

RIVERFRONT FOUND: WEAVING TOGETHER A COMPLEX FABRIC OF PAST,
PRESENT, AND FUTURE ON THE MIGHTY MISSISSIPPI

by

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2010

Abstract

Many small Midwestern towns established near a river thrived on industry and the transport of goods up and down the waterway. Unfortunately, industrial riverfronts that have acted as the heart of their communities have seen tremendous flux as time has progressed. In the past half century the economic activity of industrial riverfronts declined as more goods can be shipped via interstate highways and as factories are closed and relocated. These vacant factories leave behind contaminated brownfield sites which discourage reinvestment and promote greenfield development on a city's periphery in agricultural lands. Citizens have turned their backs on a history and heritage from which the first cornerstones of their communities were laid. A void results as industry begins to fade from the riverfront and a town loses its connection to the river. Put simply, we have lost our riverfronts.

The Riverfront Found Master Plan for Quincy, Illinois integrates the different uses of the riverfront, weaving together the existing industrial, recreational, and natural fabrics that line the Mississippi River. Design concepts strive to create a dynamic atmosphere to encourage a healthy lifestyle environment and destinations with year-round interest. Enjoyable and memorable experiences of Quincy's riverfront encourage users to return as the negative community perceptions of the Mississippi River are reversed. Planning is inwardly focused to combat sprawl of the urban fabric. Decision-making remains sensitive to floodplain ecology and mindful of flood occurrence. Conservation is an important design response concerning riverfronts and requires understanding an intricate system regionally and locally. Education ties both conservation and site experience together as users remember how their city and culture are embedded in ecology.

Three case studies identify key concepts to inform the project at later stages. A site inventory and analysis spanning three scales, regional, city, and site uncovers history and processes. The programming phase addresses proposed elements to address the concepts, ideas, and problems identified in previous steps. A final master plan presents the proposed program elements within context of the site to create a functional and dynamic riverfront for the citizens of Quincy.

RIVERFRONT FOUND

weaving together a complex fabric of past, present, and future on the Mighty Mississippi

Chris Enroth
Masters Project & Report
May 2010

RIVERFRONT FOUND

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Abstract

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*A single drop of water falls
Into the tumult of a rushing chasm.*

*Through air, onto rocks,
Roots and pebbles, mosses and grasses.*

*From the highest point, in all directions
Seaward.*

*Simple beginning for an avalanche
That will divide a continent
In two.*

-- Steven Cole DeCoster

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Project Introduction



Abstract

Many small Midwestern river towns thrived on industry and the transport of goods up and down the waterway. Unfortunately, industrial riverfronts, once the hearts of their communities have seen tremendous instability as time has progressed. In the past half century the economic activity of industrial riverfronts declined as more goods were shipped via interstate highways and as factories closed and relocated. Vacant factories leave behind contaminated brownfield sites which discourage reinvestment and promote greenfield development on a city's periphery. Citizens have turned their backs on a history and heritage upon which the first cornerstones of their communities were laid. Voids in the landscape result as industry begins to fade from the riverfront and a town begins to lose its connection to the river. Put simply, we have lost our riverfronts.

The Riverfront Found Master Plan for Quincy, Illinois integrates different uses of the riverfront, weaving together existing industrial, recreational, and natural fabrics that line the Mississippi River. Design concepts strive to create a dynamic atmosphere to encourage a healthy lifestyle environment and destinations with year-round interest. Enjoyable and memorable experiences of Quincy's riverfront encourage users to return as negative community perceptions of the Mississippi River are reversed. Planning is inwardly focused to combat sprawl of the urban fabric. Decision-making remains sensitive to floodplain ecology and mindful of flood occurrence. Conservation is an important design response concerning riverfronts and requires understanding an intricate system regionally and locally. Education ties both conservation and site experience together as users remember how their city and culture are embedded in ecology.

Precedent studies identify key concepts to inform the program and design. A site inventory and analysis spanning three scales, regional, city, and site uncovers history and processes of the Upper Mississippi Region, river towns, and Quincy, Illinois' riverfront. The programming phase informs site design addressing proposed elements, design concepts and ideas. A final master plan of Quincy's riverfront presents the proposed program elements within context of the site to create a functional and dynamic riverfront for the citizens of Quincy.

Personal Goals

1

Develop a thorough and effective design process.

2

Engage the future site users.

3

Design an environment that promotes a healthy lifestyle, discourages sprawl, and is sensitive to the surrounding ecology.

4

Test and improve my time management and organizational skills.

5

Learn and understand the Mississippi River.

6

Develop my skill with computer graphics.

7

Connect the citizens of Quincy to their river.

8

Present a final product displaying advanced design skills and grounded in practicality.

Dilemma

Many small Mid-West towns established near a river thrived on industry and the transport of goods up and down the waterway. Industrial riverfronts that have acted as the heart of their communities have seen tremendous flux as time has progressed. In the past half century many industrial riverfronts have begun to dry up as more goods can be shipped via interstate highways and as factories are closed and relocated. Riverfronts are complex and dynamic environments, none being moreso than those lining the Mississippi River. The Mississippi River has existed for millennia, draining North America's interior from the Appalachians to the Rockies covering a watershed spanning over 1 million square miles, 41 percent of the continental United States (Young, 2004). Early European settlers utilized the river to move goods up and down the waterway and established numerous river towns along the Mississippi's riverbanks. Many of these river towns thrived on industry and the transport of industrial and agricultural goods creating riverfronts catering to heavy industry. Today the river remains a pivotal transit corridor for Mid-Western agriculture yet many industrial riverfronts have seen instability. Factories have closed or relocated and many goods now travel by rail or interstate highway. Vacant industrial riverfronts leave behind contaminated brownfield sites and crumbling infrastructure.

The riverfront of Quincy, Illinois comprises a mixture of active industrial, vacant industrial parcels, portions of wooded floodplain, limited commercial, and a scattering of parks. Quincy's riverfront lacks continuity and has poor pedestrian connections along its length and into the downtown, creating an inadequate experience of Quincy's riverfront and the Mississippi River.

Major contributing factors:

- Quincy's riverfront provides a suitable setting for industrial operations, however, many factories have closed or relocated, leaving a somewhat desolate and forbidding landscape.
- Quincy's downtown was built atop nearby bluffs, outside the of the Mississippi River's floodplain. This planning foresight has left the city safe from historic floods, unfortunately this creates a significant physical challenge to connect the downtown to the riverfront.
- Competition from Quincy's eastward expansion away from the riverfront has left the downtown area under-maintained and underutilized. Redevelopment of brownfields and aging infrastructure is less desirable than the greenfield opportunities on Quincy's periphery that afford developers fewer complications and complexities than the downtown.

Thesis

The Riverfront Found Master Plan for Quincy, Illinois will integrate different uses of the riverfront. An intensive inventory and analysis identifies three landscape types, which play a key role in determining design strategy and programming for the riverfront. Application of the precedents, inventory, analysis, and programming culminate in the Riverfront Found Master Plan, integrating the different uses of the riverfront. Greenspace is utilized to weave together existing industrial, recreational, commercial, and natural fabrics that line the Mississippi River and create connections into and throughout the downtown. Design concepts surrounding Riverfront Found strive to create a dynamic atmosphere, encouraging a healthy lifestyle environment and provide Quincy residents destinations with year-round interest. Riverfront Found can be utilized as a tool to combat the sprawl of the urban fabric and foster social and economic development of Quincy's downtown community. Key natural areas are preserved and brownfields are treated utilizing phytoremediation. Decision-making remains sensitive to floodplain ecology and mindful of flood occurrence by limiting development in the 100 year floodplain. Riverfront Found is a study of the Upper Mississippi River and an application of design solutions that address Quincy's social needs and work with the rivers ecology.

Critical Existing Site Conditions + Program Possibilities



Figure 1-1. Bayview Bridge, Source: Author



Figure 1-2. Vacant industrial yard, Source: Author



Figure 1-3. View atop bluffs looking toward river
Source: Author

Mississippi River

One of the greatest strengths of designing Quincy's riverfront is also the largest limiting factor. The Mississippi River is both a captivating and dangerous natural feature (fig. 1-1). Argued by many as being the third longest river in the world, the Mississippi River watershed handles most of the runoff from the entire Midwest and Great Plains region stretching from the Appalachians to the Rockies. Quincy has experienced several historic floods, but today remains relatively dry due to a bluff system which protects a majority of the city, however, nearby lowland areas are susceptible to flooding and flood often. Designs for the riverfront must include provisions for flood clean-up, native riparian plant materials, emergency/safety protocols, and site design that is conducive to flooding and will not pose any hazards during or after a flood event.

Industry

Throughout the proposed project area vacant industrial sites are mixed with active industrial sites (fig. 1-2). Conflict will likely arise in determining pedestrian integration with functioning industrial or shipping areas and privately owned land. Communication with the city planner and property owners is required to determine a suitable route for pedestrians.

Existing Landforms

The city of Quincy has developed its downtown atop a bluff system, which afford residents views over the river valley (fig. 1-3). Yet, many of these views are obstructed or share those of industrial scrap yards, vacant lots, and operable factories. The topography of the bluffs will aid in defining the site, but will make connections to the downtown area challenging.

Sensory Environment

Currently, riverfront users experience many of the detrimental results of an industrial use zone (fig. 1-4). Noise from semi trucks, cars, and trains can drown out conversations. Noise on the street is further compounded by the reverberating sounds from two overhead bridges that feed in and out of downtown Quincy. Factory pollution, vehicle exhaust, and a bad day for the Mississippi River can lead to unpleasant smells. Buffers to block sounds and sights along with openness to facilitate proper air circulation will be integral in the riverfront design.

Seasons of Use

The Quincy riverfront currently does not have multi-season program devices. A lack of winter programmed spaces leaves the riverfront usable only during the warmer months of the year (fig. 1-5). Proposed program elements should encourage year-round use.



Figure 1-4. Industrial corridor, Source: Author



Figure 1-5. Kayaking class, Source: Author

Project Context



Figure 1-6. Source: Author

The Upper Mississippi River

Quincy is located on the Upper Mississippi River (fig. 1-6). The headwaters of the Mississippi occur in northern Minnesota at the river's source, Lake Itasca, and flows for 493 miles (Fremling, 2005). The Upper Mississippi River begins at St. Anthony Falls in Minneapolis, Minnesota and runs 854 miles down to the convergence of the Mississippi and Ohio River, marking the beginning of the Lower Mississippi River which flows 954 miles into the Gulf of Mexico (Fremling, 2005).

The City of Quincy

Historically, Quincy has been a waypoint north of St. Louis. Early rail lines connected the larger Quincy with a young Chicago. Presently, Quincy is defined as a micropolis (population between 10,000 and 49,999) and is ideally located for the transport of agricultural goods, maintaining its rail connection to Chicago along with establishing highway routes to St. Louis and Springfield (cityofquincy.com, 2009). Quincy is the largest city within a 100 mile radius, of St. Louis. As of the 2000 Census the population of Quincy was 40,366 residents, a slight increase in a twenty year trend of population decline (cityofquincy.com, 2009). The current city limits of Quincy contains a total area of 14.6 square miles (cityofquincy.com, 2009). Figure 1-7 locates the city of Quincy in relation to the local region.

