



URBAN REBIRTH

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For revitalization of a post industrial neighborhood it is necessary to investigate, identify, and respond to the missing urban amenities which are required for further development.

ABSTRACT



Post industrial urban decline is a direct result from cities that expanded in relation to the economic boom of manufacturing during the industrial revolution of the early 20th century. Manufacturing however has slowly abandoned some of the cities that depended on it to survive. These cities are in need of refocusing towards a service based economy where jobs will be in supply for the residents. When an environment provides social needs such as religious worship, schools, police stations, and hospitals, potential companies will see a strong community and be willing to relocate their employees to the area.

PROJECT SUMMARY



PROJECT SUMMARY

This thesis explores three examples of cities that have struggled to progress because the businesses they were built on have faulted. Detroit, MI, Buffalo, NY, and Springfield, MA have all attempted to transition from a manufacturing based economy to a service based economy. Detroit was the home of the auto industry for almost a century but automobile corporations such as General Motors and Ford have outsourced most of the production to plants outside the country. Buffalo was one of the main steel manufacturing towns of the industrial revolution but now that the demand has resided and the water ways that once passed by the city are obsolete, businesses moved to more vital locations on the St. Lawrence Seaway. Springfield was home of the National Armory which brought metalworkers to Massachusetts for centuries. During World War Two Springfield was the home of weaponry but in 1968 the armory was closed and there was no longer a great demand for weapons. All three cities have suffered from population decline since the end of their peak but have attempted to diversify to more contemporary fields to rebuild the economy. Detroit has acquired Compuware, Quicken Loans and, Electronic Data Systems. Buffalo is home to three major banks, and producing high technology computer equipment. Springfield is diversifying with education, health care, and insurance companies.

Three examples of a cities that have successfully progressed with significant economic change is Jacksonville, FL, Minneapolis, MN, and Phoenix, AZ. Jacksonville began as a dairy town but as that business declined other companies stepped in to fill the economic gaps. Minneapolis was an economy based on logging and flour milling, today it's success is the diversity of the economy. Phoenix was a transportation hub before WWII and continued to expand as soldiers returned home.

There must be physical office space for work but companies also look for amenities such as living conditions and civic services to confirm the location will be a successful investment for years to come. How can an architectural design influence the economy in promoting positive growth for a rebuilding a city? This can be accomplished by executing an architectural thesis on a neighborhood scale for a civic project. The goal is to explore significant ways to revitalize the urban fabric of an obsolete site.

THESIS PAPER



INTRODUCTION

Major urban cities have suffered from the effects of post-industrialism and the economic tragedy that comes with it. Revitalizing these cities is a common trend around the country and around the globe. Some of the cities that have been successful include: Boston, Jacksonville, San Francisco, Portland, Minneapolis, Bilbao, Belfast, and the list goes on. For many different reasons there are some cities left behind. This thesis explores the actual spatial, programmatic, and sociocultural uses that are planned to revitalize postindustrial cities. The successfully redeveloped cities became the precedents for analysis on what a post industrial city needs to recover.

RESEARCH

Post-industrial urban decline is a direct result from cities that built on the economic boom of manufacturing during the industrial revolution of the early 20th century. Historically, waterfronts were a source of life for agriculture and then for shipping and manufacturing. Once these clustered areas of factories became obsolete the businesses moved to larger, less expensive land that no longer had to be located along the water. Manufacturing slowly abandoned some of the cities that depended on it to survive. These cities are in need of redeveloping the waterfronts that have historically been so integral to the success of the economy and citizens of the city.

To reawaken city waterfronts (after the industry has receded) they must become places for people to live and experience the city in a new way. Richard Marshall's, *Waterfronts in Post-Industrial Cities* explains that there are four time determined generations of waterfront (re)development. The first cities of redevelopment are considered the cutting edge. For postindustrial cities this was Baltimore Maryland. During this time cities were changing from a manufacturing based economy to a service based economy. During this time it was important that the city "reaffirmed the local and national identity" in the waterfront development project. The second generation of waterfront development is when organizations are founded to focus on (re)developing the waterfront. During this phase both Boston and Barcelona were noted for the outstanding accomplishments made. The city planning and the private party usually work together to complete these developments. Third generation (re)development is when the ideas are publicly accepted and encouraged. This is when smaller, lower tier cities also start to take part in the waterfront revitalization. The fourth generation is any time after 1990 this is what is still not defined¹. It challenges the use of resources, the economy, culture, and tourism to help rethink and rebrand the city.

HISTORY OF SITES

The first criteria for the thesis sites were that the city be in a state of decline. This included population, economy, and sociocultural factors. Due to the historical nature of industrial sites it then became necessary for the neighborhood to be in proximity to the water and had to have historical urban industrial importance. Researching the history of the city and future plans for the city was next. Detroit MI, Springfield MA, and Buffalo NY became the three cities to study from this information.

Through research these three cities were picked, as the analysis continued a neighborhood was picked in each city to focus on. These neighborhoods were approximately 1 square mile in area. After investigating the history of the city and the site as well as the walkability, the three neighborhood sites were focused to roughly .3 square miles or about 100 city blocks. These three sites are examples of cities that have struggled to progress because the business models they were built on have defaulted. Detroit MI, Buffalo NY, and Springfield MA have all attempted to transition from a manufacturing based economy to a servicing based economy. All three cities have had unexpected turns for the worse in the economy, population, politics, or cultural differences. Most of all, they suffer from a lack of pedestrian activity, especially along the waterfront.

Detroit was the home of the auto industry for almost a century but automobile corporations such as General Motors and Ford have outsourced most of the production to plants outside the country. Although the auto business is leaving Detroit, the economy is still dependent on the engineering and testing for these companies. Hydrogen fuel cell research is the newest industry in the area. There are also financial, computer, accounting, and law corporations located in Detroit and the surrounding area. Detroit has acquired Compuware, Quicken Loans and, Electronic Data Systems. Detroit also has plans of developing a "Road to Renaissance" plan; this includes enticing creative business, students, and entrepreneurs to move to the area. These groups of people are historically the most adventurous when it comes to choice of housing. This would bring new money that the city has not benefited from in many years.

Islandview is a neighborhood primarily along Jefferson at the base of the Douglas MacArthur Bridge (Belle Isle Bridge). This neighborhood has physical evidence of the industrial history of the city. There are warehouses in a range of decay scattered throughout this site. The waterfront on this particular site is largely taken up by a former tire factory 2. Jefferson, the main commercial street is nine lanes wide with a speed limit of 35 miles per hour 3. This area has a strong population that could add activity to the streets but the feeling of the area is not pedestrian friendly. Detroit might be the home of the automobile but it is also home to at least 800,000 people that have legs!

Islandview scores a 26 out of 100 on walkscore.com; meaning, this area does not have most of the expected amenities within a walkable distance. The area has very little commerce, abandoned lots, and populations that have unfulfilled educational needs. There are opportunities in this area for redevelopment and growth; however the problems cannot be solved simply by architecture. This will take political movement and government help, as well as the public and local businesses taking pride in their neighborhood before anything will change.

Springfield was home of the National Armory since 1794, which brought metalworkers to Massachusetts for centuries. In 1968 the armory was closed and there was no longer a great demand for weapons. Since 1968, Springfield's population has been in decline. The manufacturing employment has been declining but the service economy has been growing. Springfield is diversifying its economy with education, health care, technology, and insurance companies. The focus of growth is on a partnership with Hartford, Connecticut to develop a knowledge corridor. This would revitalize the population and hopefully bring more jobs to the region.

The South End in Springfield is the area where the industrial past and the future economy of Springfield mix. It leaves confusion of identity in the area and lack of defined uses. The waterfront is separated from the pedestrian by an eight lane highway. The only practical way to access it is by car. Once at the water's edge there are no activities along the waterfront for pedestrians to take part in besides the few dedicated joggers. This area would be a perfect location for college students to live close to downtown and their school of choice 4 .

The South End in Springfield scores a 35 out of 100 for walkability. This is defined as "car dependent"; most expected neighborhood commerce such as grocery stores or coffee shops are not provided within a walkable distance. Although this area is directly south of downtown, it still suffers from depopulation, lack of commercial space, and lack of civic or recreational spaces. It is improving its economy with the growth of colleges along the "Knowledge Corridor" and the health care services are improving at a rate faster than the national average. With these facts it is expected to see public improvement in Springfield for the citizens to enjoy.

Buffalo was one of the main shipping and steel manufacturing towns of the industrial revolution. Now the demand has resided and the Erie Canal that passes by the city is obsolete, businesses moved to more vital locations on the St. Lawrence Seaway. Since 2003, this city has been working hard to "capitalize on it's strengths" which include it's location to international borders and natural resources in the area. Buffalo is home to three major banks, and producing high technology computer equipment. It is also home to a handful of colleges and the 50 research centers that correlate with them. The Buffalo region is home to many high tech research and testing facilities. This resource is greatly improving the economy.

Black Rock's main commercial corridor is Niagara Street. This street runs along the water straight to downtown Buffalo. It is an existing commercial and cultural corridor of the city. To the west of Niagara Street and closer to the water is Interstate 266. This is the barrier physically between the pedestrians along Niagara and the waterfront as a recreational entertainment space. There is only one semi-pedestrian access point via an underpass to get to this prime waterfront area. This area, if used to it's potential, would be a great amenity to the people of Black Rock, Buffalo State College, and all of Buffalo.

The area in Buffalo defined as Black Rock actually covers a mix of diverse uses. It goes from isolated modern high rises on the water to small town main street feel to inaccessible industrial areas. For this reason it is hard to define the walkability of the area 5. For this site it was necessary to focus even more on where people would be living and use that score. This thesis isn't meant to design a whole new neighborhood, but to help it's citizens take a fuller advantage of their waterfront location. So for the purposes of researching and analyzing the amenities in the area; Black Rock scores a 32 out of 100 for walkability. It is a car dependent community with railroad and highways segmenting the area. This area is in desperate need of a public space that can be enjoyed year round.

All three cities have suffered from population decline since the end of their peak but have attempted to diversify to more contemporary fields to rebuild the economy. Still, there is little growth and progression in these focus cities. There are plans to move forward, but nothing

exciting and new is happening. Things are changing at a slower than average pace. Citizens need a visual interest to spark a new flame in the city and to move on from the post-industrial transitional phase.

HISTORY OF PRECEDENTS

These precedents were chosen to compare and contrast the amenities offered by “successful” or “thriving” neighborhoods and sites. These precedents were determined by the cause of decline, recovery measures taken, and progress made. Three precedents were chosen to physically examine and deconstruct. All three cities have an original industrial area that has been redeveloped, colleges near the downtown area, dense office core, and a distinct area commerce.

Phoenix AZ began as an agricultural settlement on the Salt River over 1000 years ago. It’s modern history repeats this. In 1867 the same historic land was once again settled for agricultural purposes. In the 1900’s Phoenix became a distribution center, and by 1940 an industrial city. It is now dependent on tourism, shipping, technology, and services to sustain the economy.

Encanto, a neighborhood in Phoenix, scores an 83 out of 100 on walkscore.com; making it a walkable area. It is one of only 3 fully developed areas in Phoenix 6. Encanto lies approximately two miles north of downtown Phoenix. It is a strong residential neighborhood with a dense office and commercial street to the east(7th Ave.) There is a hospital in the neighborhood as well as an indoor mall and street side shopping. It was obvious after research that all of Phoenix has a suburban context; there is a lack of density and pedestrian activity around the city. This is noted, the city however still grows at an impressive rate and therefore it was relevant to the research at hand.

Minneapolis MN began as a logging and flour milling town in the early 1800’s. The St. Anthony Falls is a natural fifty foot elevation change on the Mississippi River. This natural waterfall was useful for powering these early industries. By the 1930’s all of the lumber milling and most of the flour milling had left the city of Minneapolis. Today, Minneapolis is considered the financial center of the Mid-West and an educational center as well. This city escaped most of the problems that cities face when its time for deindustrialization because it was already in transition to be a service based economy. Minneapolis was never fully industrialized; it went from early industry to service industries and light industry which it still supports today.

Riverview is a neighborhood on the east bank of the Mississippi River. It is directly adjacent to downtown by using the Stone Arch Bridge or the 3rd Avenue Bridge. The area has constant construction or rehabilitation of old industrial buildings going on. There are many opportunities for the pedestrian to access and enjoy the waterfront. Riverview at Main Street SE and Third Avenue SE scores a 91 out of 100; making this area a “walker’s paradise.” There are a great mix of civic amenities and housing options in the area. There are two University of Minnesota Campuses a mile south of this area and downtown. The city has revitalized the waterfront, making it a destination for citizens and visitors alike. There is a strong office core in the downtown area giving the city definition. Minneapolis has a wonderful balance of work,

recreation, and civic needs that has blossomed a beautifully balanced city.

Jacksonville FL is a city that has successfully progressed with significant economic change. This city began as a dairy town but as that business declined other companies stepped in to fill the economic gaps. Services such as financial, biomedical, and insurance companies diversified the business climate of Jacksonville to stop the decline that all manufacturing towns face. Jacksonville is a navy town and a large portion of the people stationed there end up relocating and living there. Jacksonville supports manufacturing as well as import/export, television, and service industries. This is successful in part because of the incentive programs that the city and state offer to businesses that are willing to expand or relocate into the city. Architecturally there were steps taken to provide spaces for these new companies and their growing work force.

The neighborhood of San Marco was designed to imitate Venice Italy. Short blocks and pedestrian orientated space makes this area walkable and desirable. Originally it was farm land along the St. Johns River. This land was developed along par with the city. In 1921 the South Bank was connected by the Acosta Bridge to the city. This is when San Marco became an entertainment and shopping destination. Today, San Marco is a small community south of downtown with recreation and activities along the waterfront. It scores and 80 out of 100, making San Marco “very walkable.” There is a hospital and three higher education schools in the area. These as well as other civic amenities make San Marco a desired place to live.

The research is an exploration of cities and their physical amenities. The three previous precedent cities were chosen based on successes such as: keeping or growing population, staying above the median income, re-utilizing historic industrial areas, and diversifying the economic base. Once they were chosen, they became part of a physical analysis and comparison to the three site cities previously discussed. The hope was to come to a conclusion that the amenities that a city provided actually affected the population and overall success of the economy.

ANALYSIS

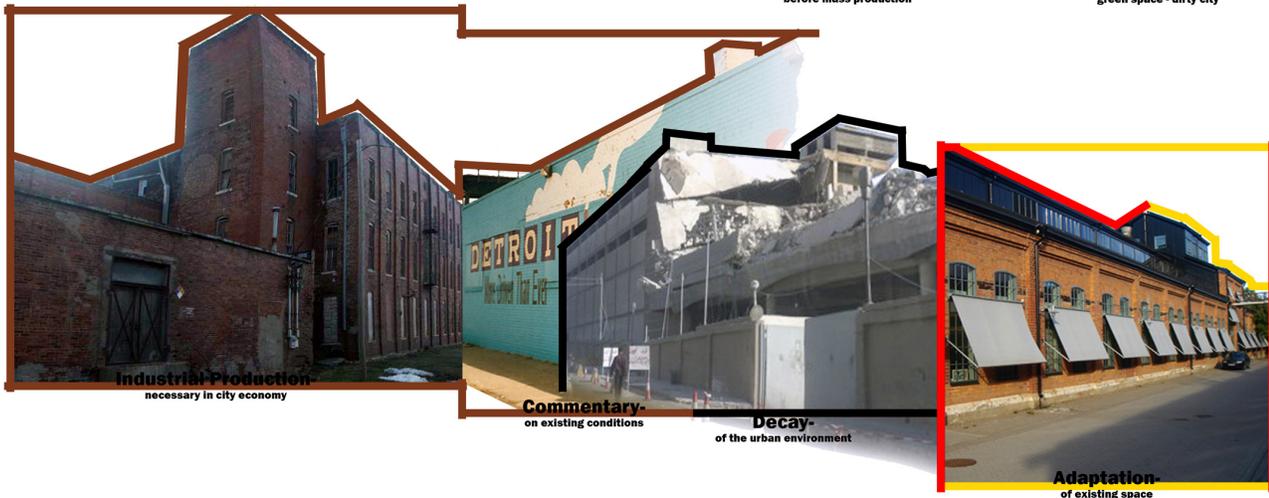
When an environment provides social needs such as churches, schools, cultural centers, police stations, and hospitals, potential businesses will see a strong community and be willing to relocate people to the city. This theory helped come to a conclusion of what is actually missing in these site areas; and ideas of what could be altered to make these sites better places. This physical analysis was used in tandem with research to make informed decisions on an urban proposal. Mapping the current systems of the city including amenities and arrangement and comparing the two became a the main analysis vehicle to further ideas. Some of the layers included in the analysis were: civic buildings, public spaces, industrial areas, transit systems(public), commercial areas, residential areas, abandoned lots and barriers. Besides the physical research, there was population research, and qualitative studies of people’s perception of their city.

While researching it was obvious that there were some commonalities with the three sites. They all seem to have unused or under used spaces, sparse building along a busy path,

unclear spatial uses and, a lack of destination in the area. All three cities also have a major road cutting off pedestrian access to the waterfront. This is the problem that this thesis is focused on. It is important to give the 21st century pedestrian access to the waterfront for recreation and public enjoyment. All three cities have put in an effort to allow this, but this thesis is exploring ways to make the waterfront more active, enjoyable, and usable space. There are also city specific problems that were uncovered during the analysis.

