

In the Southside and Nine Mile projects, similar design criteria tried to be accomplishing because of the success of the Washington's' Landing development. At Nine Mile Run, numerous collaborative meetings were organized between city officials, artists, engineers, landscape architects, and local residents for the viability of the project.

The preservation of historical industrial heritage can be considered as another failure in these projects. Each of these sites has deep historical roots and helped shaping Pittsburgh as the center of American industry during the nineteenth and twentieth centuries. Each site is also a symbol of the region's decline. Revitalization of these sites reflects Pittsburgh's determination to rebound from a devastating period of de-industrialization (Stikkers and Tarr, 2000). The design criteria should be developed with the approach to reveal the symbol of the sites.

In addition to these major redevelopment projects, the river landscape is changing in many smaller but no less profound ways. The former industrial riverfronts are not the only sites of renewal. Most dramatic developments of a regional shopping mall and an upscale housing complex were occurred on the massive slug dump. (Muller and Tarr, 2003:37) However it is still not possible to say Pittsburgh utterly eliminate the environmental pollution problems. Despite improving river conditions, the region

still struggles to meet clean air standards and the water quality is under the acceptable levels. (Muller and Tarr, 2003:38) Waterfront reclamation, is also considered as a key aspect in improving the marketability of these sites to both potential residents and businesses (UP, 1998)

Linking of the environmental, economic and legal efforts to a comprehensive community development strategy is very essential in brownfields redevelopment in Pittsburgh Region. Such a strategy requires that contiguous communities with shared interests but distinct political boundaries must begin to work with one another to both redevelop brownfields and revitalize their communities. Moreover, an effective redevelopment strategy with vigorously working groups in order to reduce the impact of the obstacles and liabilities can also strengthen and market the assets of the sites. (UP, 1998:57) Comprehensive approach should be evident, proper planning requires that several factors, including environmental factors, transportation, land use, community interests and long - range and regional focuses, should be included." (UP, 1998:57,58)

The Pittsburgh case study provides direction for other cities in a number of areas. As Roger S. Ahlbrant Jr. (1986) mentioned in his paper about the "public private partnership in the neighborhood renewal", city programs must be flexible enough to be tailored to the needs of individual neighborhoods. The Pittsburgh brownfield redevelopment experience also demonstrate that partnerships not only provide additional resources, enabling the city to leverage its public dollars, but also help to build the capacity outside of city government to respond to the needs of community. In addition, programs, include both technical assistance and funds for operating and project purposes, to build organizational capacity may be required (Ahlbrant Jr., 1986)

At this point, after analyzing and evaluating some of Pittsburgh' brownfield redevelopment experiences, it may be necessary to ask the question "At what point will the City's strategy stimulate the private market sufficiently enough to persuade investors to take on local brownfield projects without significant infusion of public funds? Must the URA continue to serve as the developer of brownfield sites by investing substantial amounts of public funds to return them to productive use?" Because the main goal in brownfields redevelopments in many communities is to attract private developers to assume the redevelopment of abandoned or underutilized properties.

Most of the actors, had important roles in the redevelopment process, argue that there is not a certain answer for this question. Actually, it is clear that URA should continue to serve until the country' and state' economy become better, stronger and stay stable. For example according to Stikkers and Tarr (2000) the answer of the questions may be evident in another regional brownfield just beyond the city limits.

Political support and leadership is the main driving force for the achievement of the purposed objectives. However, the political climate is not the same as in 1980s.

Therefore brownfield redevelopment in Pittsburgh, PA is more difficult today than 30 years ago.

Table 1. SWOT Analysis for Pittsburgh Brownfields Redevelopment Projects

	Strengths	**Weaknesses**	**Opportunities**	**Threats**
Environmental issues		-Soil and water contamination levels are still below the legal standards	-Legal arrangements related with contamination and preservation -Increasing public awareness in environmental related issues	-Urban sprawl
Spatial issues	-Existence of infrastructure -Accessibility -Waterfront	-Insufficient awareness in historical heritage preservation -Existence of railways as separators	-Existence inside the border of metropolitan city	-Greenfields
Political and institutional issues	-Central role of governments -Existence of RIDC and URA		-Strong political support at federal, state and local level	
Legal issues		Clouds on the determination of brownfields	-CERCLA, BRERA, Pennsylvania Land Recycling Act (Act 2)	

Economic issues	TIF	-Insufficient public funds -Limited market demand	
Plan/design based issues	-Well-defined development strategy for the city	-Lack of comprehensive planning -Insufficient design criteria for sustainable development	
Social and Communal issues	-Effective community development corporations (active participation)		-Collaboration between the stakeholders

It may be necessary to analyze the existing situation after looking back the brownfields, in the year of 2012. There are still some weak points and some threats which cause delays in some brownfield projects and some strengths and opportunities which still keep the brownfields redevelopment issues on the City's agenda.

It can be said that the economic problems are considered as the main obstacle in the redevelopment attempts for brownfields. It depend not only the global economic crisis all around the world but also the economic problems at the state level.

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