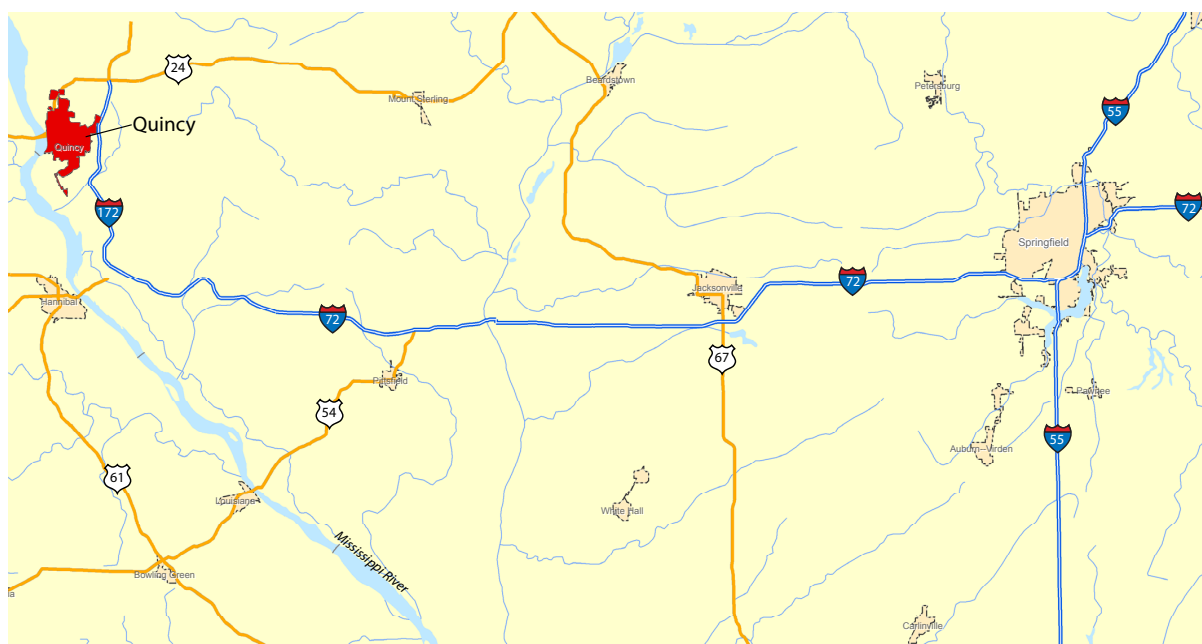


Figure 1-7. Source: Author



Figure 1-8. Source: Author

The Site

The site for this Masters project is located on the western edge of Quincy, Illinois and serves as the city's riverfront (fig. 1-8). Approximately 3.5 miles long with an area of 340 acres the site is composed of various land types and uses. The topography of the city's bluffs narrow the riverfront at the center of the site nearest to downtown Quincy, while the site opens up into a large floodplain to the north and south. Past land use included intense industrial practices shifting to moderate industrial use and vacant industrial parcels, greenspace, and local commercial businesses. The site extends northward to the functioning train bridge and southward to Lock and Dam 21. River bluff formations primarily contain the east edge while the Mississippi River forms the western border.

Issues Relevant to Contemporary Landscape Architecture

The plight of the Quincy Riverfront is not isolated, in fact it is typical of industrial riverfronts throughout American cities, municipalities and villages. As the industrial machine steams forward into a post-Cold War global market, foreign competition forces factory closures while cheap labor and slack regulations entice business owners to other countries. Many industrial riverfronts that have been left behind become deserted post-industrial landscapes.

Recognizing the opportunity of post-industrial sites, landscape architect Charles Waldheim sought to redefine the landscape in response to Twentieth Century development trends of horizontal growth which has abandoned much of our culture and history in the wake of progress. Waldheim coined the term 'landscape urbanism' as a new field of study where designers are offered a "multivalent and manifold medium for the making of urban form, and in particular in the context of complex natural environments, post-industrial sites, and public infrastructure." (Waldheim, 2006)

In his 'manifesto-like' proposition, *The Landscape Urbanism Reader* (2006), Waldheim states that designs need to reflect the relationships between dynamic environmental processes and urban form. Essentially, by utilizing the unique environmental processes of an area we can create a unique urban form, ideal for the location but still befitting of a particular region.

Sustainability and the experience of an environmentally conscience space are also key ideas behind the design of the Quincy riverfront. Sustainable design can be found throughout progressive cities. Yet, in smaller towns sustainable techniques and practices are typically not displayed or provided in the public realm. Change comes slower to these areas as social resistance and financial backing may be restrictive. Quincy's riverfront will serve as a venue of sustainable practices varying from floodplain restoration or brownfield reclamation, to bike lanes and pedestrian oriented spaces.



ideation

0123456789

Precedent Introduction

Studying the documented works of others is a great way to become familiar with concepts that can drive my design, however, to truly appreciate these concepts it is best to study their application. The following section introduces one of three precedent projects that were studied to inform the design of the Quincy riverfront, “The Davenport, Iowa and Rock Island, Illinois RiverVision”. (Figure 2-1 outlines the precedent process) The RiverVision project covers a wide spectrum concerning riverfront design, while the two remaining precedent studies of the High Line in Manhattan, New York and Fresh Kills Lifescape located in Staten Island, New York inform specific concepts and can be found in Appendix C. Completion of the precedent studies informed my own design guidelines for the Quincy riverfront.

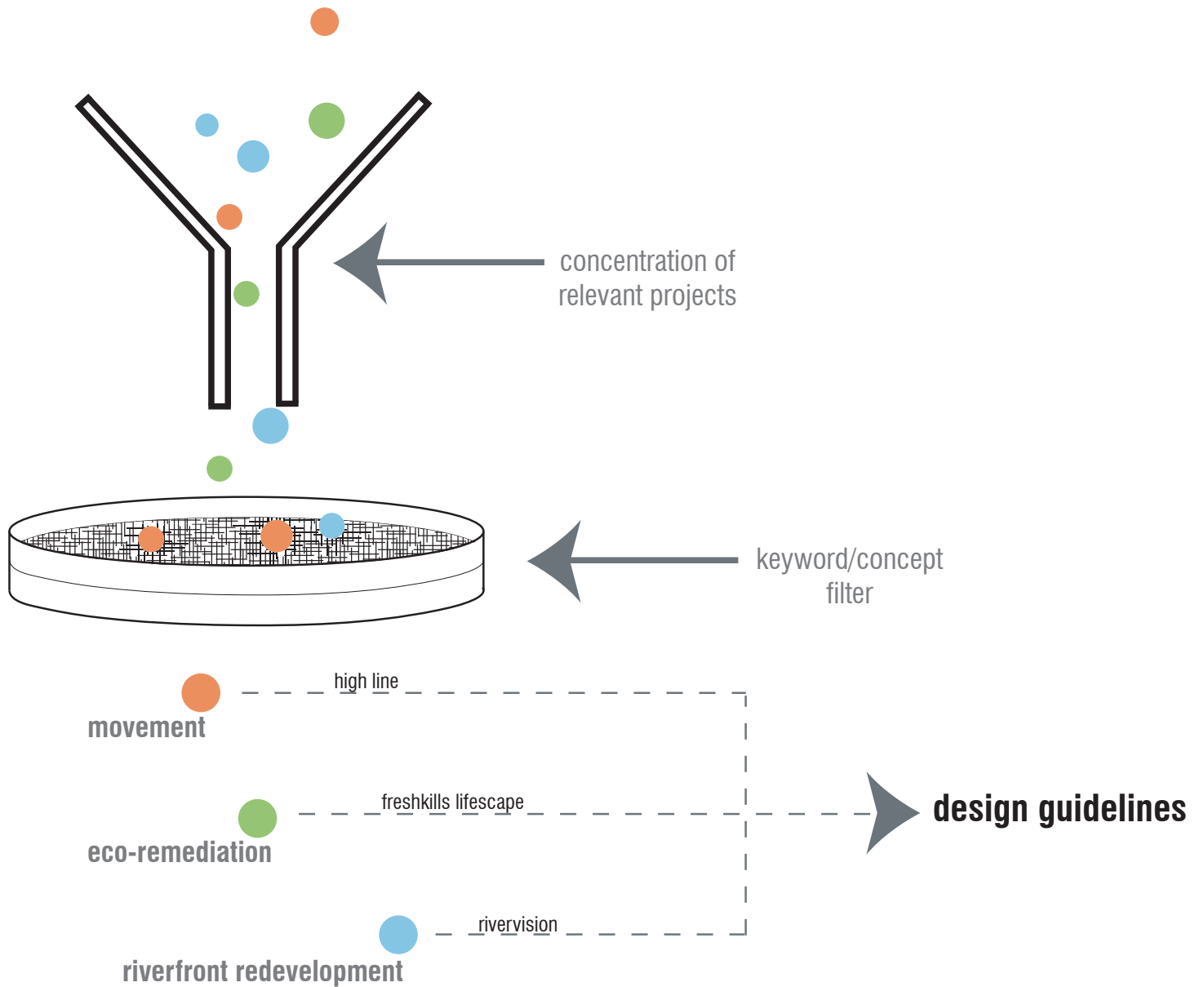


Figure 2-1. Precedent process diagram
Source: Author

Davenport & Rock Island RiverVision

Rationale

After studying the infusion of native landscape into the urban fabric via the Highline, and the ecological restoration that transforms a landfill into a lifescape at Fresh Kills the next step is applying these concepts to a riverfront. The Davenport Rock Island RiverVision is a riverfront revitalization project targeting the riverfronts of two Midwestern cities located on the Mississippi River (fig. 2-2). Davenport, Iowa and Rock Island, Illinois share either side of the Mississippi along their riverfronts and the two cities are approximately 150 miles upstream from Quincy, Illinois. In addition to proximity and shared characteristics RiverVision offers detailed community input where the Quincy Riverfront Found project may be lacking.