The money coming into Detroit through people's income is escaping to the suburbs. This is because the basic amenities that city dwellers are looking for, such as housing variety, safety,

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Picture collages to explain the evolution of the site

and public transit are not offered in the city. In the neighborhood of Islandview there is nothing that would entice somebody to relocate their life and move here. There is a chance to redevelop Jefferson and make it a commercial connector to downtown. Right now the road itself acts as a barrier to anyone trying to cross it. There needs to be a solution to the intimidation of the road to the pedestrian. Some of the solutions could be to bridge it, to lower the speed limit, cut down the amount of lanes, add a boulevard, or add mass public transit. Detroit has had talks about redesigning public transit in the area. The biggest shortcoming of Detroit is a lack of public transit.



Using public transit to connect this area to the center of the city is also an option that would hopefully lower the automobile traffic on Jefferson and bring people out to walk around. This would also give the pedestrian the option to access the Riverwalk. Proposing a public project to connect Gabriel Richard Park to the Riverwalk would give people the desire to come to this part of town. This could be a commercial project or a cultural project; it could include housing, education, offices. All of the uses bring people to a space for a long period of time. These solutions to these neighborhood problems are a few ideas to help reweave the urban fabric of the area.

South End, Springfield is a small area within a small city. There is shopping on Main Street, and residential. There is space along the water to integrate a riverwalk. This area could become a cultural center for Springfield. The only museum in the area is the Basketball Hall of Fame. If this space was used for entertainment it could be a destination for young people throughout the Knowledge Corridor. This area of the city has approximately 200 feet of road that has to be crossed before one can access the water. While creating this destination on the water is desirable, the road is a physical barrier that would have to be overcome. With the addition of cultural and entertainment attractions, the South End could become a destination for people from all around.

The Black Rock area in Buffalo is large; it includes a variety of uses from commercial to industrial, from residential to civic. There are a few uses that could be brought in to replace some of the less effective existing land uses. Niagara Street is already a commercial street, by infusing this street with more uses it can become a "destination" place (aforementioned.) This includes densifying the street and building up. Most of the street is only one story which does not work with making a place mixed use. Adding office and residential living above the stores could bring new types of people that historically have not resided here. Public transit would be a great benefit for this area. It would cut down on the traffic and give people that do not want to own a car the option to do so. These are all secondary to the main thesis idea of revitalizing the waterfront.

Connecting the existing public park system to the waterfront in Black Rock would give bike riders, walkers, and other leisurely people an introduction to this area. It would be beneficial to include a boat rental for people that do not have a boat at the docks. Adding a cultural attraction or civic amenity on the waterfront is also an option and would be unique for the Buffalo area. It could tie in with tourism from Niagara Falls, or it could be an educational resource for the colleges in the area. Bridging the highway is the largest issue to solve before people can easily access the water. Currently the access is through an underpass. Typically, people tend not to go toward something they cannot see; therefore, a bridge is not the best option. Working with the topography it is possible to connect the water's edge to Niagara Street. This connection would increase viability for both development projects and make Black Rock a more desirable place to live. These ideas of Buffalo's waterfront will be furthered into an architectural thesis.

There are non physical changes that also need to be made to help these cities move forward in a postindustrial economy. These cities need to educate the people that have been displaced from their livelihoods. Some states have started this, such as Michigan's, No Worker Left Behind program. These initiatives help people transition into a new job, similar to the actual economy as it shifts. Enforcing mixed income housing is important to give people equal opportunities to live in certain areas. These changes are necessary to rationalize development.

Including working and residential within walking distance from one another gives people a chance to walk to work. It also means that these areas will be more active throughout the day. Improving mass transit also gives people the option of owning a car instead of it being a necessity. Adding cultural centers, public points of interest, and tourism are all ways that will help create interest in corporations looking to relocate. This boosts the economy, the population and the moral of the city when new business is brought to the area.

There are also commonalities within all three cities as to the causes of blight. Lack of planning or misplanning are the obvious causes. These however were probably not done consciously, therefore will not be considered. There are other causes for a city to start to crumble; deleterious land usage, or unexpected change in use could ruin an entire neighborhood. Hypothetically think, if your neighborhood flour mill (light industry) became a car manufacturing plant. There would be changes in where people worked, what the area looked like, and even the smell of the neighborhood would change. This changes the value of the neighborhood. People move away and the urban fabric frays. Cities cannot recover without restoring their urban environments and helping disadvantaged populations back to work. As the city restores itself people become interested and more projects will come to realization.

CONCLUSION

There must be practical uses such as office buildings for work but companies also look for amenities such as living conditions and civic services to confirm the location will be successful for years to come. How can an architectural intervention influence business in promoting positive growth in rebuilding a city? This can be accomplished by executing an architectural thesis on a neighborhood scale for a civic project. Focusing on public amenities will allow for maximum impact in the neighborhood and the city.

This is a chance to rebrand the area of Black Rock as a cultural recreational destination in the region. The land once used for industrial manufacturing is no longer serving its purpose. This land deserves a new 21st century purpose. A place that ties back together its postindustrial surroundings, brings them forward, and into the future. It could be the center of rebirth and reconnection of the city fabric. Taking a post industrial waterfront area and making it an exciting pedestrian space will give the inhabitants new places to visit and appreciation for their waterfront location. The experience on a walk to the water is a sensorally exciting experience. This human experience is the basis for the architectural response to come.

END NOTES

1 - The inspiration and direction to work on the waterfront exclusively came from this section in the book on stages of development in post industrial cities. Richard Marshall's, *Waterfronts in Post-Industrial Cities*.

2 - Commonly known as the Uniroyal Site.

3 - Although it is common for cars to drive around 45 or 50 miles per hour.

4 – The area deserves the name. There are 45 higher education centers in the metro region.

5 - Within 3 blocks the score changes from 2 to 60 out of 100.

6 – It is possible that this research is out of date considering it came from the 1980's and Phoenix has grown substantially in the last 25 years. In the future it might be appropriate to state that this is one of the more historic neighborhoods.

PRECEDENT ANALYSIS



Jacksonville, Florida



Throughout the precedent and city analyses are the maps that show the analysis of urban amenities and what each city and neighborhood offers.

Jacksonville, FL.

HISTORY

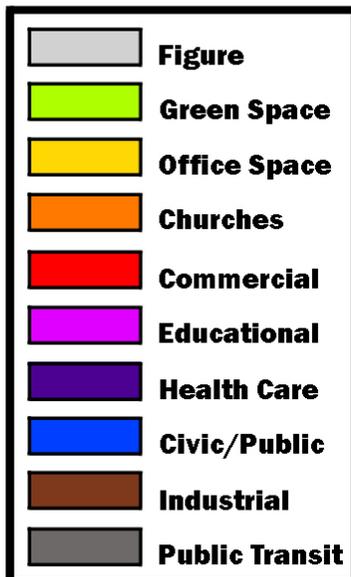
Jacksonville was farm land until the end of the 1800's when a railroad tycoon bought the entire peninsula south of the original Jacksonville area. More development began after 1921 when the Acosta Bridge was built. This developed into San Marco. The plan of San Marco is based on the Piazza di San Marco in Venice, Italy. It is a distinctly public area with commerce lining the streets and gathering spaces scattered throughout. There are varied public and private spaces along the waterfront. This is also true for Jacksonville. Jacksonville is a viable postindustrial city. It's history was in dairy and paper production and today it's economy is supported by transportation, aviation, and financial companies.

GEOGRAPHY

Jacksonville is on the north east side of Florida. The weather is what would be expected of a coastal southern city. The highs are in the 90's and lows in the 40's, it is a temperate climate with high amount of precipitation. The warm weather allows Jacksonville's citizens to enjoy pedestrian life in the city. The St. John River flows through Jacksonville from north to south but it creates a peninsula that houses the San Marco neighborhood. The neighborhood is located at the south end of the Acosta bridge. San Marco is based off of the design for Venice. It is a small compact neighborhood that houses small commercial and civic uses as well as higher end residential.

ECONOMY

Jacksonville has constantly maintained it's population and economy above the national average. This is due to it's diverse economy, and the resources provided to the citizens. San Marco, a neighborhood in Jacksonville, is thriving with a growing commercial business district and population. It has a small town feel and a defined neighborhood.



Today, the combination of aviation, transportation, distribution, light industrial, and naval stations provide employment for a variety of people and allows for a stronger economy. It is a great example of a city that has successfully transitioned from a manufacturing based economy to a service based economy. The aviation field along with 5 military bases in the area support a large piece of the economy. The benefits range from aviation schools to newly relocated business and military contracts.

ANALYSIS

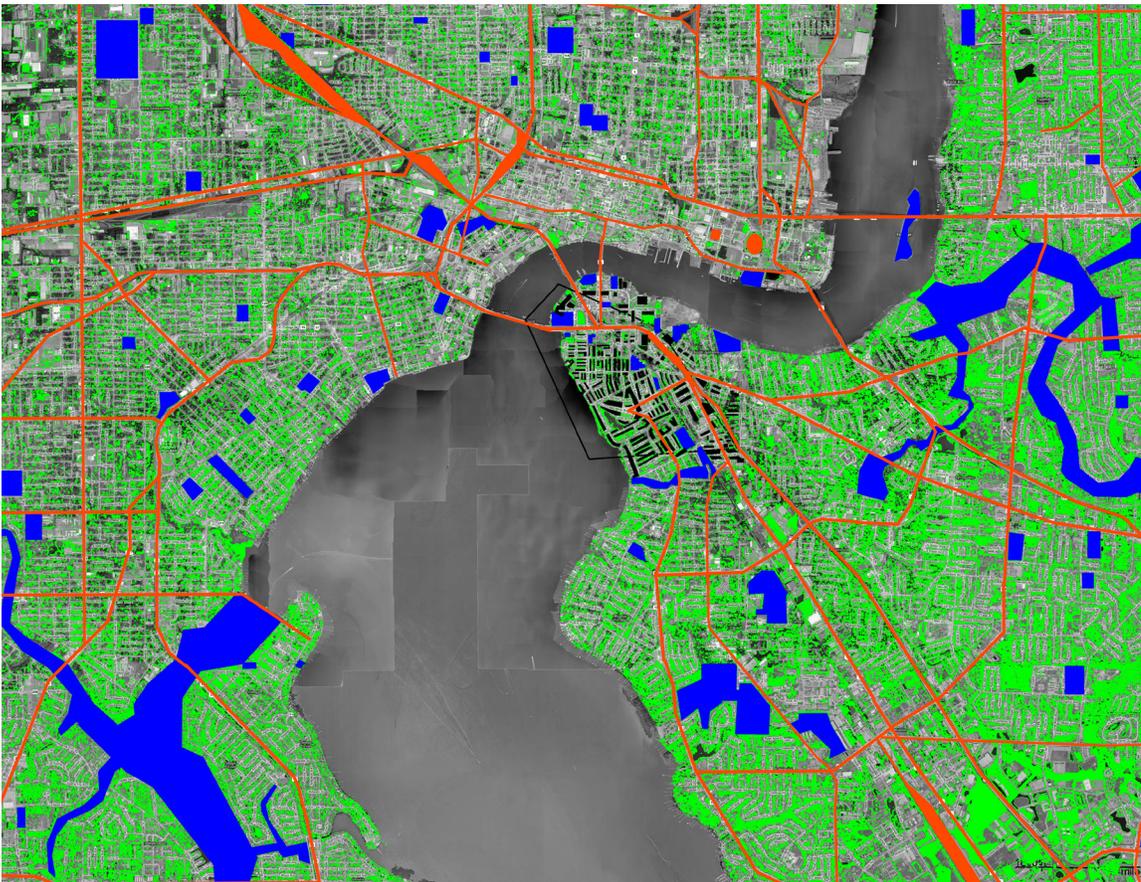
San Marco is a symbol in Jacksonville of youth and energy. Because it provides so much for the community such as commercial districts and hospitals; San Marco scores an 80 out of 100 for walkability. This thesis is attempting to develop an area that will be a destination for the inhabitants to enjoy the city and it’s amenities. San Marco neighborhood is small in size, but it as known for the commercial area and cultural center. The city itself only scores a 36 out of 100. The





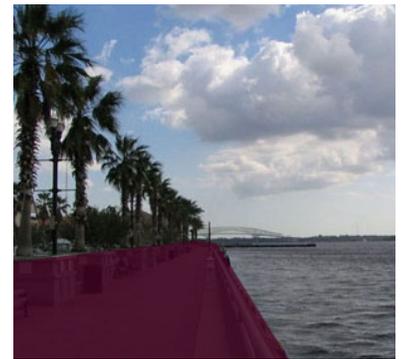
success of the neighborhood is what intrigued the research and analysis of Jacksonville.

Jacksonville and San Marco are home to tourism, service based businesses, and commerce. San Marco is across the river from Jacksonville's downtown area and business district. In the downtown there are two sides. The east side holds the industrial uses along waterfront and the west side is home to the office district. It is not very common to see the industrial area operate so close to downtown, this is because of the large amount of manufacturing that Jacksonville provides. Along San Marco Boulevard and Kings Avenue is where the major commercial areas are. There is green space along st. Johns River for all the public to enjoy. Although this neighborhood is high income housing, there are activities for all people to enjoy. Most of the old industrial land in the area has been repurposed and none of the historic buildings in the area remain. It has become a residential neighborhood without evidence of Jacksonville's past.



RECOVERY METHODS

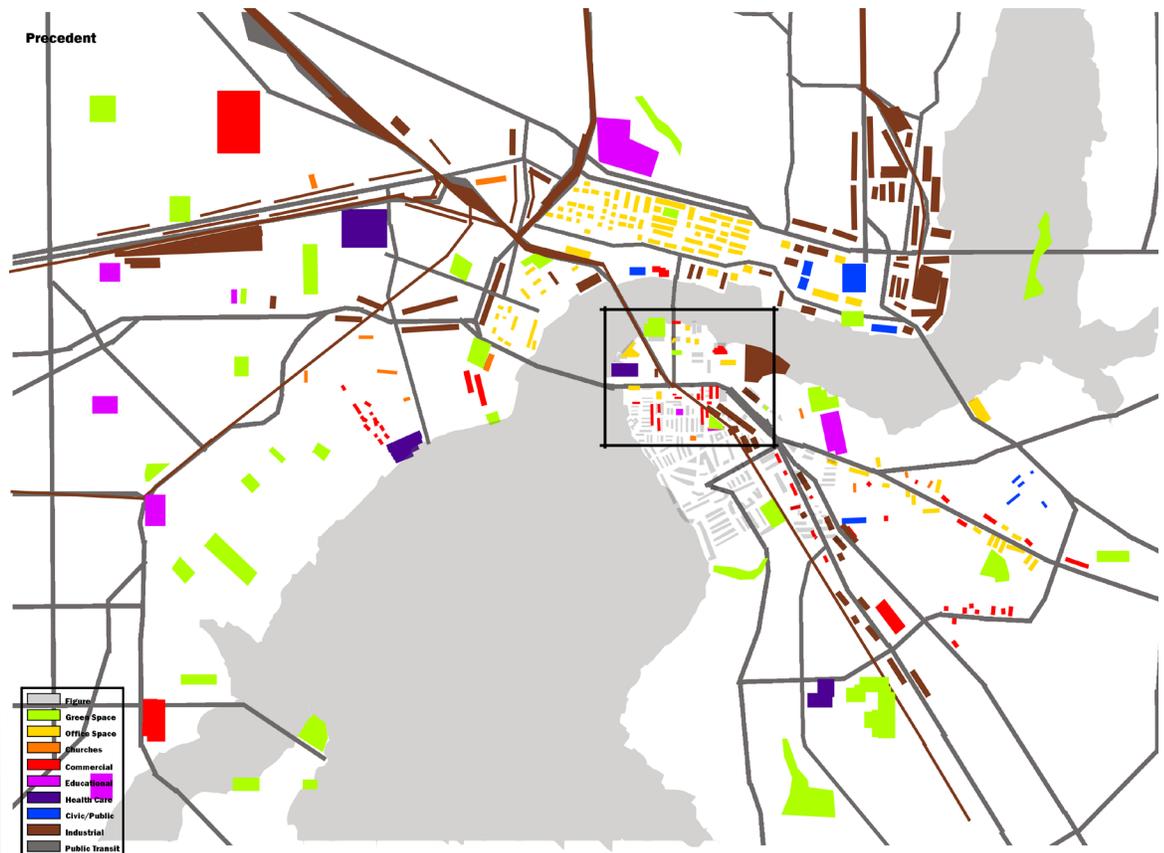
For job training and retraining the Workforce Development Board uses federally funded money to help citizens with employment placement and job training programs. This program along with the constantly growing job market makes it easy for the economy in Jacksonville. The cities amenities attract new business, some of the amenities include recreational, cultural, and planned growth. The city has implemented a plan to renew all of the downtown area to make it tourist friendly. This is important for cities to have a pleasant downtown area.



Minneapolis, MN.

HISTORY

Minneapolis sprung up in the late 19th century to produce flour and lumber. The natural waterfall, farmland, and the



Minneapolis, Minnesota



redwood forests that surrounded the area made for good business. By the beginning of the 20th century Minneapolis led the nation in lumber and flour milling. Historically most of the mills were on the east side of the river. This in turn made Minneapolis a transportation center. With all of the exports from the area the economy prospered. As the redwood forests were devoured the lumber industry was forced to move to less convenient placements. Around the same time half of the flour milling district exploded causing a huge problem for the downtown economy. The flour milling started to relocate to other cities such as Buffalo New York where a General Mills plant exists today. These two problems put Minneapolis into a down turned economy until WWII.

GEOGRAPHY

Minneapolis is to the east of St. Paul which is the capital of Minnesota. These famous “twin cities” are hold the only natural waterfall along the Mississippi River. The weather of Minneapolis is similar to most of the northern states; although it experiences higher winds in the winter and more humid times during the summer. This extreme temperature shift is not seen in any other large city. It comes from the northern Canada and arctic winds that come straight into the city. This is probably the explanation for the large amount of elevated walkways that the city has built in the last 40 years. The neighborhood of Riverview is on the west side of the river hovering about twenty feet above the Mississippi River.