Figure 2-2. Left: Aerial of proposed design by Hargreaves; All Photos provided by the final RiverVision Master plan document

Name: RiverVision

Location: Davenport, Iowa & Rock Island, Illinois

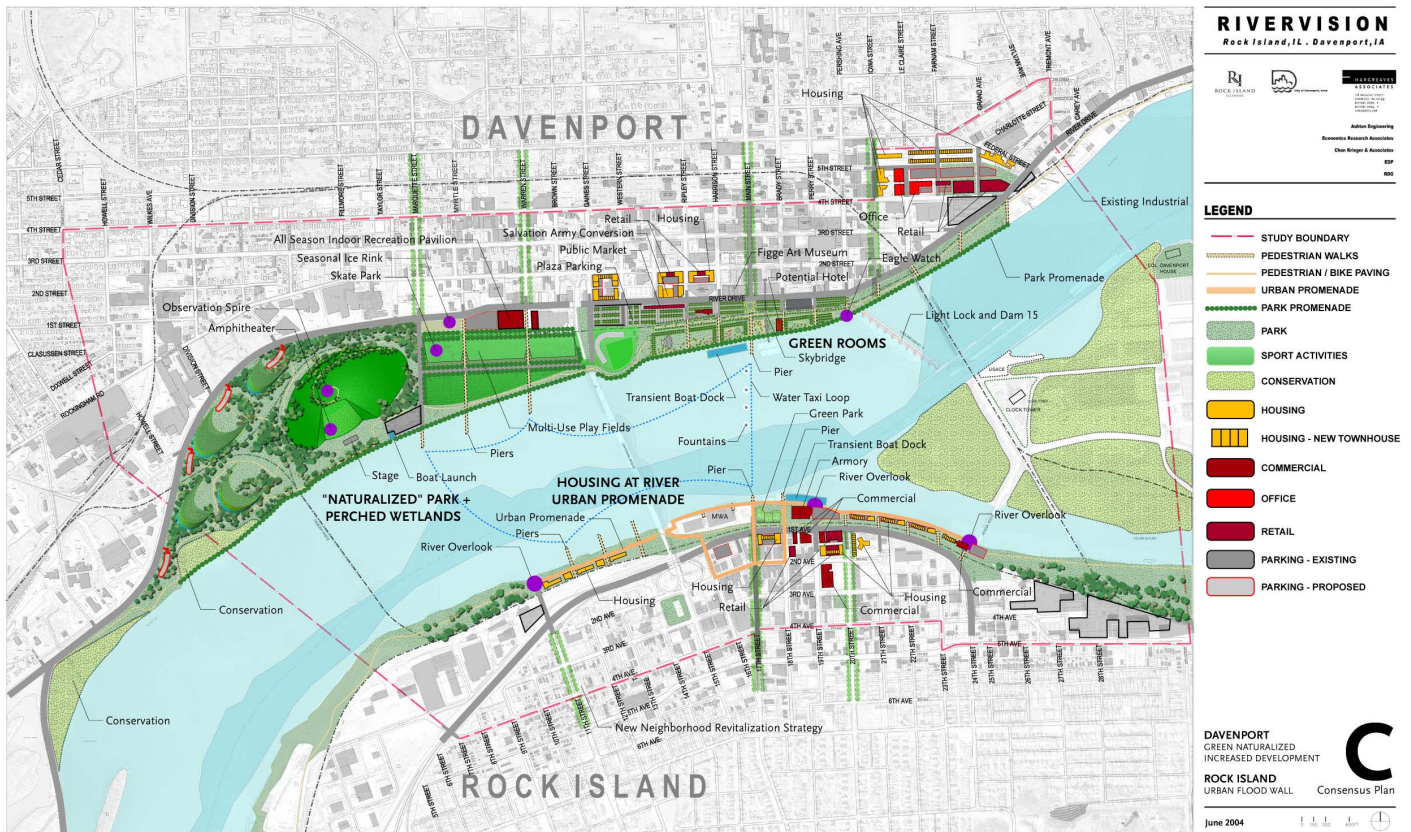
Date Designed: Beginning in 2003 to summer of 2009

Size: Davenport riverfront area- 256 acres; phase one area- 48 acres

Selected Design Team: Hargreaves and Associates

Client: Cities of Davenport, Iowa and Rock Island Illinois

Context: The targeted area for revitalization encompasses the Central Business Districts (CBDs or downtowns) and riverfronts of both cities (RiverVision, 2009). The site boundaries are 4th Street to the north, 4th Avenue to the south, and Tremont Ave in Davenport and 29th Street in Rock Island to east, and Cedar Street in Davenport and 7th Street in Rock Island to the west. (fig. 2-3)



Consensus Plan Figure 2-3. RiverVision Mater Plan Source RiverVision

Background: RiverVision is a joint venture between Davenport and Rock Island whose focus is to enhance and connect their downtowns. Davenport and Rock Island are developing design strategies for their shared Mississippi riverfronts with the goal of economic cooperation and a unified design between their two shorelines. Davenport and Rock Island have played important roles throughout Mississippi River history and are tightly intertwined to the river sharing in its best and worst times.

Flood Protection Strategy: Both cities have adopted separate methods in dealing with flooding. (figures 2-4 through 2-9) Davenport has simply created a defined setback distance from the riverfront composed mostly of open space and some parks. This decision resulted from a 1980 plan by the Corps of Engineers to build a floodwall which the citizens of Davenport rejected. The anti-floodwall movement was spearheaded by Kathy Wine, a school teacher who organized the group “River Action” that promoted the use of stormwater BMPs, planting native grasses to slow runoff, and the conversion of Davenports industrial riverfront into parks and natural greenspace that could survive/benefit from flooding (Young, 2004). Today Davenport is the largest city on the Mississippi River without Federal flood control (Young, 2004). Rock Island has taken a more aggressive role by building its riverfront atop armored embankments. Recently, Rock Island has replaced portions of its permanent floodwall with removable walls. Both techniques of flood protection allow for interesting design options for each cities riverfront.

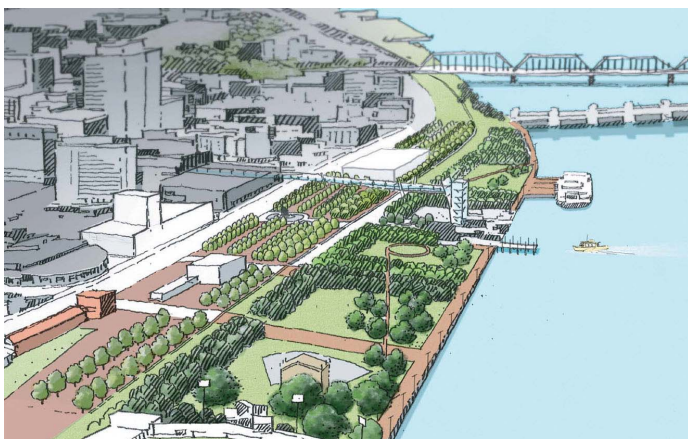


Figure 2-4. Source RiverVision



Figure 2-5. Source RiverVision

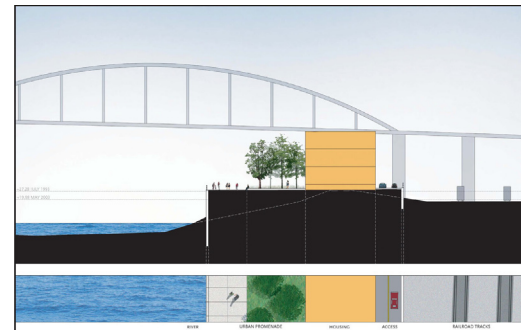


Figure 2-6. Source RiverVision

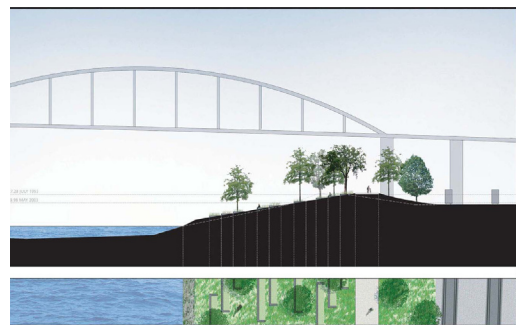


Figure 2-7. Source RiverVision

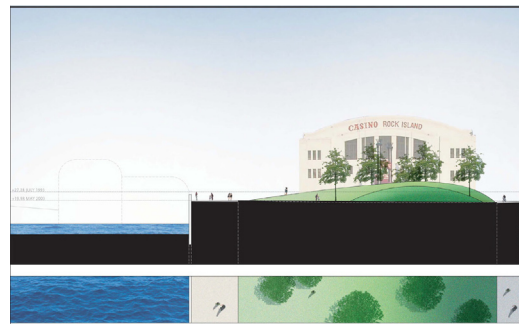


Figure 2-8. Source RiverVision

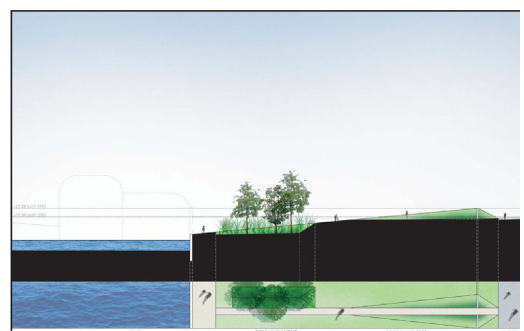


Figure 2-9. Source RiverVision

Overall Project Goals: These goals were developed as a framework for the design of both riverfronts. Input was gathered from the public, city, and economic research teams.

- Connect Davenport and Rock Island
 - visually and physically
 - build upon their current connection, the Mississippi River
 - water taxis, piers, fountains, prominent icons (fig. 2-10)
- Capitalize on the Unique Qualities of the Two Cities
 - Rock Islands floodwall and Davenports city setback
 - development possible near Rock Island's river edge
 - opportunity in Davenport for a great series of civic spaces
- Create New Public Urban Parks Appropriate for Each City
 - utilize exiting components and infrastructure
 - upgrade and reclaim urban open space in Davenport
 - install much needed greenspace along Rock Islands riverfront
- Identify Catalysts for Spurring Economic Development
 - incorporate mixed-use residential infill projects
 - identify keys sites to protect and enhance
 - develop plans with and without sweeping economic opportunities, ie. Isle of Capri Hotel
- Phase Project Implementation to Demonstrate Early Success
 - visibility of the short term is essential to the long term
 - allows development to continue forward in the opportune and inopportune moments



Main Street Pier @ LeClaire Park
Davenport, Iowa

Figure 2-10. Source RiverVision

Public's Guiding Objectives: These are objectives developed from several community meetings over several years of planning. (figures 2-14,15)

- Focus on the River
 - most important feature of both cities
 - provide better access to the river
 - protect existing views and create new views
- Play to the Unique Strengths of Both Cities
 - maintain distinct identity while intensifying coordination and cooperation
 - maintain unique strengths of rivers edge of both cities
 - promote housing and retail along Rock Islands rivers edge
 - focus on recreational activities along Davenports edge (fig. 2-11)
 - create more naturalized parks and conservation areas
 - protect and develop more eagle habitat
- Create an Icon for the Area
 - visual icon to Rock Island, Davenport, or both
 - visually unique attraction that would draw residents and visitors to the riverfront
 - multi-seasonal
 - should not over shadow the true icon, the Mississippi River
 - look to precedents in other revitalized rivertowns within the region; Dubuque and Peoria
 - look to a broader regional sense; Louisville, Kentucky (figures 2-12,13)



Figure 2-11. Source: RiverVision



Figure 2-12. Source: RiverVision



Figure 2-13. Source RiverVision



Figure 2-14. Source RiverVision



Figure 2-15. Source RiverVision

Davenport riverfront study: To gain a greater understanding of the RiverVision project, the Davenport riverfront has been selected for detailed study. Below (fig. 2-16) are the boundaries of the selected study area, prior to the implementation of later phases within the RiverVision project. Downtown Davenport comprises the sites northern border while a more industrialized area is adjacent to the northwest, with the entire southern edge contained by the Mississippi River.



Figure 2-16. Davenport Riverfront study area; Source: author

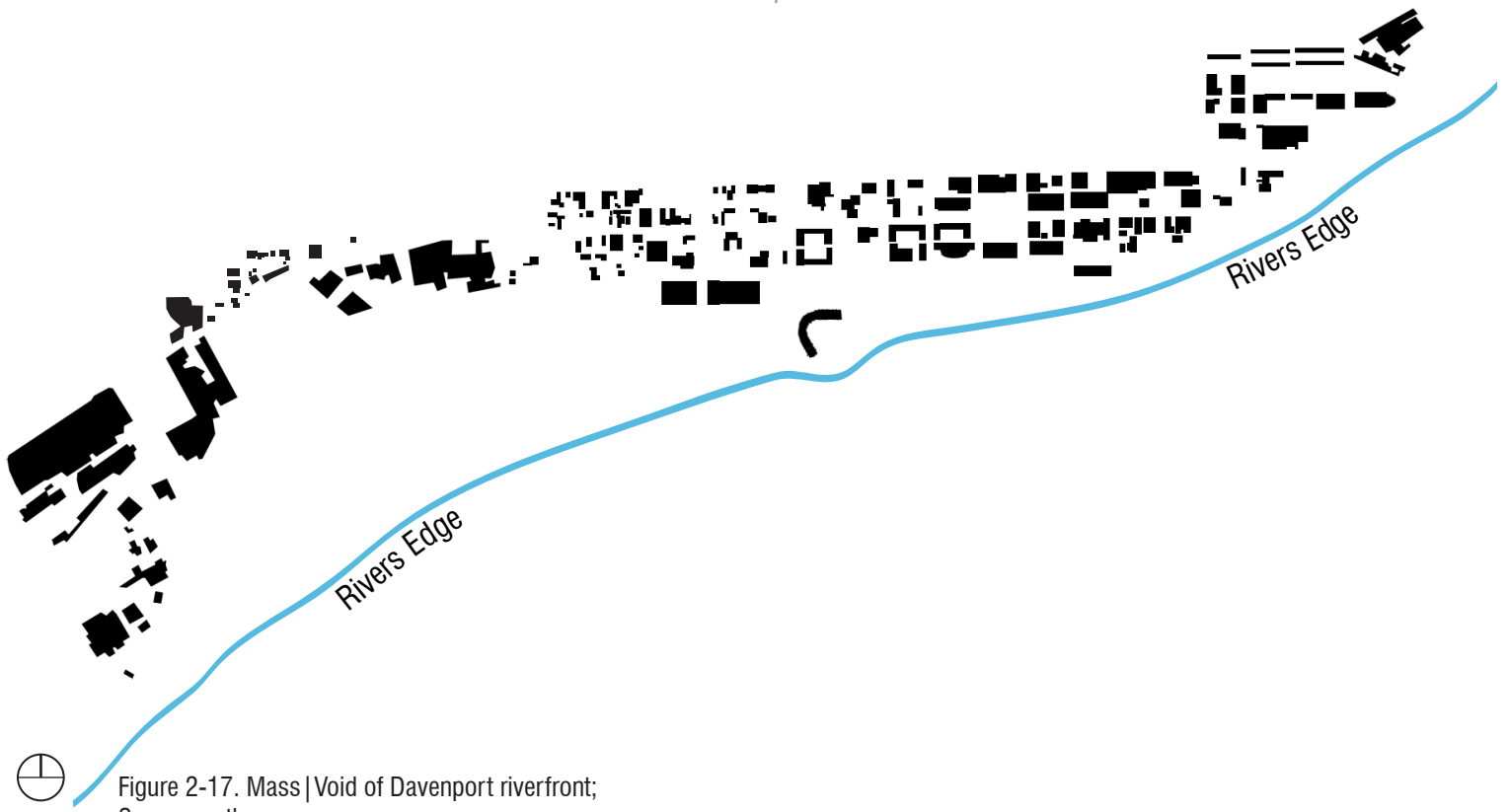


Figure 2-17. Mass | Void of Davenport riverfront;
Source: author

Mass | Void: Distinct spatial types can be identified through a mass void study. Figure 2-17 above pointedly illustrates the downtown area located to the northeast and north-central portions of the site while industrialized spatial patterns are apparent to the northwest. Davenports flood control strategy, leaves a buffer between the town and Mississippi, and is apparent in the large amount of open space along the riverfront.

Landscape Types: The use of the study area is based upon the use of the adjacent properties. (fig. 2-18) The urban promenade caters to Davenport's downtown and likens itself to tourists and community events alike as it acts as an extension of the city toward the river. Progressing west, site use transitions into an active recreation area complete with large fields, a regionally known skate-park, basketball courts, a playground, and multi-seasonal activities such as an ice-skating rink. Moving further west the site transitions into a naturalistic landscape with interpretive landforms and meandering pedestrian/bike trails. The landforms and native plantings aid in screening views into the industrial area and buffering noise from the factories and busy roadway.



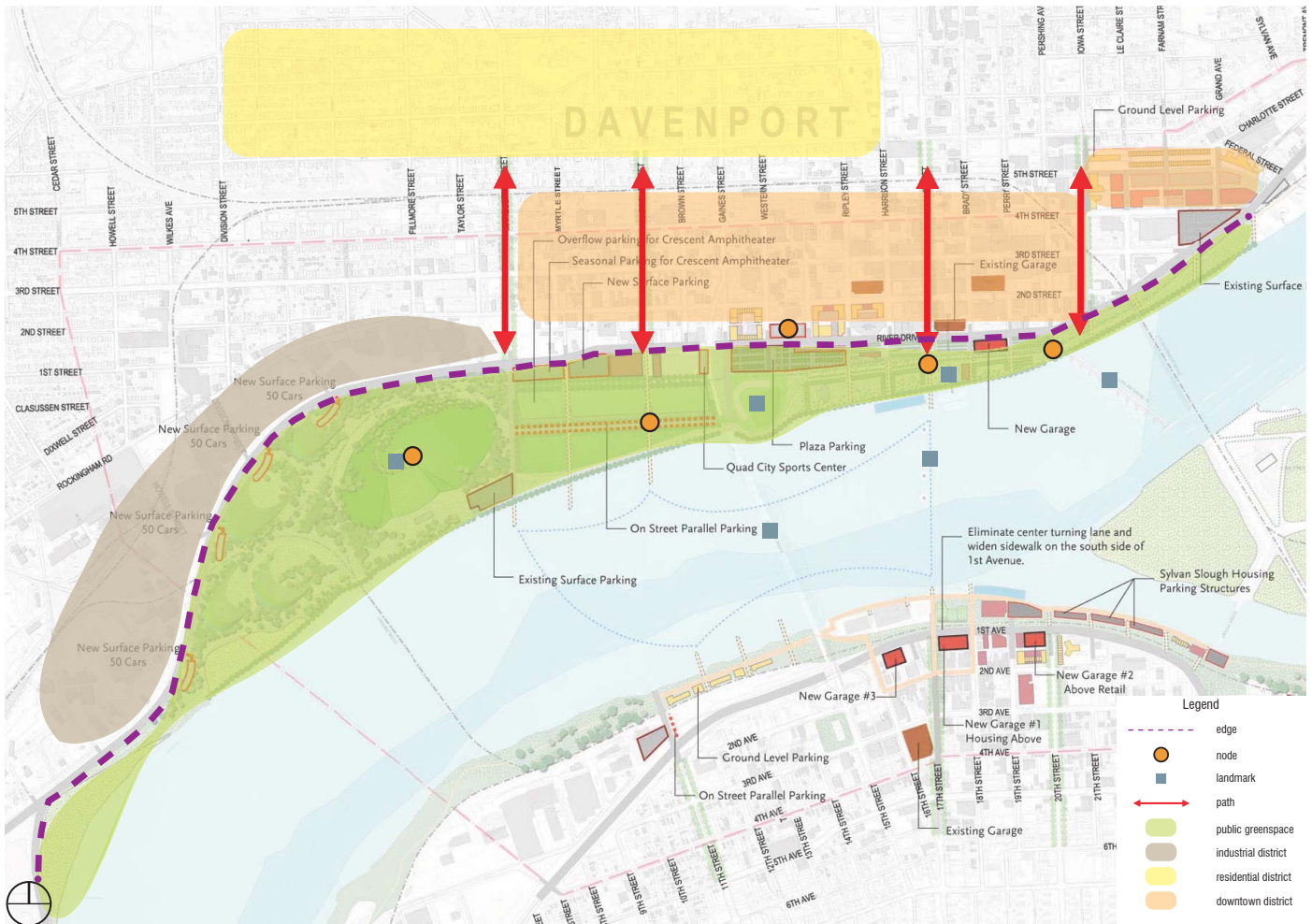
Figure 2-18. Landscape types of Davenport riverfront;
Source: author



Figure 2-19. Circulation of Davenport riverfront;
Source: author

Circulation: The riverfront arterial street runs the length of the northern boundary of the study area, conveying large volumes of two-way traffic. The downtown collectors illustrated in Figure 2-19 have been lined with street trees to soften the urban environment while providing a more conducive pedestrian atmosphere as people travel to and from the riverfront. Noise issues created by the overhead Centennial Bridge, which connects Davenport and Rock Island, was addressed by placing elements (such as a baseball field and active recreation area) that would not be affected or could buffer the sounds. Parking is scattered throughout the site, typically near the perimeter, but vehicles only have access to the active recreation area. Though pedestrians have access to much of the site the purple dashed line indicates the dominant pedestrian corridor.

Lynch Analysis (Lynch, 1970): Figure 2-20 identifies four *districts* within and surrounding the study area. Four *pathway* corridors appear to be the primary linkages between the riverfront and Davenport's downtown. Pedestrian *nodes* are indicated at significant areas of congregation and major intersections of pathways. Several important landmarks exist that are both accessible and inaccessible to users. *Landmarks* such as the Skybridge, and Observation Spire look out onto other landmarks such as the Lock and Dam and fountains located on the river. A distinct man-made *edge* on the northern boundary of the site has been both reinforced in some areas and blurred in others. The strongest natural edge is created by the Mississippi River along the site's southern perimeter.



Significance: RiverVision exemplifies a strategic development of a regional Mid-Western community with its efforts focused on revitalization of the riverfront of two cities. RiverVision will improve amenities for area residents, workers and visitors and will serve as a catalyst for community redevelopment. (fig. 2-21) The community input process for RiverVision is a vital step that can inform Riverfront Found.