ECONOMY

After WWII Minneapolis became a leading city in computer and electronic manufacturing. Minneapolis is also home to many higher education institutions. The growing economy has supported an urban redevelopment project. Thanks to the growing economy and civic projects, the population has bee growing since the 1960’s. The state also funds 5 different programs to educate and help place employees with businesses. The city also offers job placement programs for elderly, handicapped, welfare and young adult workers.

ANALYSIS

Minneapolis was never industrialized to the level that Detroit, Buffalo, and Springfield were. Minneapolis is the most similar precedent in comparison to Detroit, Buffalo, and Springfield in terms of climate, history, uses, and expectations of the

citizens. It is an area full of mixed use residential and commercial infused in the old milling factories. It is known as a growing, healthy, pedestrian friendly area in the heart of Minneapolis. The neighborhood scores a 60 out of 100 for walkability. However, Riverview at Main Street SE and Third Avenue SE scores a 91 out of 100; making this area a “walker’s paradise.”

After the amenity analysis Minneapolis stood out as a city with the most intense mix of uses. Minneapolis has waterfront parks, historic industrial reuse buildings, office, commercial, civic, public, and residential uses close to the waterfront. There are rail lines coming into the city from 8 different directions and a few of them are still utilized. University of Minnesota is directly on the south waterfront, this provides a large population access to the Mississippi River. Most of the office is located in the city center while the industrial uses are pushed to the edge of the city.



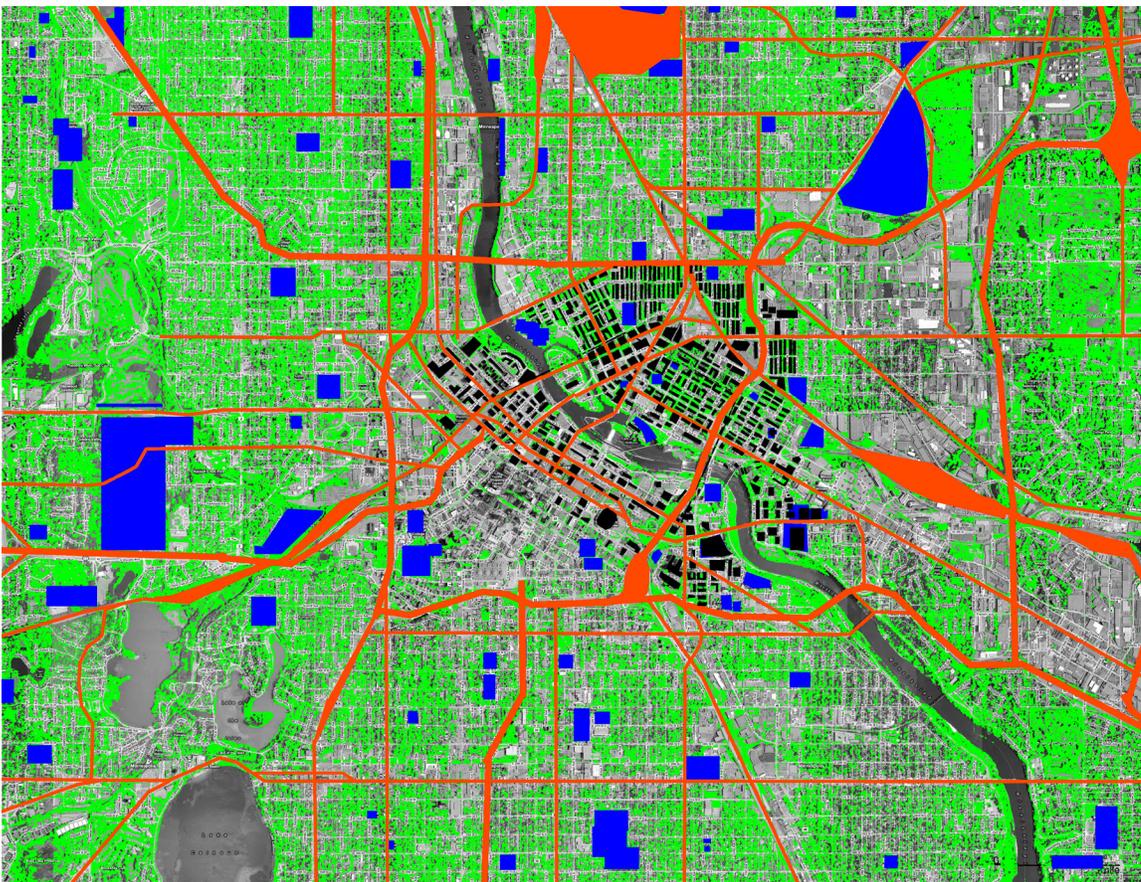


In Riverview there are a large amount old lumber and flour milling buildings that have been re purposed for modern use. This is important for a feeling of history and strength of a city. Keeping these buildings instead of destroying them gives citizens a sense of pride. When cities destroy buildings like these it is usually because it costs too much to repair them. The investment becomes important for tourism, identity, and variety in the architecture. Rivertown is a vibrant community with a sense of pride that is unique to the place. It is a younger community with students and young professionals mostly. This neighborhood has become a walkable haven thanks to the people that have made this happen.



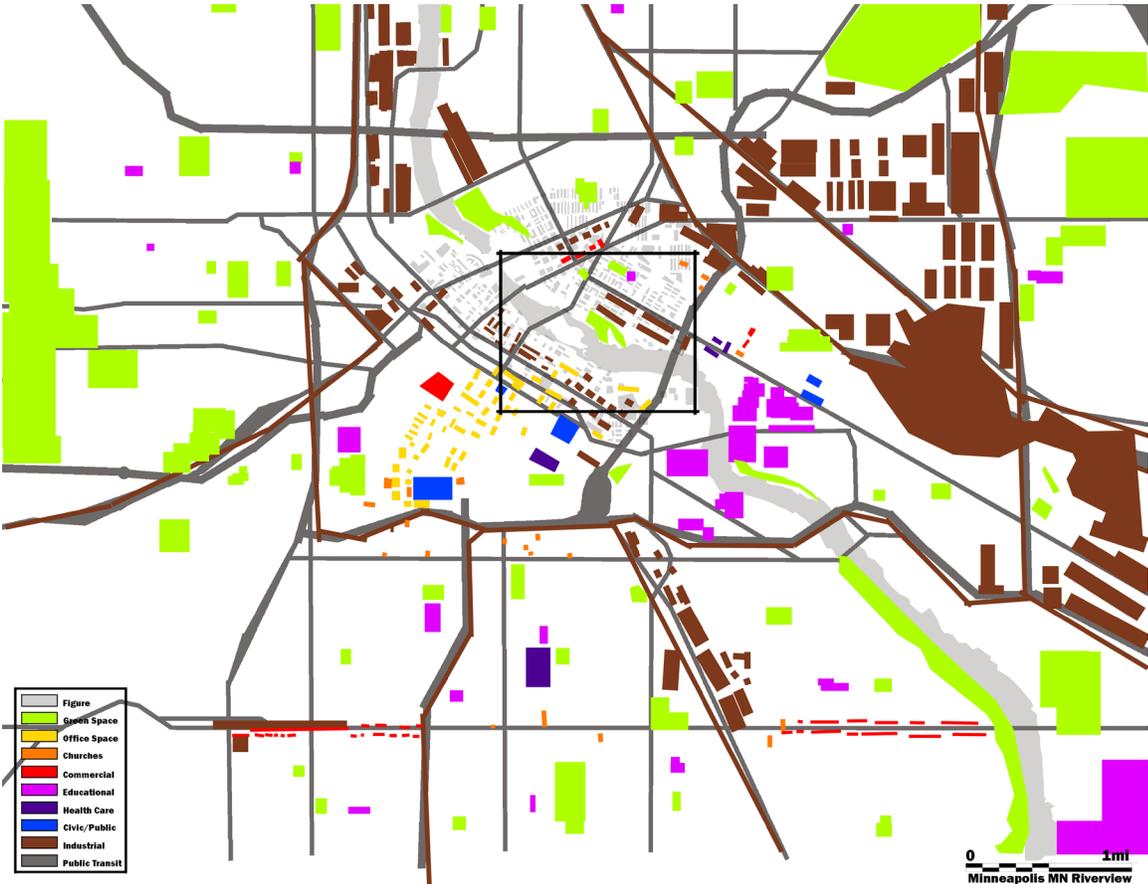
RECOVERY METHODS

It has also had a waterfront makeover. The city planning and city council have approved “new residential, commercial, and cultural developments along the riverfront.” ****The city has also proposed a reuse of the now obsolete rail road corridors. Making the railways a pedestrian space helps bring



the history of Minneapolis to the common citizen. Minneapolis has put a hold on all industrial new construction in the city. Their reasoning being that light industry and service industry space is more important to the economy. This has not been received well by the city and has even been taken to court.

The study of Minneapolis, Minnesota shows that it is a city that escaped the social and economic issues of deindustrialization. There are no lasting effects the city has suffered from it's past unlike Detroit, Buffalo, or Springfield. The economy and population have continued to grow for the last 60 years. Nicollete mall, Franklin Portland Gateway, as well as many other residential projects have brought new life to the city. These are the successful completed projects that Minneapolis has completed recently. There are however, mixed feelings about the 8 miles of elevated walkway dispersed through out the downtown area. These were began in the 1970's and have taken away from the street life



Phoenix, Arizona



in the city. Some people believe that they are necessary because of the extreme cold, but the negative effect on city life should be enough reason to stop building them. There is also a new light rail to connect the airport, Mall of America, St. Paul and Minneapolis. These are mostly improvements to the city's infrastructure.

Phoenix, AZ.

HISTORY

Modern Phoenix came into existence around 1868 as an agricultural settlement. In the 1900's it became a distribution center, and by the beginning of WWII it was an industrialized city. The Salt River was a important resource for the city of Phoenix before industrialism. It fed the agriculture that the people depended on to survive. The Salt River is fed by tributary lakes from the mountains in the northeast.

GEOGRAPHY

Phoenix is the capital of Arizona. It is located in the Southwest area above Mexico. It is a desert type area with artificial irrigation to make the area habitable. Phoenix is located centrally within the state. It is almost surrounded with mountains or cliffs. Encanto is located less than one mile north of the city center. It runs primarily along Central Avenue. The neighborhood is known for having a strong residential and commercial center. It also supplies a large amount of office space. This combination makes Encanto very walkable. Outside of this area however people must rely on cars. Phoenix is a spread out city and has a suburban feel. This, along with the heat makes it unlikely for people to walk around and experience the space.

ECONOMY

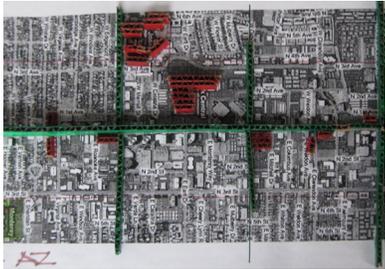
Modern Phoenix came into existence around 1867 as an agricultural settlement. In the 1900's it became a distribution center, and by the beginning of WWII it was an industrialized city.

It's relevance to the postindustrial sites comes through analyzing the success of a changing economy and a solid population. It is not a city that can be compared geographically because, historically the waterway by a city

was used for shipping. Today, because of the amount of shipping to the area, a majority of the food and resources are imported to Phoenix. The river was never used as transportation way but as a source of life. It is now a recreational river used for boating and water sports.

ANALYSIS

Encanto is a neighborhood north of downtown. It is known as the best neighborhood in Phoenix because of the mix of office, commercial and residential areas. Encanto scores a 70 out of 100 on walkscore.com but the center of the area at Central Avenue and Edgemont Avenue scores an 83 out of 100, making it a walkable area. There are local state and government funded programs for Phoenix residents to help find jobs. Local programs consist of locating the business within the enterprise zone of Phoenix. This provides tax credits to these companies. The state gives incentives to technology and movie based businesses. There is a lack of strong religious ties due to undeveloped history of

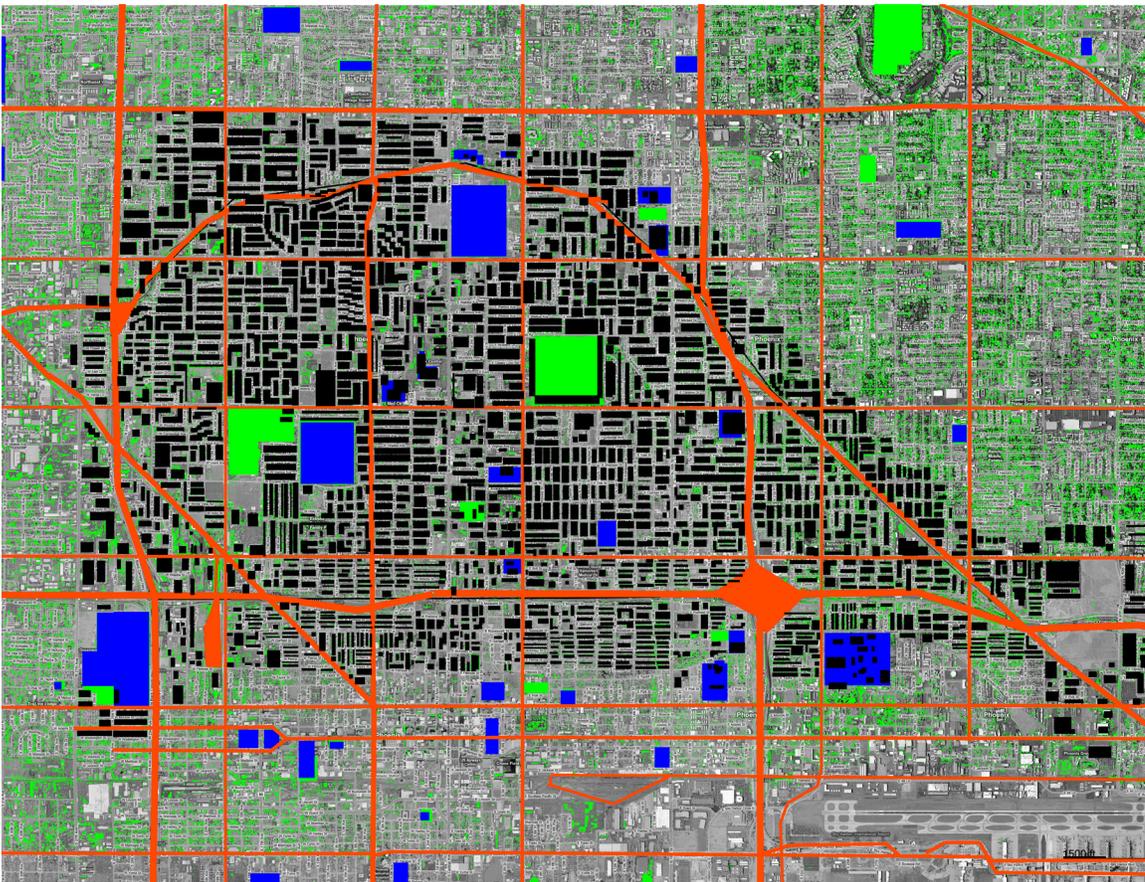




neighborhoods. Most of the population relocates to Phoenix causing weaker social interactions.

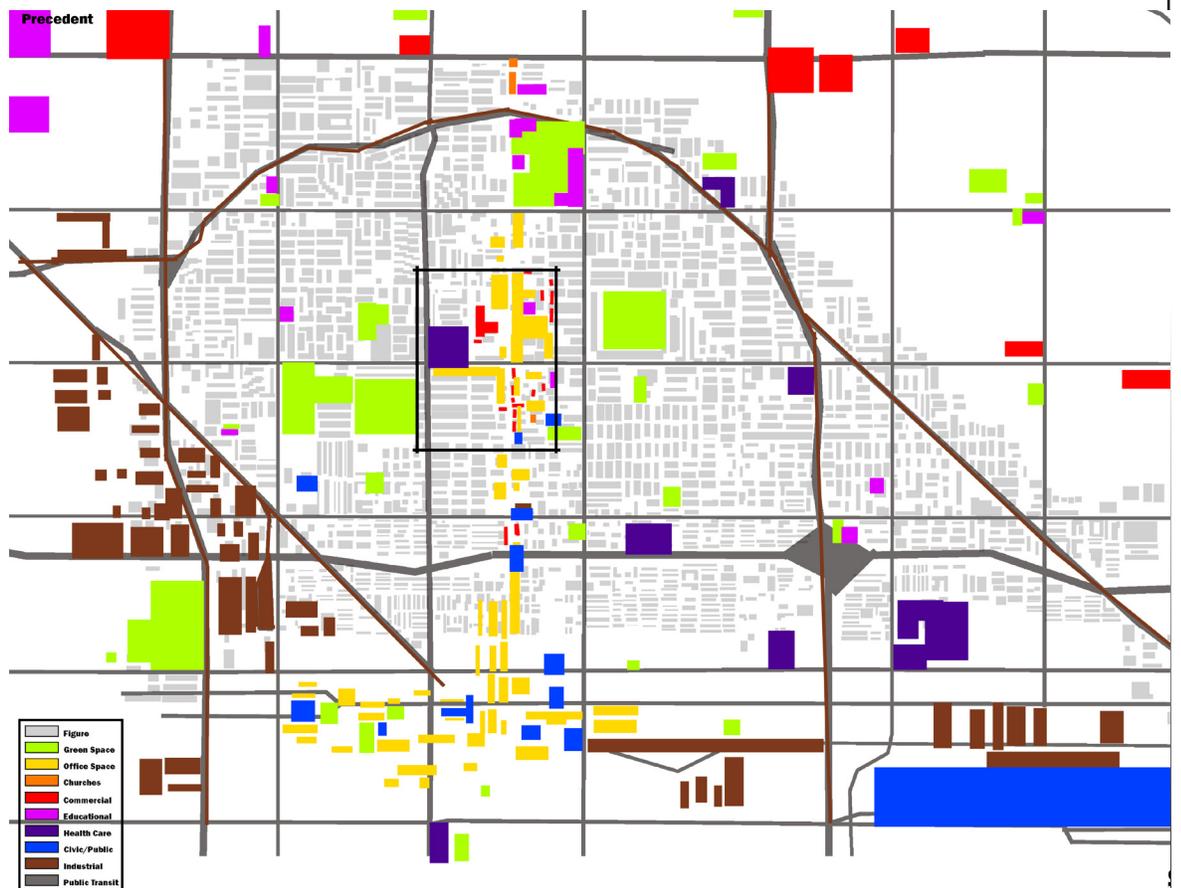


The amenity analysis revealed the strong mix of uses in the Encanto area. The Phoenix downtown also offers the amenities a pedestrian would hope for. There are civic and cultural establishments as well as park spaces and public transit. The airport is only 2 miles from the downtown area and the rail lines come close to the city center. The office is concentrated along Central Avenue while the industrial uses have been relocated to outside the city. The grid use in Phoenix for the street system is easy to use. It is split into half mile blocks divide by main streets. There is health care and educational facilities dispersed throughout the city. One of Phoenix's shortcomings is the lack of higher education within the city. There are however 8 museums and golf courses in the city. Most of the commerce is in strip developments along main streets; further encouraging automobile access only.