Sources:

Hargreaves and Associates

website - www.hargreaves.com

address - 118 Magazine Street, Cambridge, MA - 02139

phone - 617.661.0070

City of Davenport, Iowa

website - www.davenportiowa.com

address - 226 W. 4th Street, Davenport, IA, 52801

phone - 563.888.2235



Figure 2-21. Source RiverVision

Design Guidelines

Concepts, findings, and conclusions reached through completing the previous precedent study, has aided in reinforcing and providing direction to the design guidelines that will be utilized in the Quincy Riverwalk. (fig. 2-22)

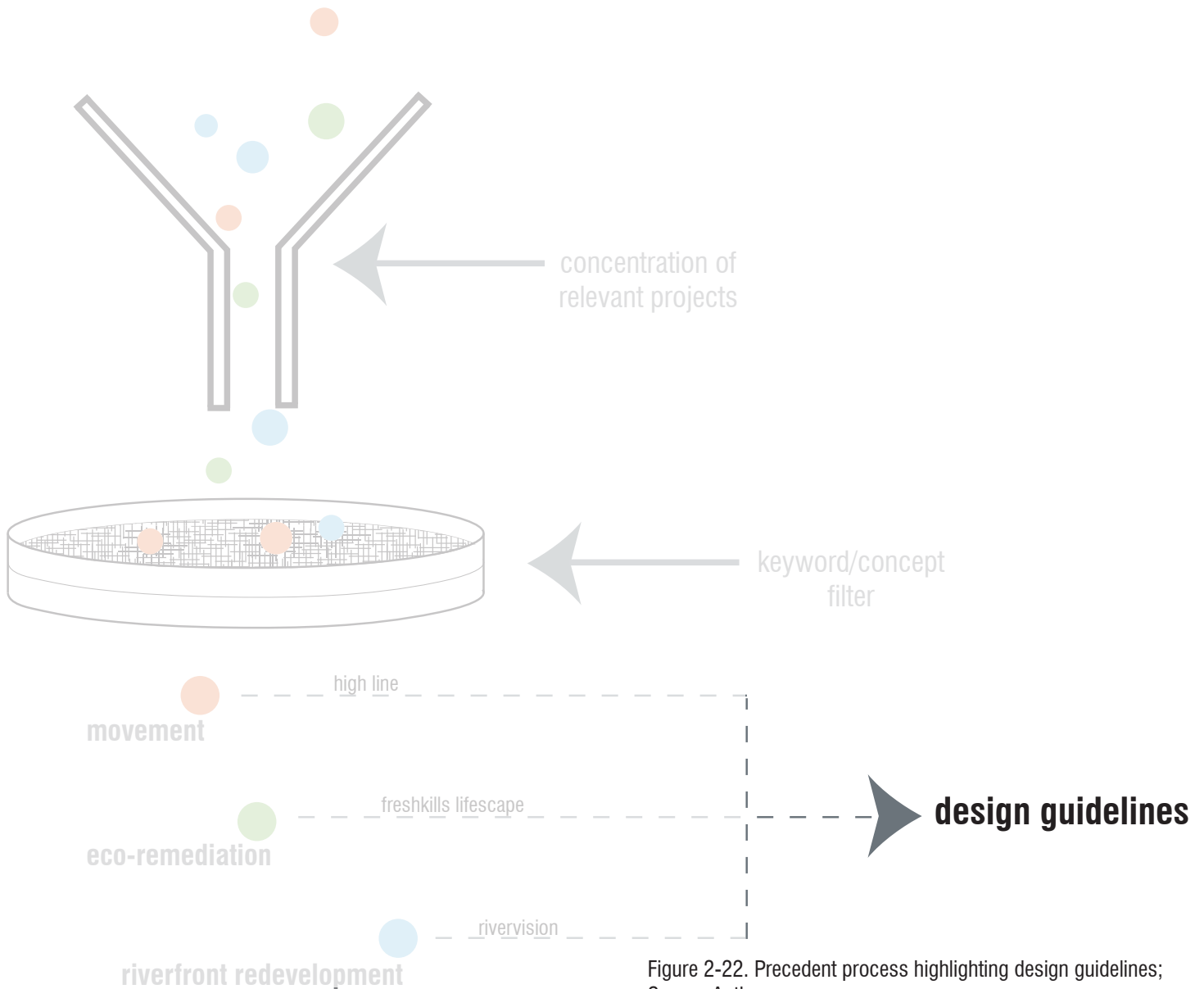


Figure 2-22. Precedent process highlighting design guidelines;
Source Author

- Linear movement along the riverfront is key. The proposed riverwalk should **not** be a destination itself, but instead be the **common link to destinations**.
- The Mississippi River is a powerful force of nature that is at constant odds with human development patterns. Designs should **work with the river** through an understanding of its behavior, ecology, and issues that threaten its stability.
- Embrace the riverfront's **cultural and natural history** which will offer forms and design solutions familiar to the site, city, and region.
- Recognize Quincy's **unique qualities** and convey the city's history and message through the site design.
- Identify and protect vulnerable natural areas and promote **preservation** and **education** of these locations.
- Look to provide a **landmark** of the riverfront that will be remembered by visitors.
- Create and **strengthen the pedestrian** environment.
- **Do not lose focus of the star player, the Mississippi River.**

exploration

03

Inventory Introduction

This section looks to fully introduce site inventory information gathered and organized to determine the data's relevancy. (Figure 3-1 page 36+37, inventory and analysis process) In order to better understand the proposed riverfront site I sought to understand the Mississippi River. This required a general study at a regional scale to present the rivers formation, history, and processes. To keep the inventory manageable and prevent an overload of information only the Upper Mississippi River was studied. (fig. 3-2, page 38) Data gathered includes a brief history of the Upper Mississippi encompassing both geologic time and the past three hundred years.

Riverfront Found focuses on river towns and more specifically their riverfronts. Therefore, inventorying at two additional scales, the city scale and site specific scale was conducted. The city scale includes a general study to address what is a river town. Data was then gathered on the city of Quincy, Illinois regarding the cities background and current conditions.

Inventory information gathered for the site is more detailed and falls into six categories:

- Existing Landuse
- Landcover + Views
- Circulation
- Built Forms
- Infrastructure
- Existing Environmental Conditions

By approaching the inventory at three scales I incorporated programming concepts informed on a regional, civic, or site specific level. This lead to well thought-out design solutions, that offer a basis for defense of a final product.

Inventory + Interpretive Analysis Process

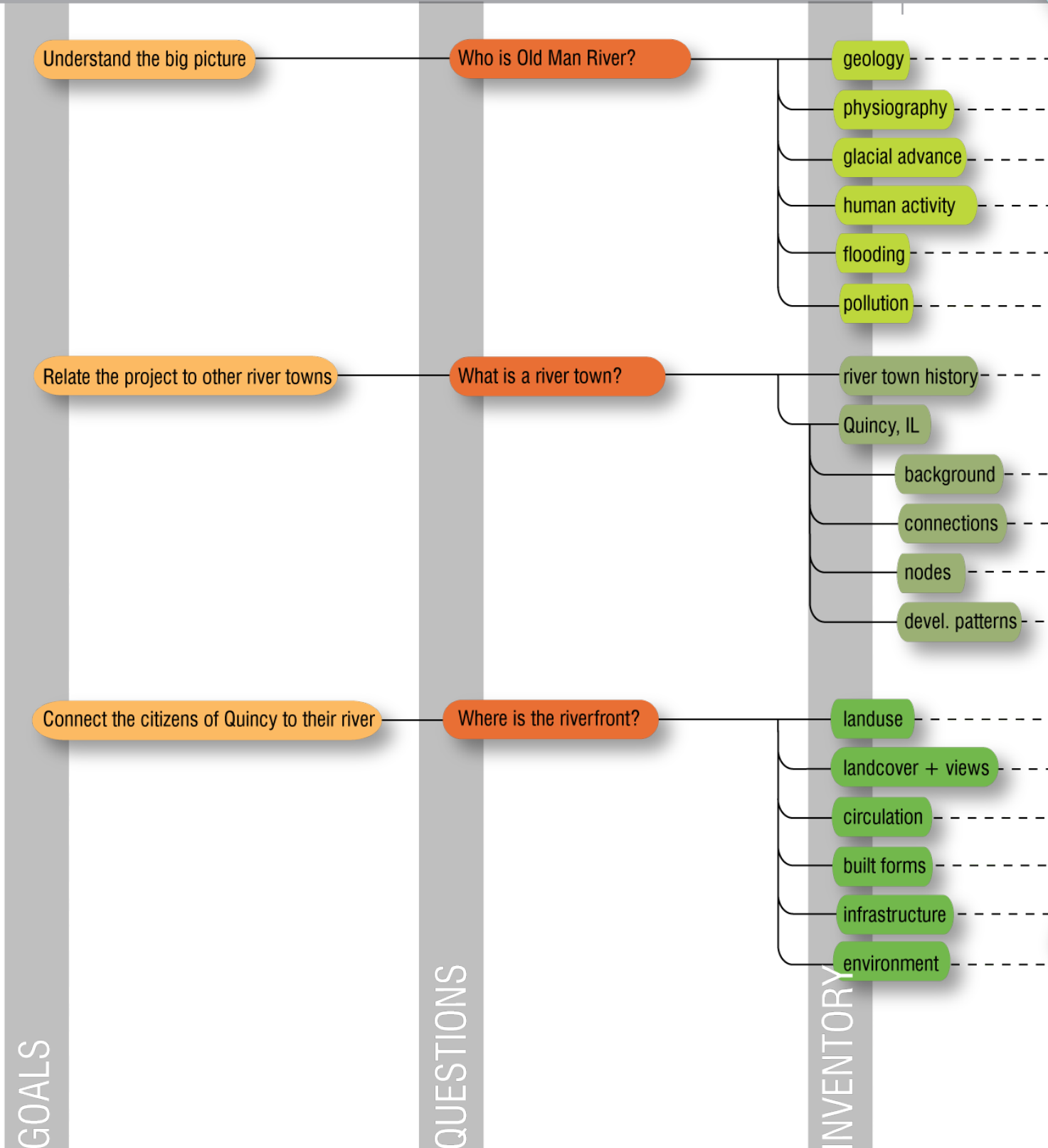
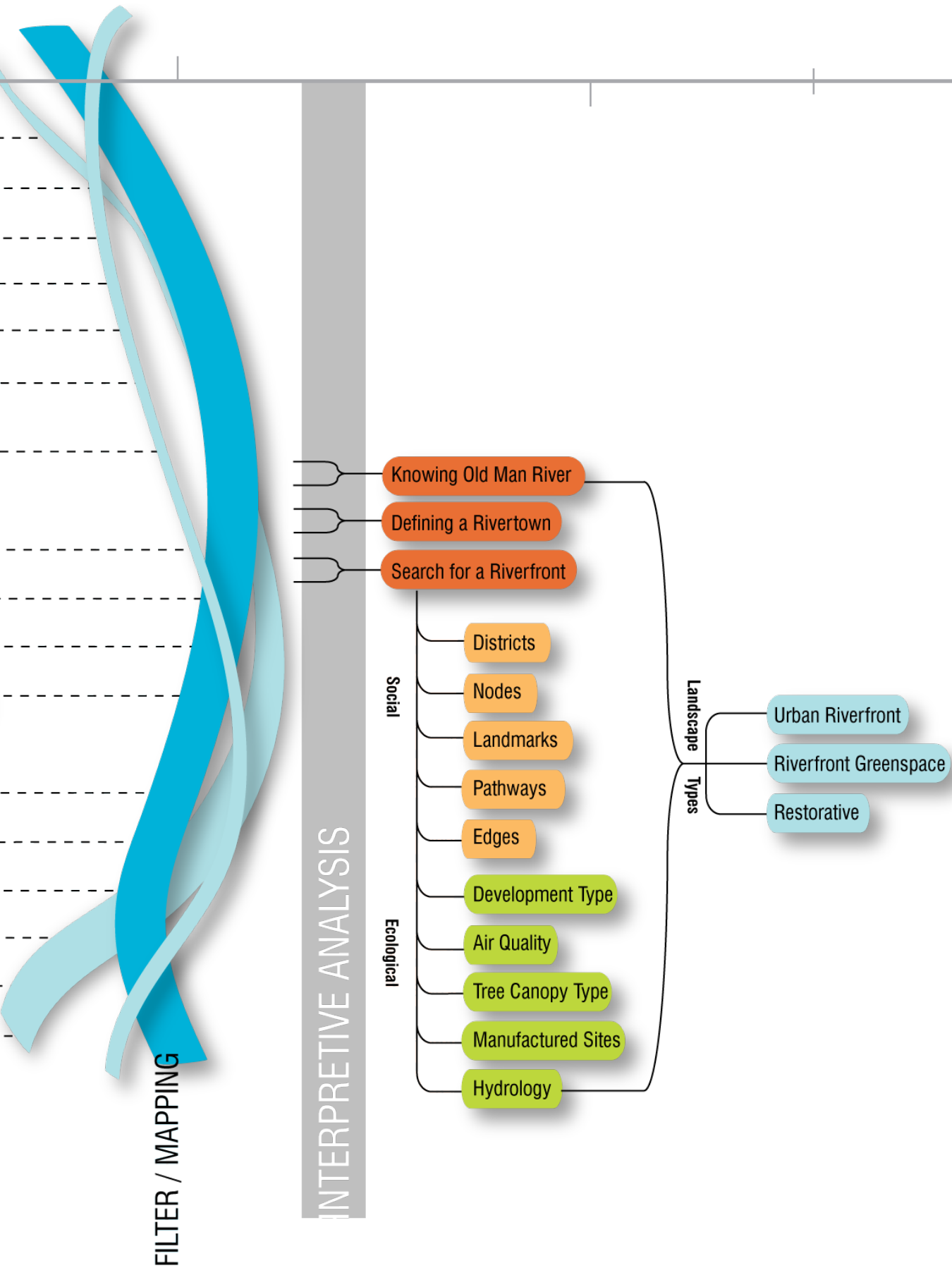


Figure 3-1. Source: Author



Who is Old Man River?