RECOVERY METHODS

Phoenix is a city of constant improvement. There is always something to draw new inhabitants to the area, and keep them there. Phoenix is growing and expanding at an extreme rate. The civic center, a research facility, and Arizona State are all new hundreds of million dollar projects. The workforce is expanding and the education level is rising. These are important to having a service based economy.

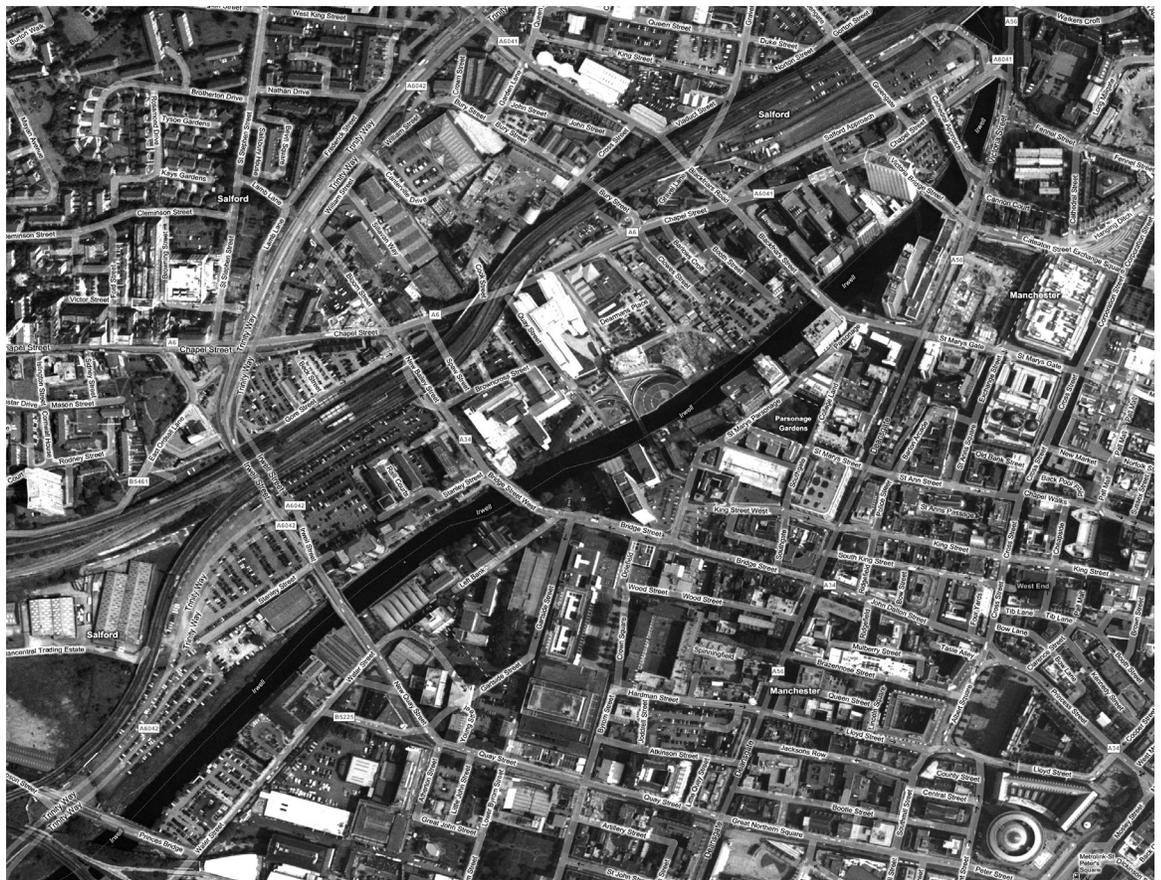


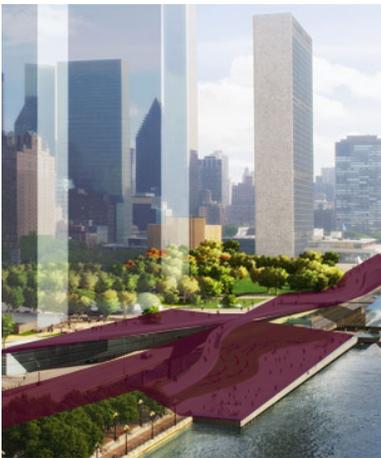
FORM PRECEDENT ANALYSIS



Manchester, UK.

Manchester is similar to the focus cities and precedents in its history and economy. It is particularly interesting to compare its history to Detroit's. Manchester was the world's first industrialized city* (Kidd, Alan- Manchester, A History.) It began as cotton spinning and textile manufacturing. Later, the concentration of production was automobiles. Currently, Manchester is the fastest growing city economically in the U.K. This is because of the vast amount of rebuilding the city has taken on many of times. The manufacturing economy fell, but by the 1980's the city was alive again and had a new financial economy supporting it. Since the last bombing in 1996 the city has been expanding its recreational and commercial uses to accompany the modern city life it has created, and supplying the amenities that modern urban dwellers expect. Manchester's waterfront and public civic space in the city a large part of the city's success. This development had a positive effect on Manchester's economy and is the effect that the current thesis is trying to achieve.





Brooklyn, NY.

The city's past economy was supported by ship building, and miscellaneous manufacturing companies. This was true until 1975 when the job market shifted from manufacturing to service providing. The economy of Brooklyn today is supported by overflow from Manhattan. There are still manufacturing companies in Brooklyn but most of them are small local businesses. The success of this burrow's economy can be directly related to Manhattan; therefore the economy study and comparison is void for this thesis. The comparison is meant to analyze 2nd and 3rd tier cities. The waterfront plans for this area however have been interesting in the reuse of an industrial area. The juxtaposition of edge and dense urban fabric creates an ideal condition for post industrial land reuse.

Portland, OR.

Portland is full of life and activity; this is because of the planning and freedom that the city has offered it's citizens. The success of Portland is probably due to the strict land use boundaries around the city. In the mid 20th century when cities were expanding rapidly, Portland was controlling it's growth. For as much boundary control that the city has it is open to actual land use planning. The zoning is based on a flexible schedule of uses and combinations that are beneficial to the citizens. So instead of being a hassle to plan development it becomes a puzzle.

Portland has a full variety of art museums, galleries, and organizations. The people that participate in such artisan communities are usually know for having a positive impact on the city and establishing pride and definition to their community. These communities have influenced the "greenness" of the city. Portland now offers a large stretch of post industrial landscape that has been turned into a beautiful green space. It's historic economy is full of lumber, steel, and aluminum manufacturing. Today it is home to computer manufacturing and shipping. The city's transit organization is extremely varied from bikes to the aerial tram, and subway to zip car. The multi modal transit offered in this city is extremely beneficial to it's citizens and would be beneficial to other urban areas if implemented correctly.





Boston, MA.

Boston is a historically rich shipping, milling, textile, and manufacturing city. Today, Boston's economy is supported by higher education, health care, medicine, biotechnology, and finance. The amount of quality higher education in the area has attracted research companies to the area. The high amount of tourism also supports the commercial developments in the area. Boston Redevelopment Authority has been able to work with a successful core city to redevelop the waterfront. Parks, walkways, civic, and commercial uses have been added to the waterfront to make this area vibrant and bring tourists to the water that holds much of this nation's history.

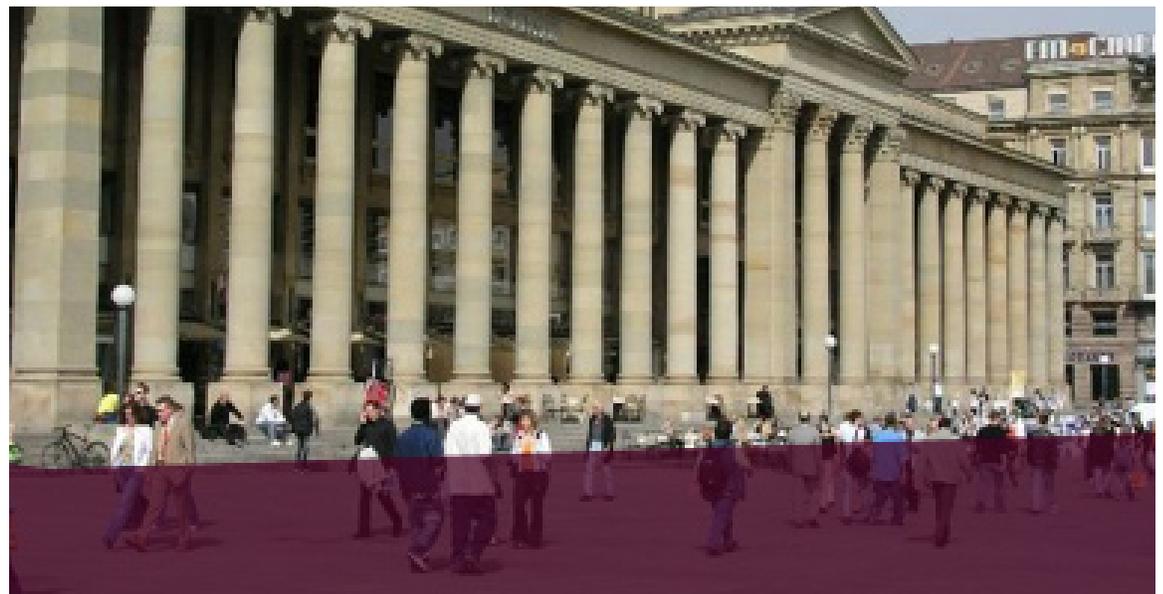
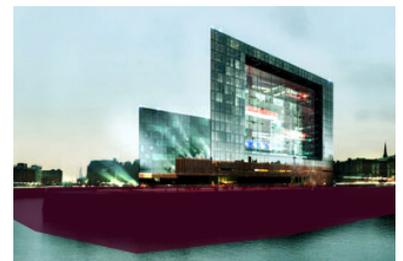
To successfully develop the waterfront the BRA needed a solution to having a surface highway along the waterfront. It was decided that the entire highway would be buried to allow for easier circulation in a busy area of the city. This aspect of



Boston's redevelopment was studied to determine its success and appropriateness in other areas. Burying the Central Artery Highway was successful in Boston, but because of the scale, cost, and invasiveness of the project it would be impossible to accomplish in a second tier city. More than half of the funding for the project came from the government; meaning the entire nation paid to bury a few miles of freeway in Boston.

Stuttgart, GR.

Stuttgart is known for being the European home of the automobile. This created a central point in Germany for ruling and trade. Until WWII Stuttgart was known as a successful and viable city; because of this it was heavily bombed during the war and massive rebuilding was necessary. After territorial wars resided Stuttgart was no longer the capital of Germany and the city had to continue on a different path. It continues as a tourist and commercial hub with financial and automobile production a major part of the economy. The cultural history continues today with museums and constant art competitions always making a modern impact on such an old city. Stuttgart is an economic precedent for the city of Detroit. Both cities have a background as a hub of automobile production and devastation. Stuttgart, however has been at least partially successful in restoring the greatness of the city.





San Francisco, CA.

San Francisco was a gold mining town and all later industries are due to this. The city began manufacturing railroad parts and developing a banking business. More manufacturing began as people flocked to California. By the 1980's San Francisco lost most of it's manufacturing to Oakland and tourism became the most important part of the economy, along with high tech industry. The city is culturally diverse and accepting but not viable for all income levels thanks to gentrification of neighborhoods. Most civic sectors in this city have been successful throughout time. This is not the point of the study therefore the information gained could not be compared to 2nd tier cites.

The information is useful in researching successful land usages. Like Portland, San Francisco has chosen as a city to stay small and make the city a desired area. This choice to control growth means land becomes valuable. San Francisco took on a huge project to completely remove the



Embarcadero, a 2 story highway along the waterfront, to make room for pedestrian activity. The Embarcadero is now a commercial hot spot on the southern edge of San Francisco. The removal of a convenient but distracting highway has revitalized the city. This is not the goal of this project, however it is a surface solution worth considering.

Barcelona, SP.

Barcelona was founded and used predominantly as a port city. During the 18th century textile milling and machining became the early industrial momentum of the city. Today, Barcelona is home to many service industries including information technology, printing, publishing, and telecommunications. Barcelona has grown and changed over the last 2,000 years. It's success is in the people and the forgiving nature of the city. It is flexible and changeable for it's citizens. These qualities are hard to find in modern cities. Even as high as the government, this city can change as the economic or social conditions change. This is where Barcelona's success lies.

Barcelona's recent waterfront development has been nothing short of spectacular. Most of the development was completed before the 1992 Olympic games that were hosted by the city. Barcelona is known for embracing diverse culture and arts. It is home to many art and history museums. Transit is comprehensive in the city with trains, trams, buses, taxis, and bike rentals. Buffalo and Barcelona are similar in the cultural and art diversity within the city. Buffalo could benefit from some of the flexibility that the Spanish government offers developers in Barcelona.

Baltimore, MD.

Baltimore is an east coast seaport in the Chesapeake Bay. It's original uses were for sugar granary and later shipping, steel processing, and automobile manufacturing. After these manufacturing uses declined the service industry took hold. Today it is an expanding base of financial, educational, business, and health services. John Hopkins University and hospital are now the two largest employers in the city. As a city there have been moderately successful attempts to educate citizens, and revitalize neighborhoods. Some may argue the success however because of the remaining poverty stricken areas. The port which was once used for shipping





and manufacturing is now home to shopping, entertainment, and the National Aquarium. There are many famous architectural works left by legends over the last 200 years. Ranging from churches to office buildings.

The waterfront is of particular interest because it was at one point in history a collection of abandoned and derelict warehouses. The implementation of recreational uses combined with residential and educational space brought life back to a suffering post industrial waterfront. Baltimore was also the first postindustrial city in the United States to create a waterfront redevelopment program. This has brought attention and praise to the city for the last 20 years. Other cities have learned and benefited from the outstanding development along Baltimore’s waterfront.

Bilbao, SP.

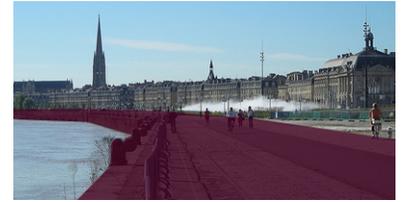
Bilbao was a shipping, mining, ship building, iron, and steel center in southern Europe. Today the heavy manufacturing has subsided and the major banking has taken hold. Seventy five percent of Bilbao’s economy is supported by the service industry. Most heavy industry has relocated to locations outside the city. The city has developed programs for neighborhood renewal and employment skills programs. The geography was important in Bilbao becoming a seaport and industrial center. It’s location and mild temperature were desirable.

Today, Bilbao’s population is still growing and modernizing, requiring the city to modernize with it’s citizens. The city’s plans of modernization have included using famous architects and designers for all renewal plans to draw attention to the city. Frank Ghery’s Guggenheim, Santiago Calitrava’s Zubuzuri Bridge, and Sir Norman Foster’s Metro stops are projects that are known around the world. This city was studied as a fully functioning successful city and a city that has seamlessly incorporated tourism into it’s function.

Bordeaux, IT.

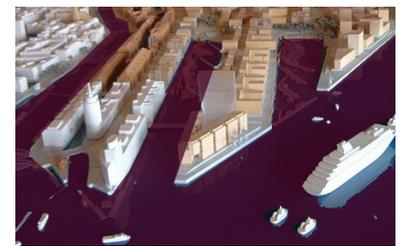
Bordeaux is a city that has supported itself on the wine that is produced. It is an economy that is specific to the land and the region that the city is located in. The economy has been slightly in decline because of competitive wine pricing around the globe. Even with the wine economy in decline the city’s

population is growing. The city is also home to aeronautics and pharmaceuticals. This historic city offers great cultural and educational resources to its citizens. The city is a destination in the region for culture, shopping and entertainment. The development in Bordeaux has been focused on the pedestrian and moving through the city. This circulation makes the entire city function more successful.



Hamburg, GR.