Figure 3-2. Extents of the Upper Mississippi River;
Source: Author

Valley Formation

Glacial Extents

After the great uplift of the Rocky Mountains 2 million years ago the age of North American glaciation began (Young, 2004). According to deep sea core sediment samples, the earth has seen eighteen periods of glaciation in the last 1.6 million years. For the purposes and scale of this project it is only necessary to look at what is described as the four classic glaciations that had the greatest effect in shaping the Upper Mississippi River: the Nebraskan, Kansan, Illinoian, and Wisconsin. (fig. 3-3)

The Nebraskan is the oldest of the glacial events and is believed to have been the first to shape the Upper Mississippi along its eastern border. The Kansan glaciation, like the Nebraskan, occurred west of the Mississippi River but extended farther south into the Great Plains covering all evidence of the Nebraskan glaciation.

The Illinoian glacial extended further south than any other glacial event. Illinoian's ice sheet extents further developed the Upper Mississippi River channel and the Ohio River. The drift from this glacier allowed for the rich soil development in Illinois and Iowa that is found there today. The Wisconsin glacial was the last major glacier event ending 10,000 B.P. (before present) and is believed to have been the largest event in the 1.6 million year timeframe. Worldwide sea levels fell 426 feet with the North American glacier responsible for over half the drop. In North America two ice sheets made up the entire glacier that covered one-third of the continent. At its thickest the Laurentide ice sheet was three miles high pushing with an immense force on the earth beneath it, which is still to this day decompressing. The Upper Mississippi handled the bulk of meltwater coming off of the North American ice sheets creating a well defined river channel. (Fremling, 2005)

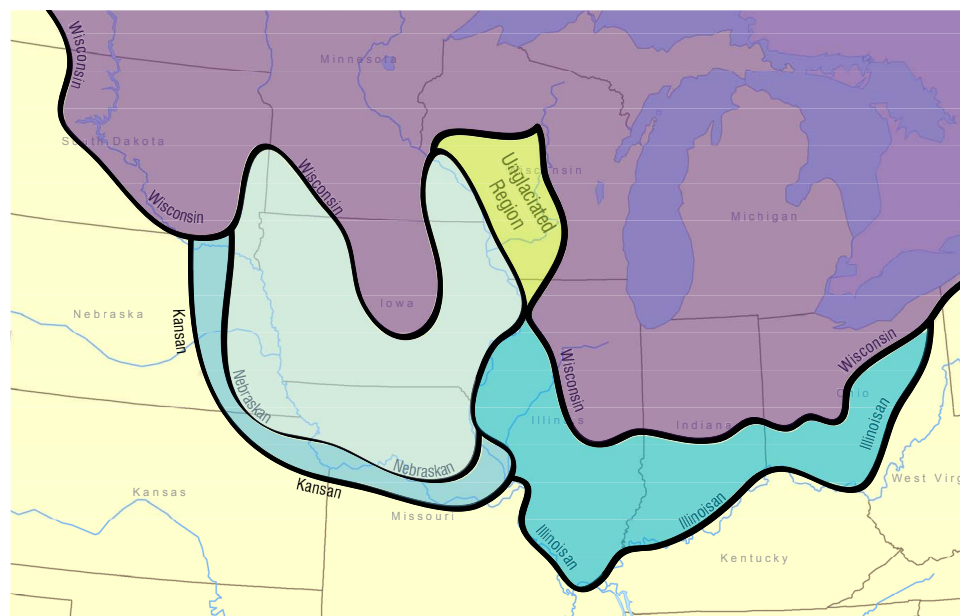


Figure 3-3. Boundaries of the classic glaciations;
Source: Author, adapted from Fremling, 2005

Channel Movement

The existing channel of the Upper Mississippi has been significantly influenced by nature and humans. Figure 3-4 below illustrates the physical changes of the river channel through time. Cross section A presents the river channel conditions during the Wisconsin glacial. Due to the high volume of sediment the river bed rose nearly fifty feet and was choked with outwash deposits. Cross section B occurs after the Wisconsin glacial during the emptying of several glacial lakes and rivers that scoured the river channel as the Upper Mississippi conveyed high volumes of water to an ocean at a significantly lower sea level than that of today. Draining glacial lakes and rivers cut a 300 foot deep swath through the Upper Mississippi that has formed many of the majestic bluff lands along the river. Cross section C articulates the rivers condition after the draining of the glacial lakes and rivers and a rise in sea level. As the rivers velocity decreases sediment is deposited filling the scoured channel. The flow of the water becomes segmented by fluvial deposits creating several streams that meander in and out from one another and create floodplain areas flanked by tall bluffs. In the southern reaches of the Upper Mississippi the floodplains can extend for miles on either side of the river. This was the condition of the river as the first European settlers moved westward into North America. Cross section D presents the conditions of the Upper Mississippi after human engineering has channelized and developed the floodplain. (Fremling, 2005)

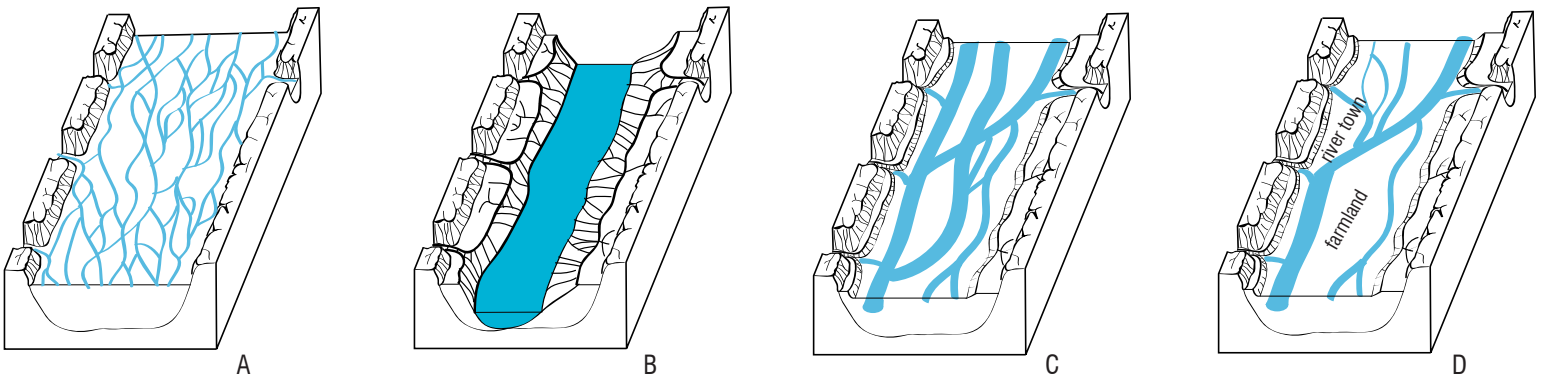


Figure 3-4. Cross sections illustrating the formation of the Upper Mississippi River channel; Source: Author, adapted from Fremling, 2005

General Section

The entire Mississippi River is an ancient natural feature that has drained the middle of the North American continent for millions of years. Younger than the Lower Mississippi, the Upper Mississippi has been cutting back on itself for hundreds of thousands of years as ocean levels and discharge volumes fluctuate through time. This has led to the formation of massive bluffs on either side of the river containing both the river and its floodplain. Figure 3-5 illustrates a typical section cut near the middle of the Upper Mississippi close to the city of McGregor, Iowa. This section of the Upper Mississippi has spectacular vistas atop the bluffs overlooking the river and its floodplain and interesting sedimentary rock formations on the steep slopes along the river. Figure 3-5 aids in illustrating the depth the river has cut down into the bedrock formations. (Fremling, 2005; Young 2004)

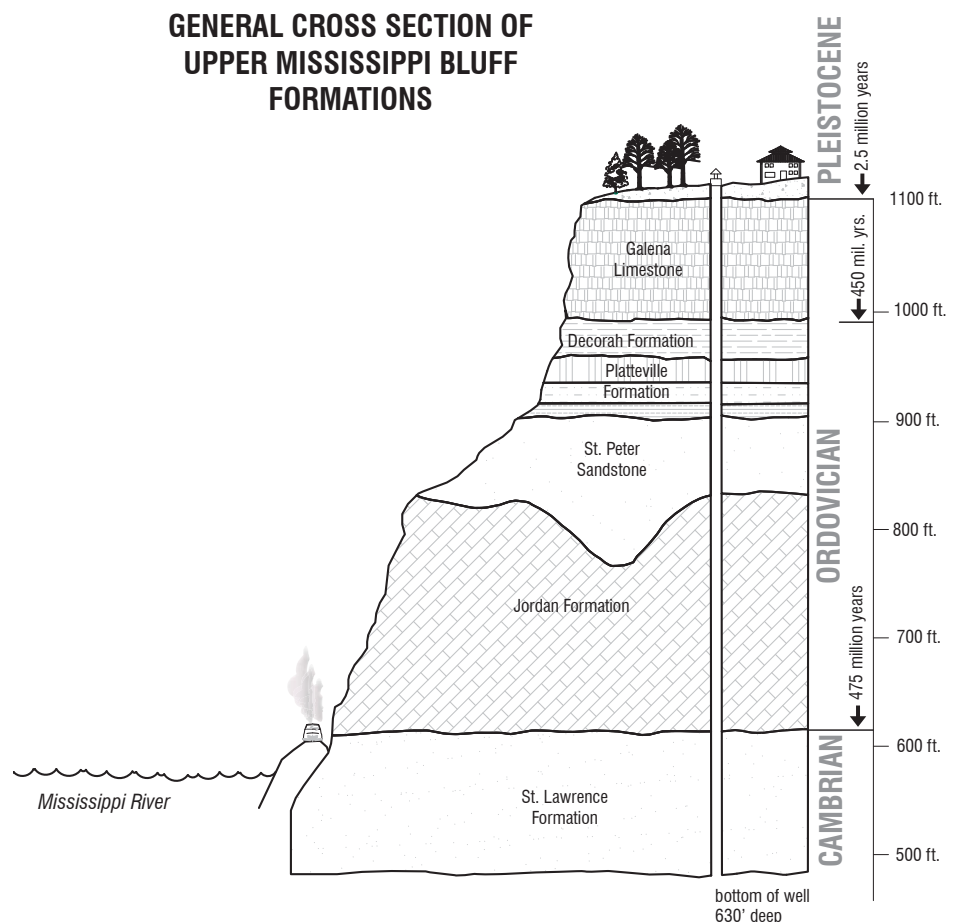


Figure 3-5. Geologic composition of the Upper Mississippi River bluffs;
Source: Author, adapted from Fremling, 2005

Region - Exploration/ Exploitation

“Ten thousand River Commissions, with the mines of the world at their back, cannot tame that lawless stream, cannot curb it or confine it, cannot say to it, ‘Go here,’ or ‘Go there’ and make it obey.”
--Mark Twain

Bounty of the Valley

The first Europeans that came upon the Upper Mississippi thought of themselves as discoverers of ‘virgin’ land (Young, 2004). What they failed to grasp was that the Upper Mississippi was far from virgin land. Native Americans had been living throughout the region, managing the ecosystems of the river valley for centuries. Dense, luxurious woodland lined the river bottoms as savannah prairie grew to the edge of the bluffs and cascaded down into the valley, sometimes to the rivers edge. Marshes were filled with reed and sedge cover and forage for water fowl. Mature islands supported large stands of maple, oak, cottonwood, and elm while the younger sandbars contained smaller stands of willows, cottonwoods, and sedges. All of these physical features of the river valley and adjacent savannah prairies were strategically maintained by Native Americans whose management practices would soon succumb to the advancing white man and his industry juggernaut. (Fremling, 2005)

Early settlers discovered a land, that they believed, was misused by its natives. Rich fertile prairies could be ploughed under to raise abundant crops, snags and sandbars ideal for fishing and bird hunting should be removed for easier river passage, marshes and floodplains should be reclaimed for farming and development, lumber of the northern forests can be cut and floated downstream to mills, the majestic bluffs could easily be mined for the rich minerals and ores, and the wildlife should be trapped or shot to be used in the trade of their valuable furs and pelts.

River Resurgence:

Early competition with the railroads made transit on the Mississippi River obsolete. Several parties concluded, the Upper Mississippi was dead and had little use but for the disposal of waste, however, there were some that kept fighting for the improvements necessary to make the river a competitor with the railroads. By 1900 both manufactures and farmers were producing more products than could be shipped via train. It became clear by 1930 river transit was needed again.

The Nine-Foot Channel Project:

Both the four-and-a-half-foot project and the six-foot project were successful in achieving their aims of deepening the Mississippi’s shipping channel, but river transport was still at a near standstill. To compete with the monopoly of railroads and answer the increasing volumes of goods needed for growing cities, river vessels had to be bigger and more efficient at moving cargo. In 1931 in support of those fighting for more river improvement projects, Congress authorized the construction of the nine-foot channel project. In 1933, as part of Roosevelt’s New Deal during the Great Depression, the nine-foot channel project saw a significant increase in funding, allowing the mammoth-sized project to be completed in a breath-taking six years.

Channelization projects of the past used wing dams, closing dams, bank armoring, and auxiliary dredging. The nine-foot channel project called for the construction of twenty-nine lock and dams that would regulate the length of river behind the dam creating deep navigation pools along the Upper Mississippi. This project marked the end of the free flowing river. Now channel depths could accommodate the larger vessels, but when a tow reached a lock and dam the crew has to break apart the tow to lock through to the next pool.

Environmental Impacts of the Nine-Foot Channel Project:

Conservations rejoiced at the creation of the Upper Mississippi navigation pools. Now many private lands were open to the public as the many floodplain areas filled with water creating ideal marshes rich in species diversity and ideal for duck hunting (Fremling, 2005). Most native river plant and animal species thrived as water levels were high, stable, and plentiful.

Unfortunately, this ideal setting lasted less than a decade. Periods of drying out is required by most river vegetation because this is how they have adapted to fluctuating water levels typical of a natural river system. Much of the river vegetation drowned due to the constant water level. Boats with onboard motors sliced pathways through the vegetation, removing cover and forage for water fowl. Dredging also played a significant role in destroying river habitats after the nine-foot channel project. Prior to 1973 when it was deemed illegal, The Army Corps of Engineers would deposit the dredged spoil in the most convenient locations, typically in nearby marshes and bay areas (Fremling, 2005). The fine sediment dredged from the bottom of the river filled the marshes and choked out the plant and animal species. Today the pools of the Upper Mississippi are mostly open water, devoid of plant life, with the only animal life being the fish under the muddied water surface.

Region - Environmental Issues

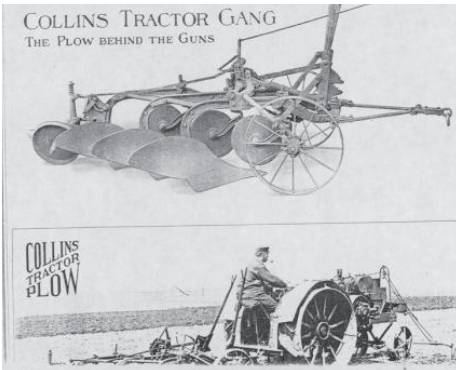


Figure 3-6. The plow, primary culprit of environmental degradation within the Upper Mississippi watershed
Source: Quincy Public Library

One of the consequences that has been determined through the study of the Upper Mississippi River history is that deforestation and poor agricultural techniques result in increasing water pollution and flooding. With the development of the Mid-Western states in mind, the Corps of Engineers has drastically altered the Upper Mississippi to facilitate the growth of cities and efficiently move cargo up and down the river. It should be stated that, presently, the transport of agricultural products such as grains downstream and the transport of energy such as coal upstream is so reliant on the Mississippi River system that the removal of the lock and dams would most surely spell the doom of the American Mid-West (Fremling, 2005). The following paragraphs account for two environmental issues that play a large role in the function of the Upper Mississippi, pollution and flooding.

Pollution

For the majority of time that Americans have lived along the Mississippi River we have treated the waterway as a conveyance of our garbage. Yes, the Mississippi River has been and still is the destination for animal manure, slaughterhouse wastes, human sewage, and garbage, luckily through the past century Congress has passed several laws regulating the treatment and disposal of waste products into the river system. The majority of pollutants that presently plague the Upper Mississippi River are sedimentation (fig. 3-6), fertilizers, heavy metals, and chlorinated hydrocarbons (Fremling, 2005).

Flooding

Flooding is a natural process of the Upper Mississippi, of which fish, animals, plants, and early humans have adapted. The cycle usually begins in the spring as snowmelt and rains give rise to the main flood of the year. This is followed by low summer water levels and a smaller flood event in the fall after trees have lost their leaves and less groundwater is lost to transpiration. Typically, there is a slight rise in water levels during June but midsummer floods are rare occasions (Fremling, 2005).

Floodplains are vital to the ecology of the river. Before the Upper Mississippi's river improvements, floodplains helped to reduce flood crests by temporarily storing floodwater; they also improve water quality, provide habitat and spawning areas for fish and wildlife, and provide opportunities for recreation (Fremling, 2005). Vegetation in the floodplain performs the crucial task of increasing the floodplain's roughness. The roughness of a floodplain is the resistance to the force of water effectively slowing the velocity of flood flows, allowing for the deposition of heavy sediment and reduction of erosion. Throughout the history of the U.S., floodplains have been 'reclaimed' from the river, as many of the wetland areas are drained and raised for agriculture or development.

"While flooding is a natural phenomenon, flood damage is a result of human use of the floodplain" - Calvin Fremling

Actions of man are resulting in more floods of greater magnitude while adversely low water levels are increasingly lower. Sprawling cities and large agricultural tracts of land both have elaborate drainage systems, if uncovered would look like an immense “circulatory system of the Earth” that conveys stormwater at ever increasing rates and volumes directly into the river and its tributaries (Fremling, 2005).

Within the twentieth century major flood events have occurred on the Upper Mississippi with increasing ferocity. Significant flood events occurred in the years 1916, 1920, 1922, 1938, 1942, 1951, 1952, 1965, 1969, 1973, 1993, 1996, 1997, 2001, and 2008 (Fremling, 2005). The Great Midsummer Flood of 1993 was one of the most destructive floods in U.S. history and one of the costliest natural disasters of the twentieth century (Fremling, 2005). What made the flood of 1993 unique were the high flood crests that occurred in midsummer without the contribution of snowmelt. Billed as a 500-year flood event, the flood of 1993 spurred a renewed urgency of flood control on the Mississippi, as the Corps of Engineers and municipalities began building larger and larger levees, evermore cutting off the floodplains and increasing the volume of water carried downstream. Missouri, one of the hardest hit by the flood of 1993, suffered at least \$3 billion in damages, yet today has spent \$2.2 billion in St. Louis alone on developments in a floodplain that in 1993 was completely submerged (Fremling, 2005). (fig. 3-7)



Figure 3-7. Sludge floats atop the water as this statue struggles for air near the flooded St. Louis riverfront in 2008; Source: Flickr

What is a Rivertown?



Figure 3-8. Statue of Quincy founder John Wood
Source: Flickr



Figure 3-9. Early sketch of the newly renamed river town Quincy, 1835; Source: Quincy Public Library

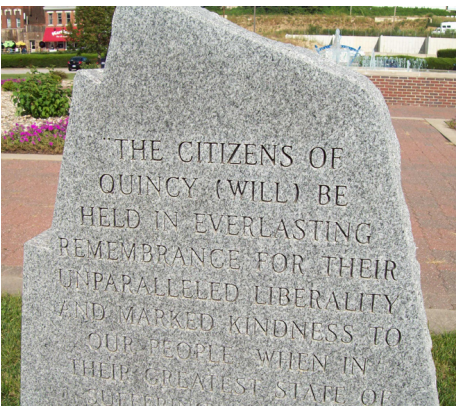


Figure 3-10. Monument remembering Quincy residents that took in the Mormons in 1838; Source: author

Common Trends Amongst River Towns

The emergence of river towns along the Upper Mississippi was driven by the transport of goods and people up and down the waterway and railroad connections to the east and west. Because of the momentous influence of the river, many river towns located on the Upper Mississippi evolved very similar urban design patterns unique to the region (Young, 2004). The livelihood of river towns were dependent on the Mississippi and residents were well aware of the flooding seasons, they watched for the freezing of the river in order to transport goods over the ice, and they anticipated the thaw in spring so steamboat traffic could resume. In most river towns the street fronting the river is fittingly named Front Street, and was historically the commercial corridor of town. During the steamboat glory days, docks where visitors would debark were some of the most valuable pieces of real estate in a river town (Young, 2004). When river towns were developed all principal streets ran parallel to the river and were flanked by warehouses, hotels, mansions, court houses, and saloons. Historically, in several cities such as Davenport and La Crosse, Main Street would run perpendicular to the river, over the bluffs into the countryside and were typically lined with homes.