Hamburg is currently the second largest port city in Europe. It is located at the crossing of 2 rivers; the rivers Alster and Elbe create a system of canals through the city. The economy is based around its water transportation. Recently, the development in the city has expanded the tourism. Projects involving famous architects such as Renzo Piano and Rem Koolhaas draw attention to the city and spur other development. The system of walkways along the water in Hamburg is unique to port cities and these special moments in the city are part of what this thesis is trying to accomplish.





Lodz, PL.

Lodz became an industrial center in the early 19th century. By 1825 the cotton and textile mills were opened. The money that the city gained from the textile mills is reflected in the architecture built in the 1800's. The city grew and grew but during WWII the city lost approximately two thirds of it's citizens. After the war refugees moved back into the city, slowly repopulating the area. Today, the city operates a transportation hub. Textile mills are no longer open, but have been restored and preserved for tourism. The city's economy has fully recovered from the past troubles and has moved into the service industry. The waterfront is still be developed as a pedestrian destination. The city's population has been in flux for close to a century along with it's economy but Lodz is recovering and building a modern city that offers new citizens the allure of urban life.



SITE ANALYSIS



Detroit, Michigan



Detroit, MI.

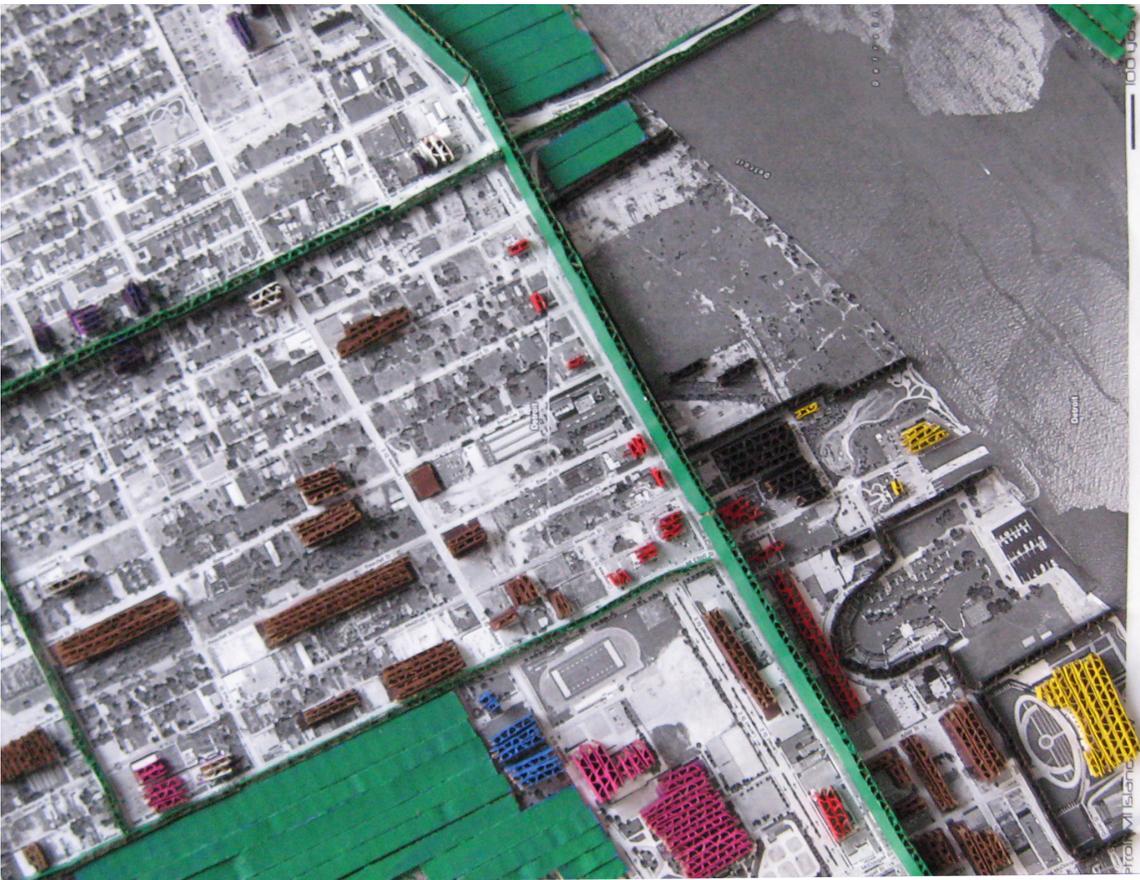
HISTORY

Detroit is a post industrial city that expanded with automobile industry and is now suffering from the decline. With little other business to keep the city alive it is facing some of the worst unemployment rates in the nation (20% in December 2008.) Islandview in Detroit is a neighborhood chosen to study because it includes a mix of the problems that Detroit has been forced to react to since the 1960's. These problems are physical, they stem from political, racial, social, economical, and capitalist mistakes. Most could agree that these problems have resulted in the poor state of the city.



GEOGRAPHY

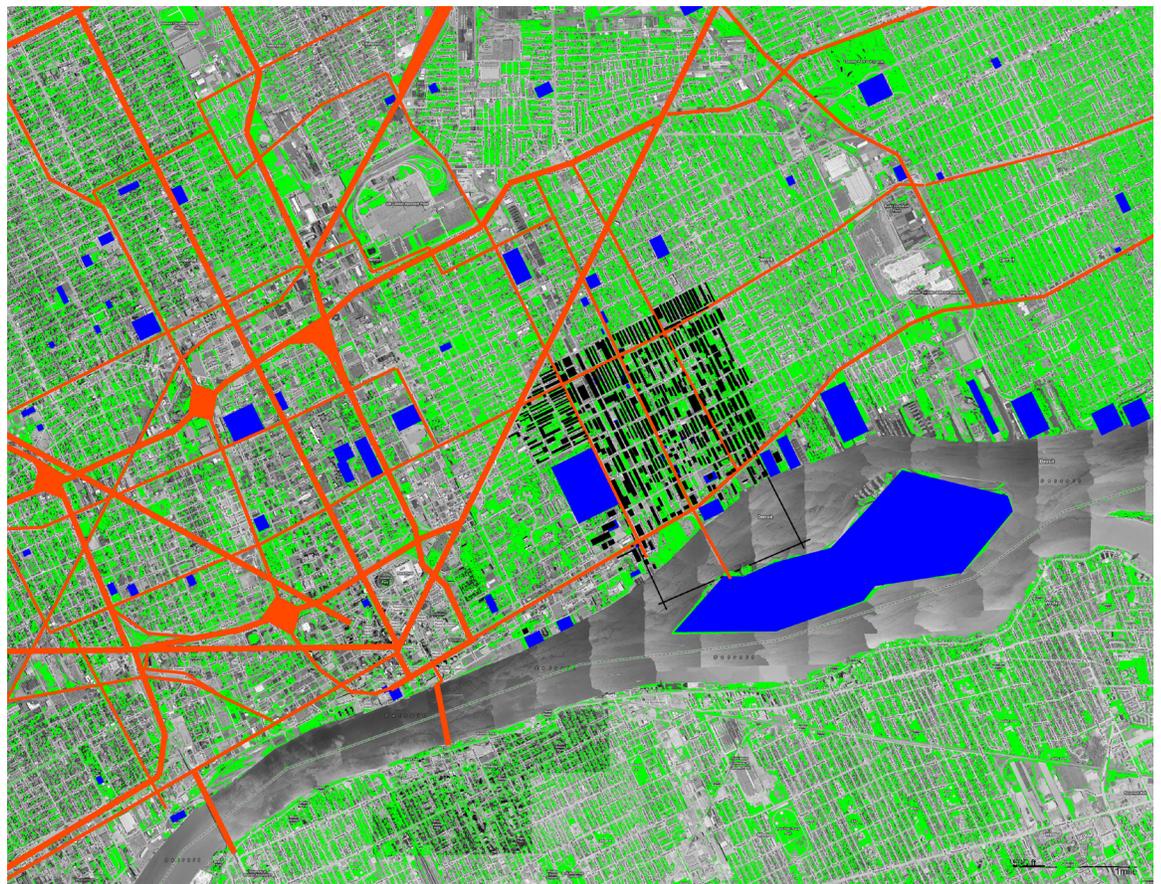
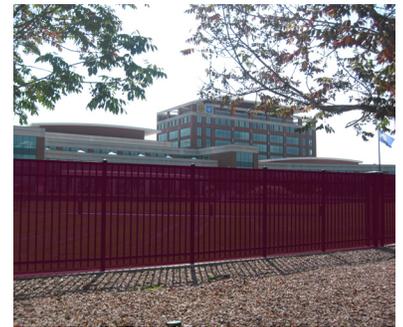
Islandview is the area around the Douglas MacArthur Bridge (Belle Isle Bridge.) The specific area being considered is



bordered by McDougall Street on the west, Sheridan Street on the east. Bordered by Lafayette Street to the north and the Detroit River to the south.

ECONOMY

Detroit's economy has historically been based on industries that have abandoned the city. Today, the small economy that Detroit is surviving from is computer technology, emergent solar panel technology, financial, educational, and remaining automotive businesses. This is similar for most of the rust belt cities that have yet to fully recover from the lost economy. The loss of business results in job loss for the citizens of Detroit; this has led to a shrinking population. As people leave the city there are less tax dollars to help maintain the city and Detroit itself is falling into disrepair. With the shrunken economy and population it is now time to become creative with undevelopment instead of expansion.





ANALYSIS

This area includes new office (UAW GM headquarters), commercial, park, educational, industrial, civic, and abandoned properties. The basic amenities that city dwellers are looking for, such as housing variety, safety, and public transit are not offered in the city. Islandview scores a 26 out of 100 for walkability; making it a car dependent area. Surrounding this site are similar conditions. Although there is not currently a strong population in the area there are positive things to aid in further development.



The combination of uses in the site makes this area a potential site of rebranding the city and rebuilding the neighborhood. Along Jefferson Avenue is a commercial corridor that runs parallel to the waterfront. There is a new incentive for people to set up business along Jefferson and continue the growth of the commercial corridor. With the proximity of the water to this development and the history of manufacturing in the area a successful post industrial design



could be implemented on a small scale to inform users of the site history and it's evolution.

To the north lies the rest of Islandview. A sparsely built area with abandoned lots and light industrial buildings. There are three junk yards in this neighborhood. Along East Grand Boulevard there are approximately twenty convalescent homes and five churches; this is the most successful area within the neighborhood. On Jefferson Avenue there is vehicle accessible commercial areas and park access; this street is one that the city has focused on redeveloping as a commercial corridor. South of Jefferson, towards the water, is where the office and industrial spaces are along with the abandoned Uniroyal site.

RECOVERY METHODS

It is proposed that this area be connected to the riverwalk and the Uniroyal site to become a mixed use residential and possibly a casino. This area has potential but, there is a stigma surrounding the Uniroyal site which has prevented any actual progression. This political and social issue would discredit any planning this thesis would propose. There small scale interventions that could improve walkability and movement in the site along with providing urban amenities to allure people back to Detroit.

Springfield, MA.

HISTORY

Springfield is a small city with a past predating American freedom. It was the home of the United States Army for 174 years until it was closed in 1968. The city's economy has historically been based off of the weaponry business. It was a safe place to store weapons but still have quick access during the early wars in this country.

GEOGRAPHY

Springfield, Massachusetts is situated on the western border of Massachusetts along the Connecticut River. The site in Springfield is bordered by State Street to the north, and Mill Street to the south. Main street is the eastern border and the Connecticut River is the western border. The South End neighborhood is a mostly residential area directly south of

Springfield, Massachusetts



downtown. The site is the area around the Basketball Hall of Fame that sits on the riverfront.

ECONOMY

Springfield's manufacturing employment has been in decline since 1968 however, the service industries have been growing in the area. It is also home to many higher education institutions making up about 20% of the employment for the city. Although the city does not operate as a weaponry it is successfully changing it's economy to support it's citizens and provide a resource to all that are looking for higher education. Providing higher education in the area also appeals to larger businesses that are looking for a new place to relocate. A city with a comprehensive higher education system is a positive amenity and tells businesses that their employees will have the opportunity to continue their education.



ANALYSIS

The South End is the neighborhood being studied. It is the area where the revitalized downtown meets the forgotten neighborhoods of the city. The South End is full of unrealized potential along the main streets and the waterfront. The area does provide commercial, civic, and educational amenities. It scores a 35 out of 100 for walkability, meaning, it is a car dependent neighborhood.

Along Main Street there is shopping and residential functions. This is however not a destination for many people because it not pedestrian friendly. Skinny sidewalks and high speed limits prevent people from actually enjoying the area. Along the riverfront there is a large amount of under utilized space. The Basketball Hall of Fame is the only attraction on water's side of the highway. To compliment this attraction, entertainment and cultural centers could be added to make it a destination for young people throughout the knowledge corridor. The problem is the 200 feet of highway which must





be crossed for a pedestrian to access the waterfront. Currently the waterfront must be accessed by car, or a single pedestrian bridge at the north end of the site.

The weaponry history that the city holds is important to the nation and to any development that takes place on the waterfront. Offering people an opportunity to learn about their national history in such a historic place is important now and will be for years to come. Connecting the cultural museum aspect with the waterfront and the port area would tie the overall city design together and offer a comprehensive system.



RECOVERY METHODS

This site would be ideal for Springfield to expand into and add to it's cultural and educational name. Developing the waterfront in Springfield would give people a recreational and historic space in the city. This city however has other improvement to make before waterfront development is an option.



Buffalo, New York



Buffalo, NY.

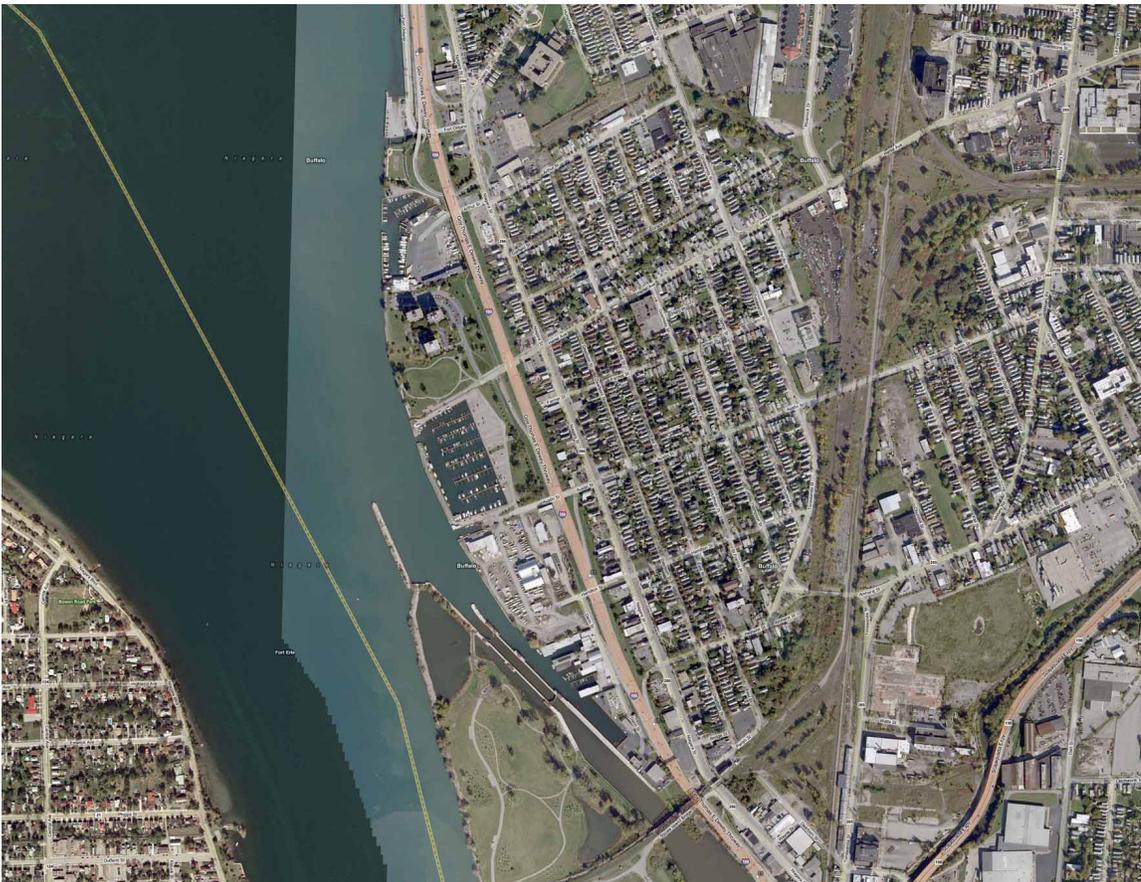
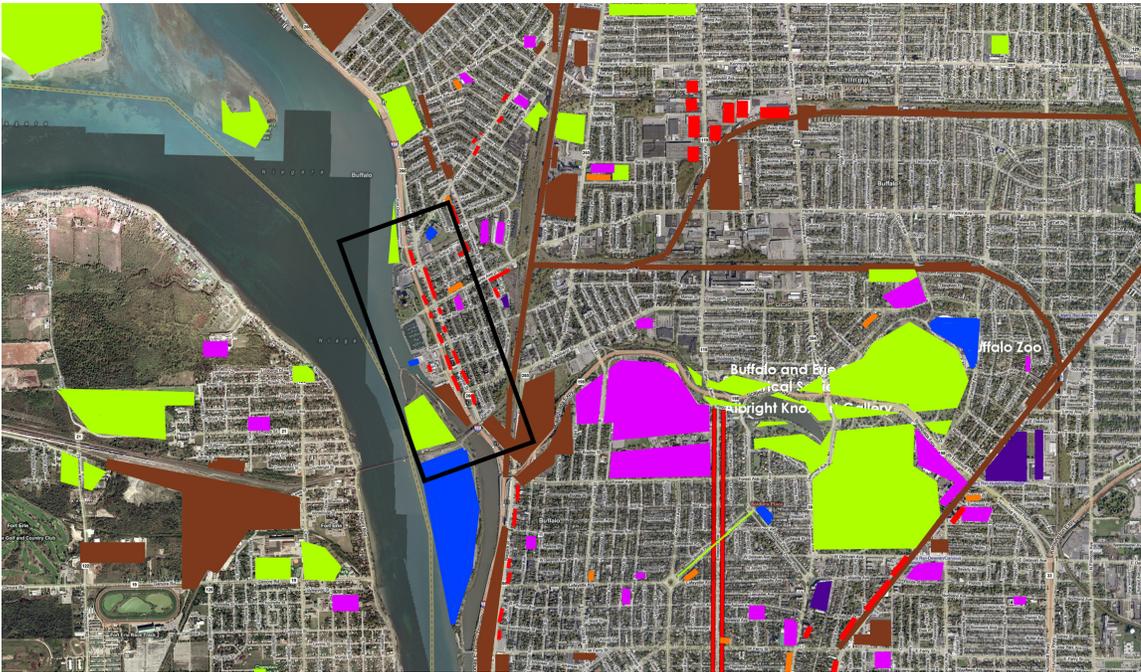
HISTORY

Buffalo is the northeastern edge of the defined Rust Belt (group of cities in the northeast of the U.S. That were dependent on steel manufacturing and heavy industry.) It was a city defined by the economies it was home to. Buffalo was a steel and automobile manufacturing city that thrived off of it's location on the Erie Canal. It has been in population decline since the 1960's due to job loss and lack of new economies.

GEOGRAPHY

Black Rock is a neighborhood in the north portion of the city. To the east it is bordered by railroad tracks and to the west, the Niagara River. To the north is Ontario Street and to the south is Amherst Street. It's commercial and pedestrian corridor is Niagara Street. This is where all community action

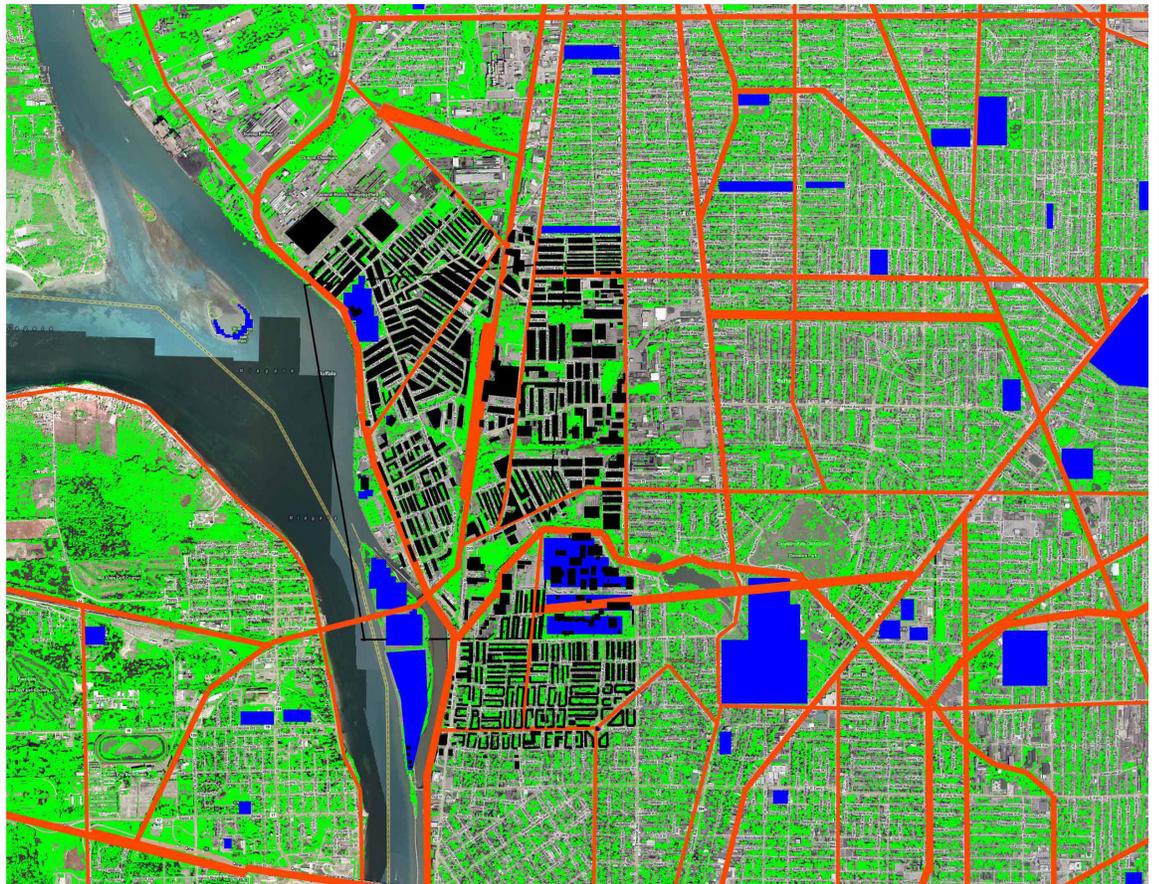


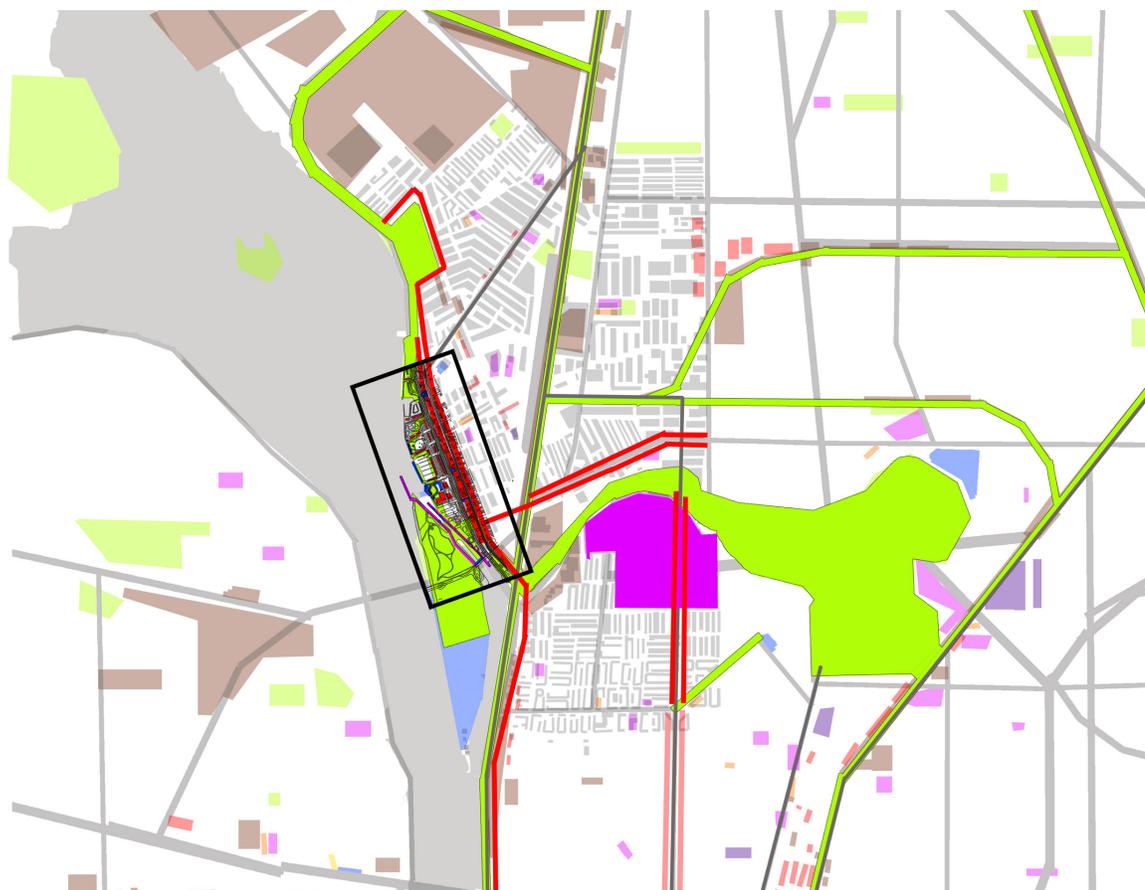


in Black Rock takes place. It is 400 feet away from the waterfront but there is no connection between these two important pedestrian amenities.

ECONOMY

Buffalo was one of the main shipping and steel manufacturing towns of the industrial revolution. Now the demand has resided and the Erie Canal that passes by the city is obsolete, businesses moved to more vital locations on the St. Lawrence Seaway. The city has had efforts to attract new large business in the same way it did 80 years ago; needless to say the efforts have been fruitless. Today, Buffalo is home to banking, research centers, and educational institutions. These resources are helping to improve the city's economy, but the unemployment rate is still third in the nation. The city is in need of businesses relocating and contributing to the city of Buffalo to help it recover. With the addition of modern urban amenities Buffalo would have a true allure to businesses and people to relocate.





ANALYSIS

The area in Buffalo defined as Black Rock actually covers a mix of diverse spaces. It goes from isolated modern high rises on the water to small town main street feel to practically inaccessible industrial areas. Black Rock scores a 32 out of 100 for walkability. It is a car dependent community with railroad and highways segmenting the area.

On the waterfront there is a large amount of surface boat storage. There is also two marinas and covered boat storage on the water. The saturation of a single program explains why the waterfront in Black Rock is so under used. The entire site south of the main marina looks like a boat parking lot during the winter months. There are four large sheds with open ends on the site and the boats are also parked inside. Near the canal there is covered boat storage over the water. These were full in December and seemed important to the use. The marina to the north is in the worst condition. It does however allow for large vehicles to dock.

At the south of the site there are masonry industrial buildings that are structurally intact but aesthetically in ruins. They are not in use currently and offer a great historic touch for new program on the site. Towards the north of the site is three 13 to 14 story apartment buildings; one of them is senior assisted living. There is a bare park adjacent to these modernist monsters that is under used.

All of the existing program and use of the site would be successful if incorporated into a better development plan. There are some key aspects of urban life that this waterfront site is missing. This area is in desperate need of commercial, office, and a variety of housing options.

RECOVERY METHODS

This area, if used to it's potential, would be a great amenity to the people of Black Rock, Buffalo State College, and all of Buffalo.

The waterfront is the perfect open space to update the city for the recreational user. Working with the topography it is possible to connect the water's edge to Niagara Street. This connection would increase viability for development projects and make Black Rock a more desirable place to live.

PROJECT PROGRAM SUMMARY



PROJECT PROGRAM SUMMARY



The program of the site on the water in Black Rock, Buffalo, NY will include public, civic, and recreation as the central focus. From research and analysis it is important that water recreation, commerce, and entertainment be included on the waterfront. This space will only be successful if it is used for multiple purposes and draws people in throughout the day. Designing a space to be used for an 18 hour day gives the development the best chance of success. For this reason it may be necessary to also include: education, office space, and additional housing. It will also be necessary to clean up the adjacent light industrial area and design a connection from the neighborhood across the streets to the destination.

Quantitative Summary-

Primary Uses-

- Connection from Niagara St. to waterfront in at least 3 places.
- Feeling of the waterfront at site entrance.
- Water recreation center.
- Educational civic urban use.
- Commercial space- boutique, and specialty shops, restaurant spaces included.
- Entertainment spaces, indoor, outdoor, music performance space.
- National park space in historic lock area.

Secondary Uses-

- Adult education for new economies.
- Office space to be determined by need and demand.
- Additional housing in mixed use areas.
- Parking.
- Public Transit on Niagara Street.

Qualitative Summary-

Space Detail Summary -

These spaces are meant to complement each other. This space on the water should feel definitive and one should know when they have entered this space. It will be a destination and an escape from typical city life. It can be approached via automobile, public transit, biking, or preferably by walking. Along the water this space will be active all day with different uses. There will be a blend of indoor and outdoor spaces to keep the space usable during the cold winter months and protect from the wind.

Purposes/Functions-

Connection from Niagara St. to waterfront in 4 places.

This is not a typical underpass bridge. This is meant to change people's perception and hide the freeway from the pedestrian. It will involve a change of topography of about 20ft. It was inspired by Yokohama international Port Terminal by Foreign Office Architects in Yokohama Japan. The feel of wood in combination with the water is meant to evoke the feeling of the water as people enter the site. On the exterior of the entrance the structure is at a large scale to frame the opening and create a sense of entry. As the threshold is passed the scale of the wood structure transforms to a free flowing pedestrian scale to imitate the movement of water. This structure points the view towards to waterfront and the marina.

Water recreation center.

In Boston on the Charles River along the Esplanade there is a sail boat and kayak rental place. They also offer sailing lessons. It exists physically as a shed but it provides a wonderful civic service. This will be provided in combination with the existing boat house. Having a boat rental area on the marina will allow people that do not own their own boats to participate in this wonderful summertime activity. Being on the water give people a view of the new and old together from a historically important viewpoint.

National Park and Squaw Island.

This historic area that surrounds the last locks of the Erie Canal is now boat housing and an island park. The proposal connects the two uses by blend them together with park space, bike paths, and a new pedestrian bridge that connects to the side of an existing rail bridge. This connection circulates people by the stations for the locks so they can experience the process and learn the history of the city of Buffalo.

Aquarium.

The aquarium is the anchor of the development drawing people to the site from miles away. The city currently does not have an aquarium and providing one could expand on the nearby zoo as well as provide an educational experience for the people that visit. The Building itself is designed to hover over the water and the entry toward the plaza is meant to spur lingering and relaxation in the area.





Progression through the existing underpass



Site side of the freeway



Commercial space- boutique, and specialty shops, restaurant spaces included.

This space is meant to be a destination for meeting up with friends and enjoying one's free time. A place where it's hard to keep track of time. A place where people go because it is something to do. The commercial space would be on the ground level of the buildings ranging from 2-5 stories. Above the commercial space would be where the office and residential uses would be. This mix of use and added density allows for constant activity in the area.

Entertainment spaces, indoor, outdoor, music performance space.

This includes night clubs, live performance bars, and dancing bars. It also includes possible concert hall, movie theater, and live performance space. This is all focused on the outside plaza area of the aquarium that is designed to house informal performance and gathering. The feeling is meant to be similar to a town square.

Additional housing.

Adding unique housing to the waterfront provides a new option that will appeal to younger college aged students and professionals. It is meant to be a mixed income area that does not prefer the upper class. Living above commercial areas is only for people that enjoy being in an urban area and this is what the housing would be.

Education, adult.

A service provided to the people that have lost their manufacturing or industrial jobs because of the change in economy. This is not a new college, but a service that could link these people to the education they need to find a new job. The colleges in the area include: Buffalo State College, D'Youville College, Erie Community College, Bryant & Stratton College, Medaille College, Canisius College, Trocaire College, Villa Maria College, Daemen College, and Empire State College. All located within 2 miles of this site. Formally, this program is not defined; but locating the program in the area would give hope to the people looking for jobs that Buffalo is improving and there will be jobs for them.

Office.

These spaces are to house a variety businesses. This is not a downtown core with high rises. It is fill in around the light industrial area that is no longer being used. This is meant to house local businesses and give people an option to work closer to home.

Mass Transit.

The current mass transit system in Buffalo mainly consists of bus lines with a single light rail line that runs from downtown to the northeast and southwest. The new urban scheme proposes three new lines; one of which runs along the waterfront and Niagara Street. It would be light rail construction with small stations as infill development.

Parking.

Parking is not a huge consideration because of the new mass transit line that will be running parallel to the site. There is minimal parking provided for pragmatic use; when it is



no longer needed the pedestrian space can take over all of the provided parking. This is all on street parking and behind building parking.

Structural Systems- Special Structure.

The entry is made primarily out of 6x6 wood timbers. The only place steel is required is as a lintel across the 80 foot spans of the openings.

The pedestrian bridge that connects to Squaw Island is made out of concrete and wood to give contrasting feelings of light and heavy. It is designed to visually stand apart from the existing industrial bridge.

The aquarium will require special foundations and have to compete with the 20 foot deep Niagara River. The structure is made out of Concrete on the lower levels and steel columns. The building is faced with glazing, wood slats and metal decking to resemble materials usually present at the marina.





The thesis ideas are based on historic use and current site condition; site selection was made through a process of analytic land use studies. There are many sites that this thesis could be tested on, however it is required to develop site specific conclusions of what type of development is needed. Black Rock in Buffalo, New York is a unique situation and therefore provided a specific canvas to work on. Historically, Black Rock was a receiving port for steel manufacturing and automobile manufacturing. It was also the last set of locks for the Erie Canal that commercial ships had to maneuver through. Today the site has boat storage, minimal boat lock operations, and high rise residential. The land is under utilized and has no pedestrian activity. The site is however in an urban context with a vibrant neighborhood to the east and Buffalo State University to the south. These two areas are successful and thriving but because of the physical barrier of the highway there is no activity on the waterfront. The design is a creation of movement to connect these areas to the waterfront on the other side of I-190.

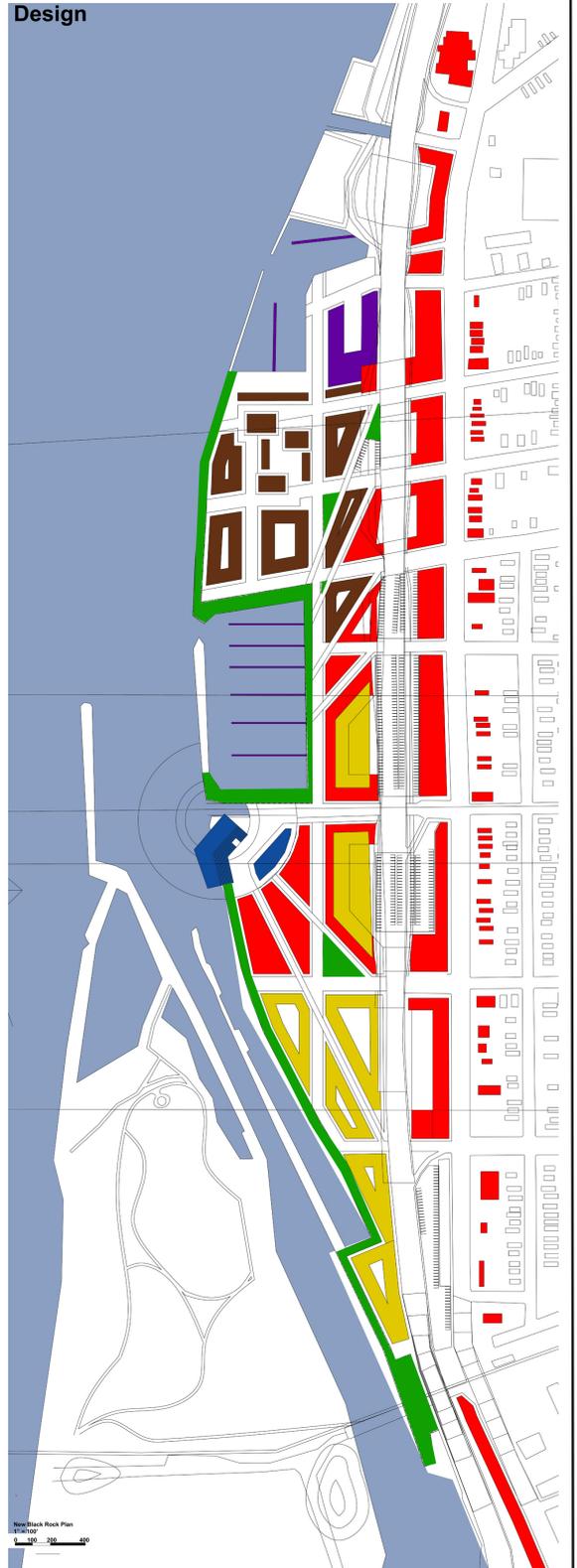
There is a lack of access to the waterfront site. Highway I-190 runs parallel to the waterfront and cuts off any visual connection to the water's edge. The highway is an earth berm at approximately 15 to 20 feet above ground level. There are currently 3 underpasses that lead to the site for vehicular traffic. Once at the site there is a bike path that runs close to the highway instead of the water. Squaw Island is connected to the site through two industrial bridges. The bridge at the south end of the site is mainly for rail traffic and the one further south is for vehicular. At this point one would have to exit the site drive south on Niagara Street and circle around to get onto Squaw Island.

The design process began with an attempt to see the site at maximum density. Initially the project was focused on building forms and providing zones of use. The first stage of design on the left is an attempt at maximum density. This is however not appropriate for the site and a utopian esque view. Commercial, residential, and office zones were created to highlight the difference in uses. This design failed because of the lack of sensitivity it offered the site and the existing condition. There were very few buildings left remaining and because of the historic context of the site it was inappropriate. From the research came the idea of incorporating an aquarium; it was the first thing to be

Existing



Design



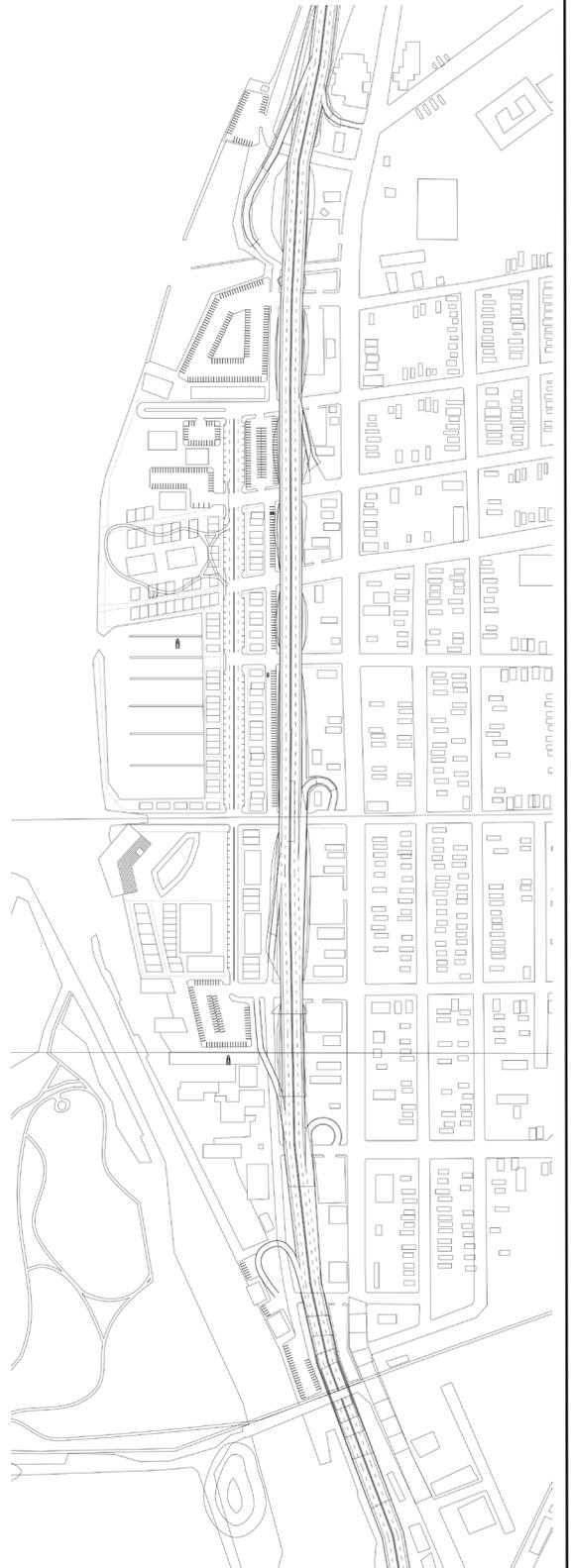
designed and the only thing that made it past this stage in the design.

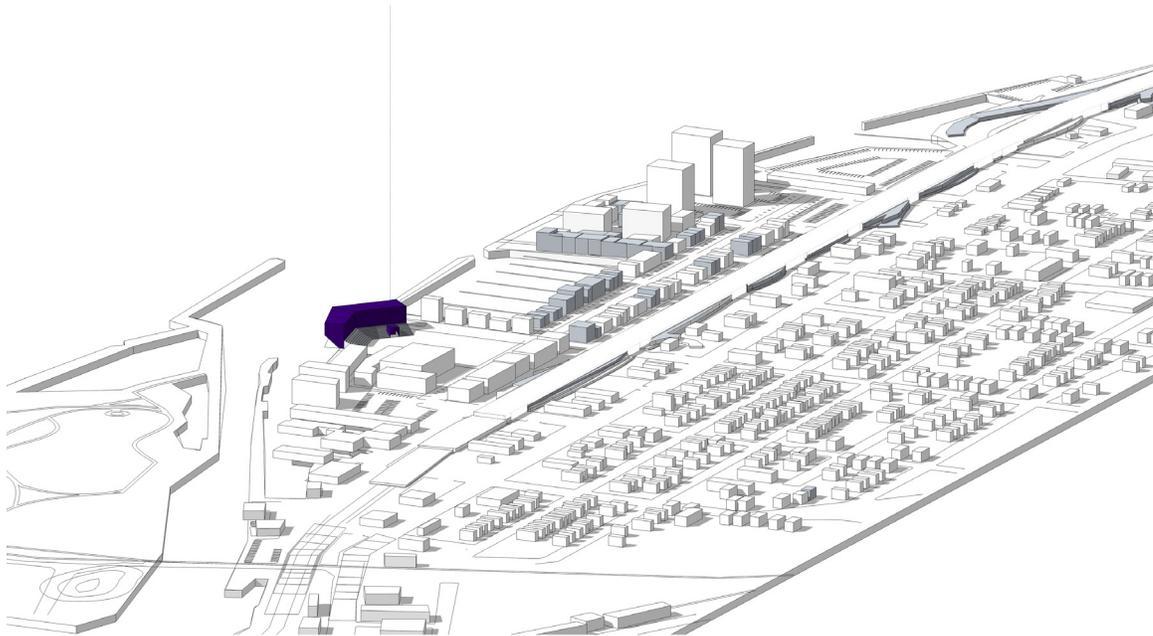
After the first design it became obvious that the focus was not on the building form or program placement but on the movement systems and how they interacted. Here. In the second design the focus was on pragmatics such as on and off ramps from the highway, the street system, and parking. Most of the work on the street system made it to the final design, the boat housing areas were however not successful and had to be redone. This design was missing some key theories of the thesis and had to be expanded. The idea of bring the water in had yet to materialize into the design. There was still no connection for pedestrians to Squaw Island; and the entry ways were not being celebrated as an entrance into something different. All three of these issues were resolved in the final design.

The final design purpose is to connect the existing urban fabric to the new development and allow easy movement. In plan the multiplied entrances that continue from existing street layouts are visible. This give the pedestrian a view into the sight from any travel direction. The entrances would be cut out of the earth berm and finished to create a threshold of activity before fully entering the site.

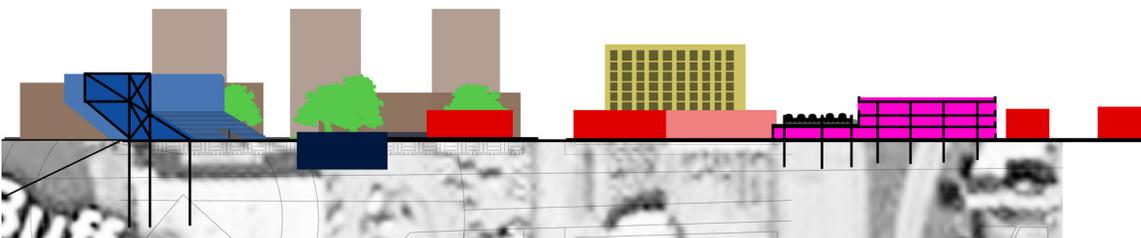
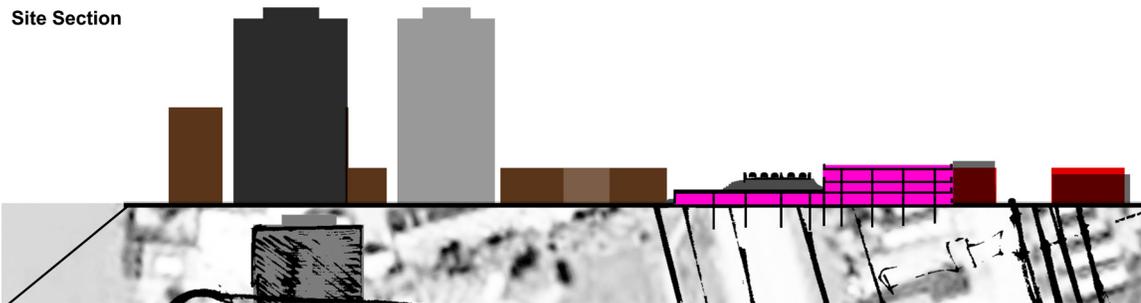
The site is designed for multi modal movement and ease of circulation, this allows for many modes of approaching the site. Currently the most common form of approach is by car, this can be from the highways, from Niagara Street, or from the neighborhood streets. The proposed light rail system would be the most common way to approach once the trains are running. This allows for a large amount of people to visit the site without having to store personal vehicles. The transit system runs along Niagara Street and there would be stops at the three main entrances for maximum impact of the site entry. Taking the public transit would encourage people to interact with the entries of the site instead of driving into the site. During the summer months it is common to have a large amount of boat traffic in the area.

The overall design incorporates boating and moves boats into the site to encourage the feeling of recreation throughout the site. There is two large marina areas as well as long term boat housing in the site. There as also an ex





Site Section



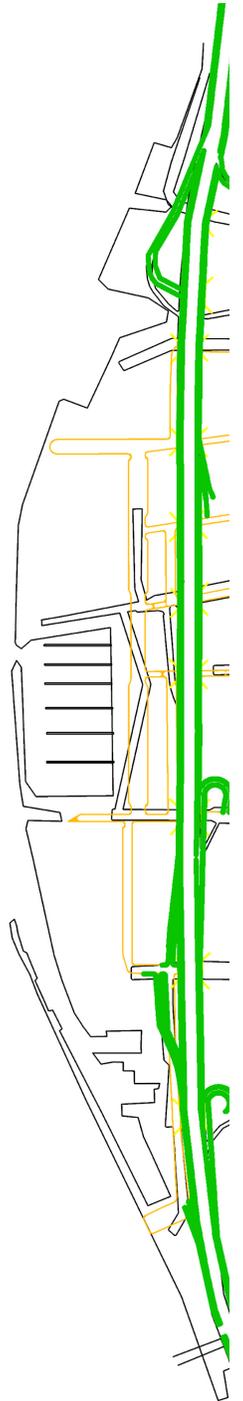
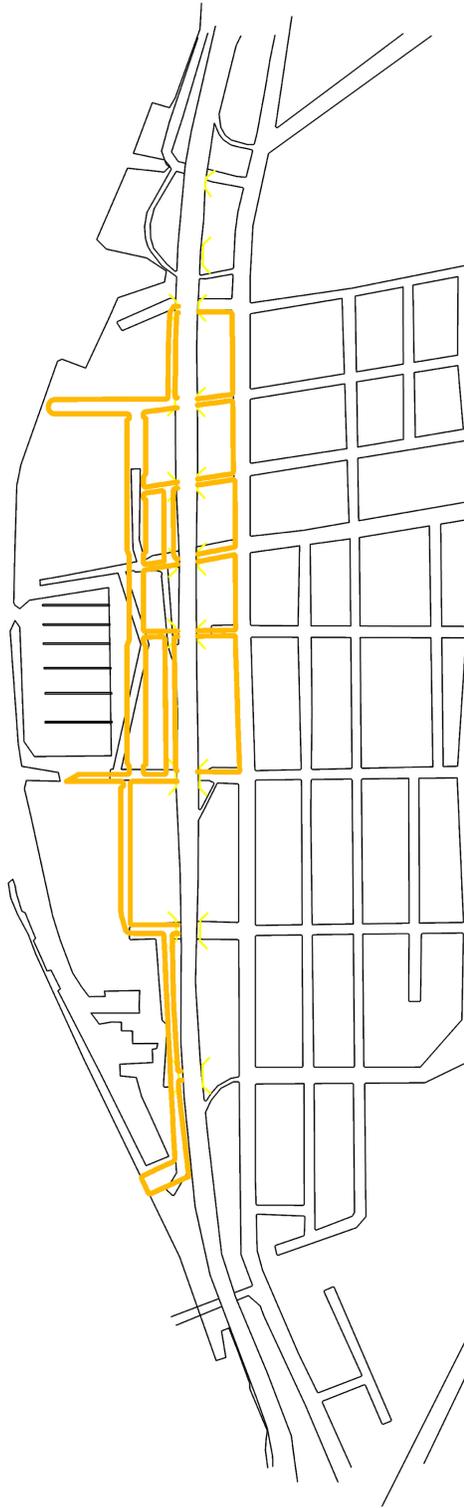
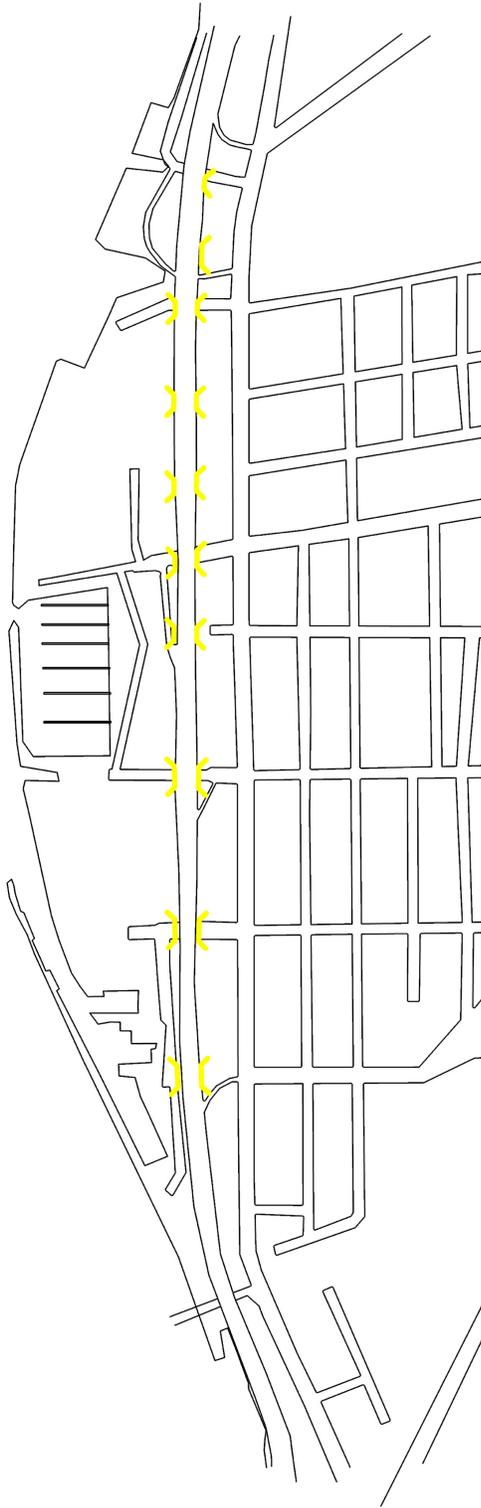
tensive system of pedestrian and bike pathways. These are meant to extend into all of the surrounding neighborhoods giving people another option of transportation.

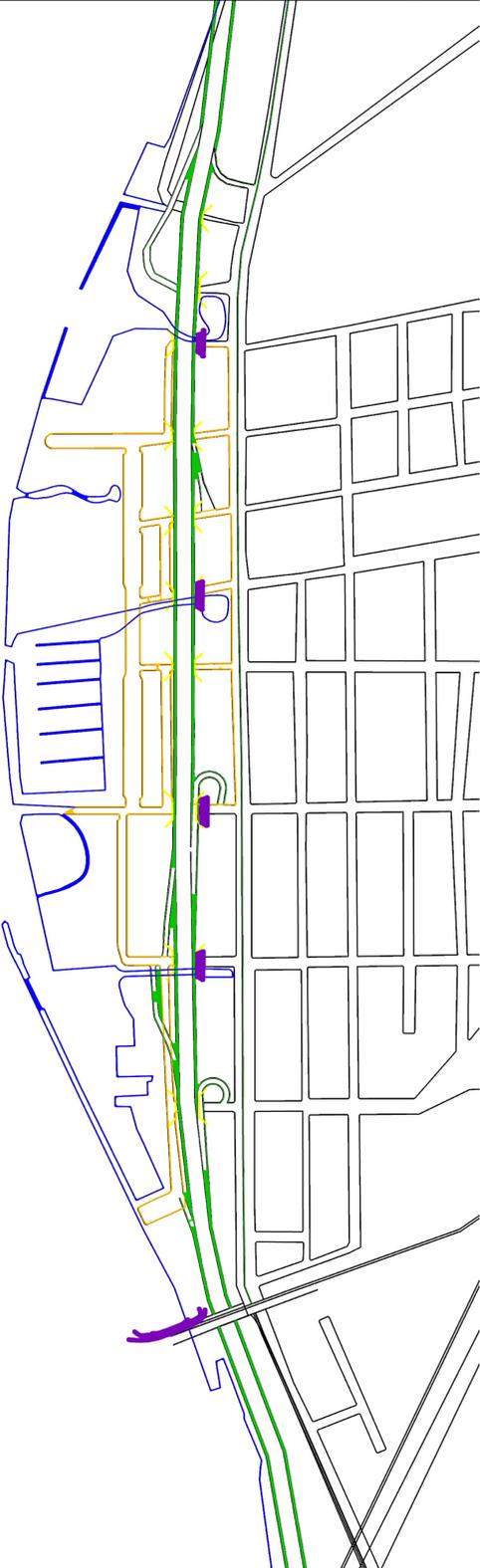
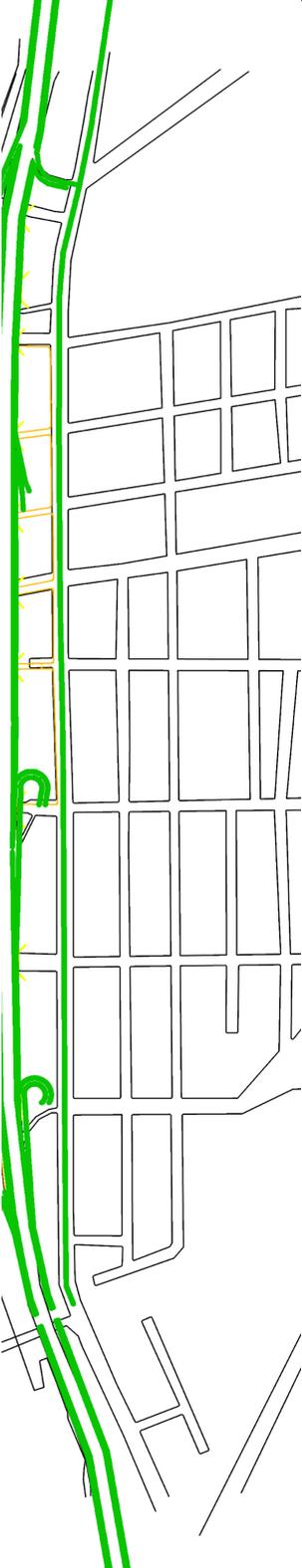
Highway on and off ramps work with the entry design to create a seamless experience and transition into the site. In the site two on and two off ramps are provided going north and south to provide ample opportunity for vehicular traffic to access the site. The highway remains mostly intact with minor changes to incorporate the on and off ramps. The structure and the earth berm remain as existing character of the site. There is a small intervention proposed for the road above the underpasses. To give a connection to the people driving above and walking below a series of small diameter holes will be drilled to allow light, water, and sound from above to enter the consciousness of the pedestrians. It is also a sign for the drivers that something below is different and may spark curiosity in the experience.

The highway is presently 4 lanes wide; this will remain and change the right lane to be for local traffic with a speed limit of 45 miles per hour (currently the speed limit in the area is 55 miles per hour.) The street traffic is moving at 15 miles per hour because of the pedestrian nature of the space; and there is a 20 foot elevation change for the off ramps. To calculate the minimum radius of the off ramp it's $R = \frac{v^2}{15(.08 + .20)}$. The radius of the off ramps with this formula and these speed limits needs to be 53 feet on the interior. The radii in the design are at 60 feet to allow for any changes.

The lack of celebration and definition of the entry led to a design that focused on entry and movement. There are four main entries with water and entry elements. The outside entries are designed to reflect the program on the other side of the highway. The south entrance is directly across from existing covered boat storage; the plan is to extend this use and expose the water and boat storage to passersby on Niagara Street. It incorporates a lift system for year round storage and can be secured for long term storage. Having a place for boat storage that is close to the river but also interacts with the existing city fabric gives people an opportunity to experience the waterfront use.

Process explanation diagrams



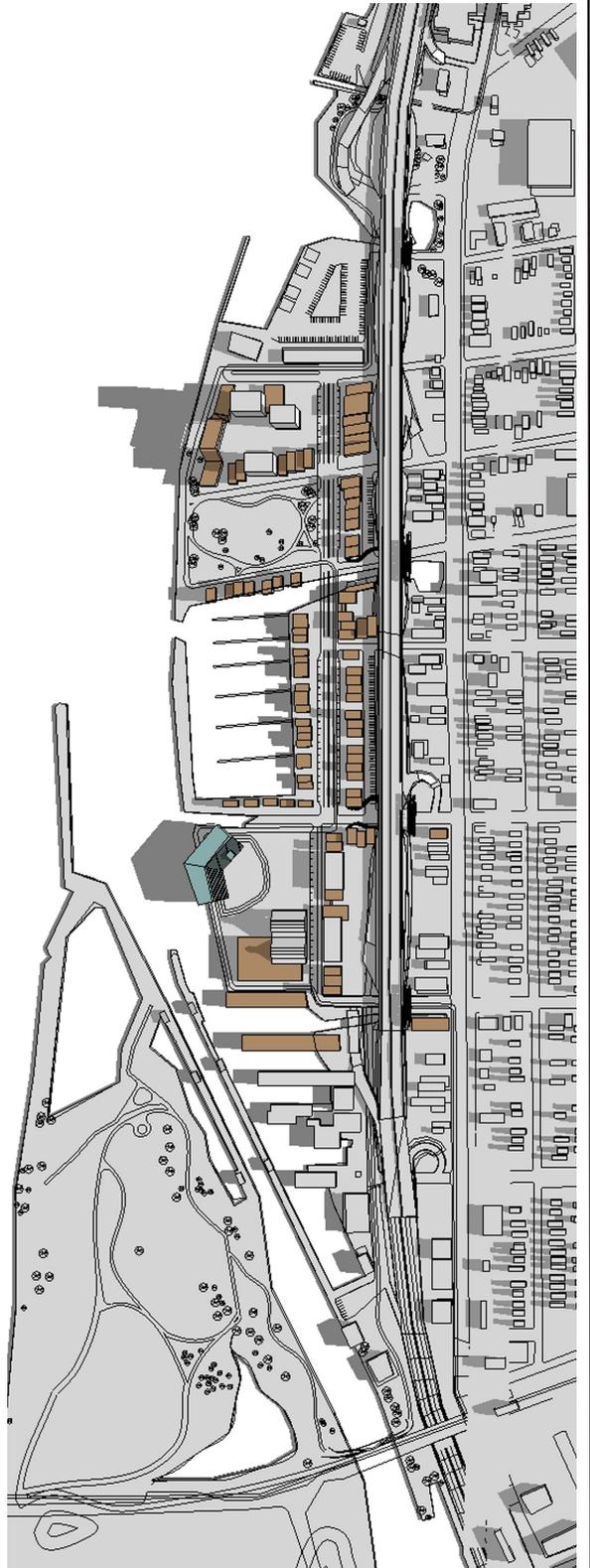
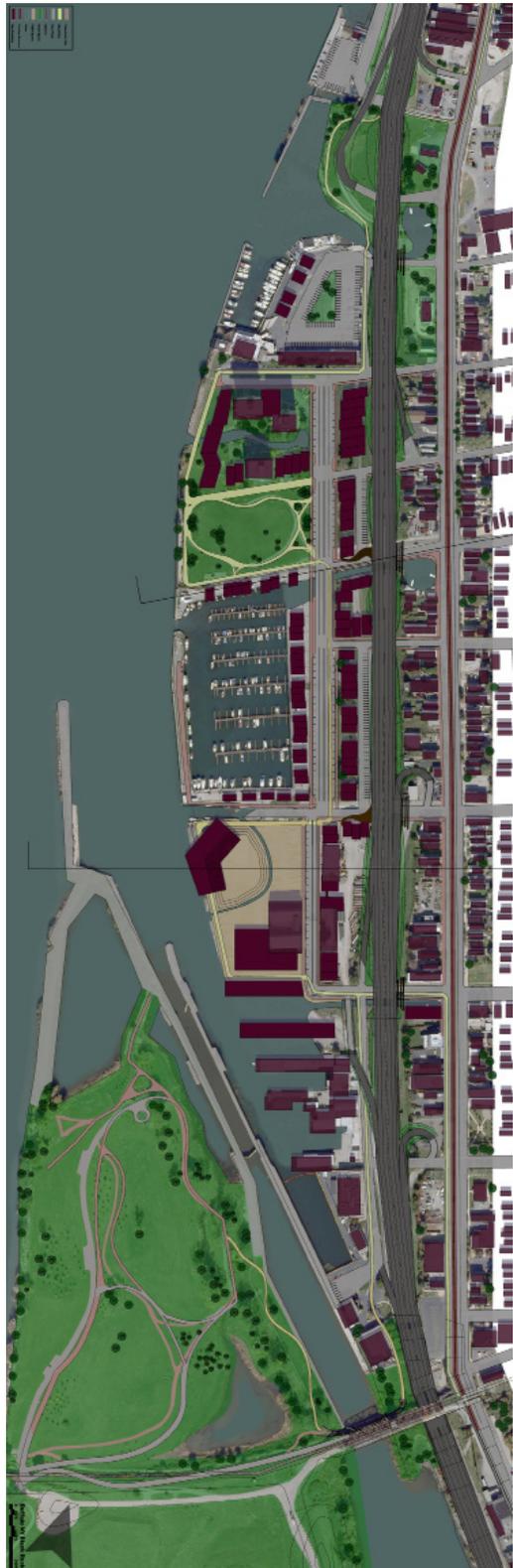


The two central entrance ways flank the marina and aquarium. This is the main public space in the design and therefore these two entrances are largely celebrated. There is a pedestrian scaled wood overhang designed to continue the marina feeling but also give people a personal interaction with the structure. It is similar to a free flowing lattice that floats overhead offering shade and interest. This structure interacts with the commercial on the ground level giving a material variety.

The northern entrance is designed for the people that call Black Rock home. The entry includes a small marina area that connects to the larger marina on the other side. This area is north of the existing residential buildings and slightly isolated from the public spaces. It is meant to offer privacy but also proximity to activity. This entrance is surrounded by park space to offer shade and a sense of relaxation. The marina on the other side of the entrance is surrounded by all of the amenities that boaters need. This list includes a fueling station, small restaurants, a motel, and a convenience store. The surrounding area is set up to offer ease and simplicity to the users. The overall design is meant to evoke the feeling of the waterfront as people approach on multiple modes of transportation and to give the user a feeling of recreation and excitement that today's urban dweller feels when they approach the waterfront.

High rise housing and low rise industrial buildings currently dominate the site. The new building heights attempt to blend the 13 story residential buildings with the one story boat storage and industrial buildings. The building heights also attempt to not overpower the existing urban fabric along Niagara Street. The buildings grow as they get closer to the water allowing for a smooth transition and great waterfront views.

Conclusions of initial research and analysis of city amenities showed that Buffalo did not have a city aquarium. The waterfront site is an appropriate home to this new cultural public project. The design of the aquarium was based on wind analysis, creating a public gather space, proximity to the water, and views from the water. The wind during the winter months comes straight off of the water from the WSW direction. Providing some type of wind shield would be necessary to guarantee the site could be usable during the



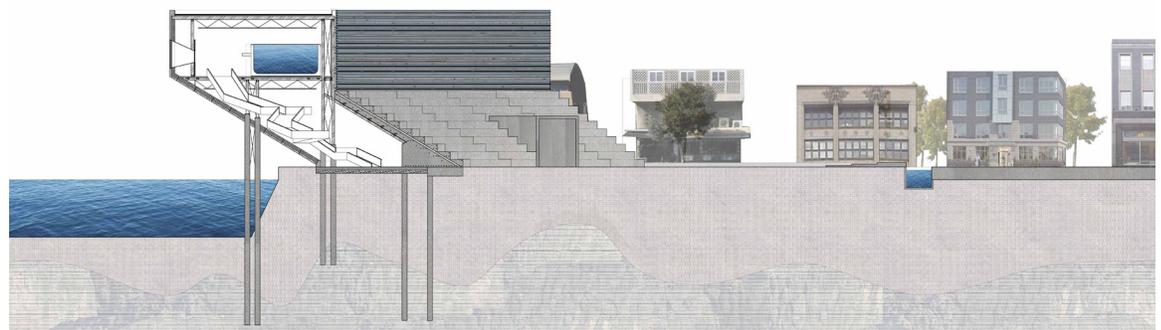
cold winter months. The shape of the building is meant to hug the plaza area and help create a sense of outdoor enclosure. The exterior stairs are over sized to create seating and a gathering space on the front facade of the building. The building is physically suspended over the water's edge creating a covered riverwalk between the aquarium and the water. The concrete columns that support the cantilever are seated in the river itself.

Currently, the site is mainly used for boat launching and boat storage. It is important to keep this established activity and expand on the appropriate uses. There are three areas designated to boating, the new design expands all three to interact more with the surrounding site. The water is literally pulled and expanded through the site adding to the capacity of the program. On the site there is a boat rental facility as well as long term storage to provide service to a wide range of water lovers.



The south end of the site is dominated by industrial buildings, the locks, and Squaw Island Park. These three pieces are the definition of Buffalo's postindustrial landscape and are combined to create a historic national park that embraces Buffalo's history as a steel producer and transportation hub. There is parking near the industrial buildings but once the park is started there are only pedestrian and bike paths. These lead to a pedestrian bridge that juxtaposes an existing industrial rail bridge. The curve of the bridge is shaped to display views of the site as the user moves across it. The entire park forces the user to interact with the history of the site with the industrial buildings and lock stations. There will be an educational program to the park to teach the user about the locks and the Erie Canal.

Some of the most common uses of urban space are residential, office, and commercial. These are however the backbone of any successful urban development because they guarantee that people will be there for many hours



throughout the day. There is already existing housing on the site and there is commerce on the other side of the highway but there is a huge lack of office space in the area. The program calls for an adult education program and office space



at a variety of scales to appeal to different sized businesses. These two pieces are important to the beginning stages of development. Once established the growth of development can continue.



It's about evolution through form, uses, transit, and motion.
-Melissa Detloff

CONCLUSION



Urban Rebirth is a thesis based on a problem that postindustrial cities around the globe have had to deal with. It is the issue of addressing the waterfront land that is left as a scar to remember the past of success and how it has left.

The theory that these cities can be analyzed by the urban amenities they offer was successful in determining what each city was missing and what elements successful cities had to offer. This study of the six cities however consumed more than half of the year and took valuable design time away. It was an intense analytic study of qualitative and quantitative information gathered from many different types of sources for each city. This allowed a mapping technique of categorized urban amenities. These are successful in displaying what is physically there but there was no diagram of the non physical amenities that exist in city neighborhoods; this is where the research falls short.

From the theory came the need for a single example of how results from the study can be formalized into an urban plan. This plan had two scales; the city scale incorporated overall city needs and transportation whereas the neighborhood plan incorporated the postindustrial history of the site. The design for the city scale was not comprehensive but practical for a second tier city and their goals of growth. The neighborhood design in the end was not final; there is reason behind all decisions made and all of the pieces are there but there could be a better consistency through the site. This is because of the struggle of scales to work in; it was hard to determine whether to get into building details or concentrate on the overall scheme. As this project continues it will be about making one design instead of having pieces of the plan designed. There were limitations on what could be done and some things were focused on more; this is not bad but it shows the important pieces of design in relation to the thesis.

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