A river towns purpose was to fulfill the needs of farmers scattered throughout the countryside. River towns offered similar professional services and were mostly geared towards the farming community. Professions such as harness-makers, boat-makers, blacksmiths, hardware and dry-goods stores, hotels, bakeries, gunsmiths, milliners, and tailors were necessary for both town residents and river passengers and crew (Young, 2004). Early in its development, a typical river town had a church or courthouse surrounded by a greenspace, which served as a main gathering space. Other aspects of social life found in many early river towns were church organizations, singing societies, marksmen's clubs, debate and literary societies, community bands, and baseball teams (Young, 2004).

Life was good in many river towns, however, the survival of the town was highly dependant on the river and things could change in an instant. Low water levels had the ability to take booming river towns and turn them into ghost towns after one season. Constant promotion was required in order to bring steamboats into a river towns dock so visitors would come and purchase local products. Today, the few remaining steamboats are more like floating museums and passenger transit on the Mississippi has almost completely disappeared. Tow boats and barges are the new kings of the Mississippi. Like the historic river towns, todays river communities are highly dependent on the movement of goods up and down the waterway.

Introducing Quincy

In 1821 adventurer and entrepreneur John Wood (fig. 3-8) purchased 160 acres of land at the west central edge of Illinois bordering the Mississippi. The land John Wood purchased and the surrounding area was originally the Native American tribal lands of the Sauk (Sac), Fox, and Kickapoo. Due to the rolling topography and scenic vistas Wood named the area “Bluffs”, and by 1825 the town was elected as the county seat. (fig. 3-9) The county was named Adams and Bluffs was renamed Quincy in honor of President John Quincy Adams. (seequincy.com, 2010)

Early in its history Quincy’s 1,800 residents provided refuge for five-thousand Mormons fleeing persecution in the adjacent state, Missouri. Quincians provided food and shelter through the winter of 1838-39, and as spring broke the Mormons settled forty miles north in Nauvoo (seequincy.com, 2010). Today many Mormons return to Quincy to retrace their heritage and provide vital tourism. Quincy in conjunction with the Church of Jesus Christ of Latter Day Saints has erected memorials honoring the residents of Quincy and marking important Mormon landmarks (Interview Bevelheimer, 2010).

Beginning around 1840 (figures 3-11 through 13), Quincy’s original settlers from New England began seeing a large influx of German immigrants traveling southwest from Chicago. Many immigrants settled in Quincy and began offering valuable trade and skills (seequincy.com, 2010). Presently many residents of Quincy still consider the town to be a German town and the impact of the early German immigrants is evident in the historic architecture and livelihoods.

The American Civil War was an extremely controversial social and religious issue as Quincy sat on the border between Illinois, a Union state, and Missouri, a Confederate state. Quincy was home to many loyal to the ideals of the Union and equally home to those who sympathized with the Confederacy. One Quincy home is confirmed to have been a stop on the Underground Railroad that helped slaves flee north to Chicago (seequincy.com, 2010).

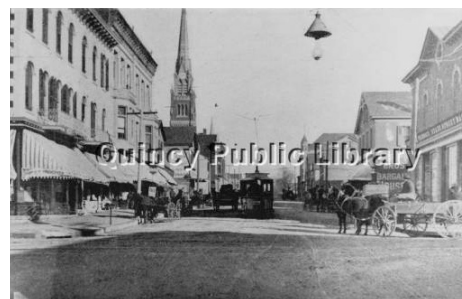


Figure 3-11. 8th Street looking east at downtown Quincy; Source: Quincy Public Library



Figure 3-12. Wholesale Row in Quincy; Source: Quincy Public Library

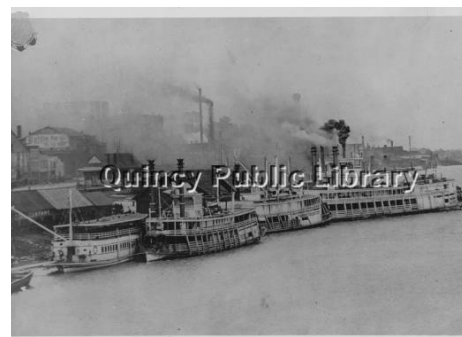


Figure 3-13. Quincy riverfront circa 1889; Source: Quincy Public Library



Figure 3-14. Example of historic Quincy architecture;
Source: Author

Akin to its fellow river towns Quincy utilized the riverfront as a massive industrial yard. Quincy's economy has remained relatively stable as industries have remained competitive and new corporations have strived to remain at the cutting edge of their fields (Interview Bevelheimer, 2010). Still a handful of major industrial drivers have closed or relocated. However, Quincy has begun to employ comprehensive planning strategies to combat blight and vacant downtown buildings. Voted twice an All-American City, Quincy has been exemplary at preserving historic architecture and maintaining its parks and greenspace. (fig. 3-14) From a planning standpoint, city policy is traditional and is expected to remain as such (Interview Bevelheimer, 2010).

Quincy has seen several natural disasters from tornados to mild earthquakes, but one of the greatest causes of destruction comes from the Mississippi River. Much of the lowlands within the Mississippi's floodplain are farmland, which is usually the first to flood should waters rise above flood stage. The flood of 1993 severely impacted Quincy and its economy as barge traffic was restricted and both bridges became impassable on the Missouri side. (fig. 3-15) As a result a 200 year levee was built along the Missouri banks protecting West Quincy, Missouri and the surrounding farmland.

During the 2008 flood Quincy was once again under pressure from an engorged Mississippi River. The Quincy levee and West Quincy levee held but levees to the north did not and large swaths of farmland were flooded directly northwest of Quincy and remained inundated for most of the growing season.



Figure 3-15. Flood of 1993. Aerial view over West Quincy, Missouri looking east into Quincy, Illinois; Source: ACE

City Mapping

The City of Quincy

Quincy is located on the Upper Mississippi River (fig. 3-16) and is defined as a micropolis (population between 10,000 and 49,999). Quincy is the largest city within a 100 mile radius, the closest city being St. Louis. As of the 2000 Census the population of Quincy was 40,366 residents, a slight increase in a twenty year trend of population decline. The current city limits of Quincy contain a total area of 14.6 square miles. (fig. 3-17) (cityofquincy.com, 2009)



Figure 3-16. Quincy's location on the Upper Mississippi River; Source: Author



Figure 3-17. Quincy's location in the region; Source: Author

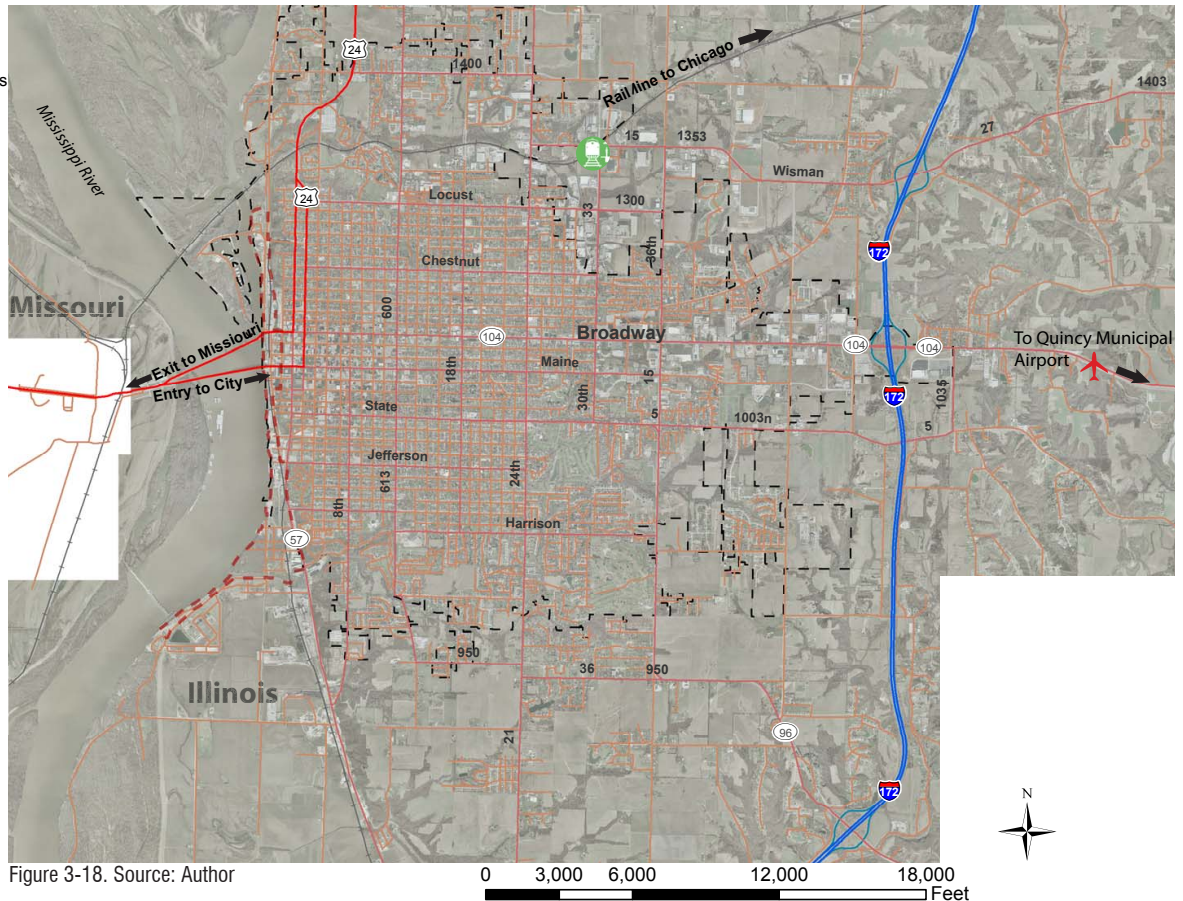
City - Circulation

Major Roadways + Rail Lines

Mapping Quincy's circulation network is an important step in understanding the town's connection to the region and it's basic urban skeleton. Figure 3-18 below illustrates primary and secondary highways and local roads. Note Broadway as it is considered the primary artery of traffic through Quincy. Downtown Quincy has been developed on a strong grid system that has endured since Quincy's founding. As development approached the city limits in the last century we can see the grid layout begin to dissolve into a dendritic pattern of single use areas such as residential subdivisions or business parks. Quincy rests at an important junction of the river and a rail line connecting to Chicago.

Legend

- Site Boundary
- Primary Limited Access
- Primary US & State Highways
- Secondary State & County
- Freeway Ramp
- Other Ramp
- Local, Neighborhood, Rural
- Railroads (150 to 50k)
- CITY_LIMITS
-  Train Station



City Bus Routes

Public transit has been an important method of transportation in Quincy for decades. Quincy has four bus routes, the blue route, the red route, the green route, and the yellow route. (fig. 3-19) According to the map, the length of Broadway, the primary corridor of movement and commercial development, has at least one bus route along any given portion. There are no bus stops or routes within the site area. The closest bus stop near the project area is one block away up a steep incline.

Legend

Bus Routes

ROUTE

- Blue
- Green
- Red
- Yellow
- Site Boundary
- - - CITY LIMITS

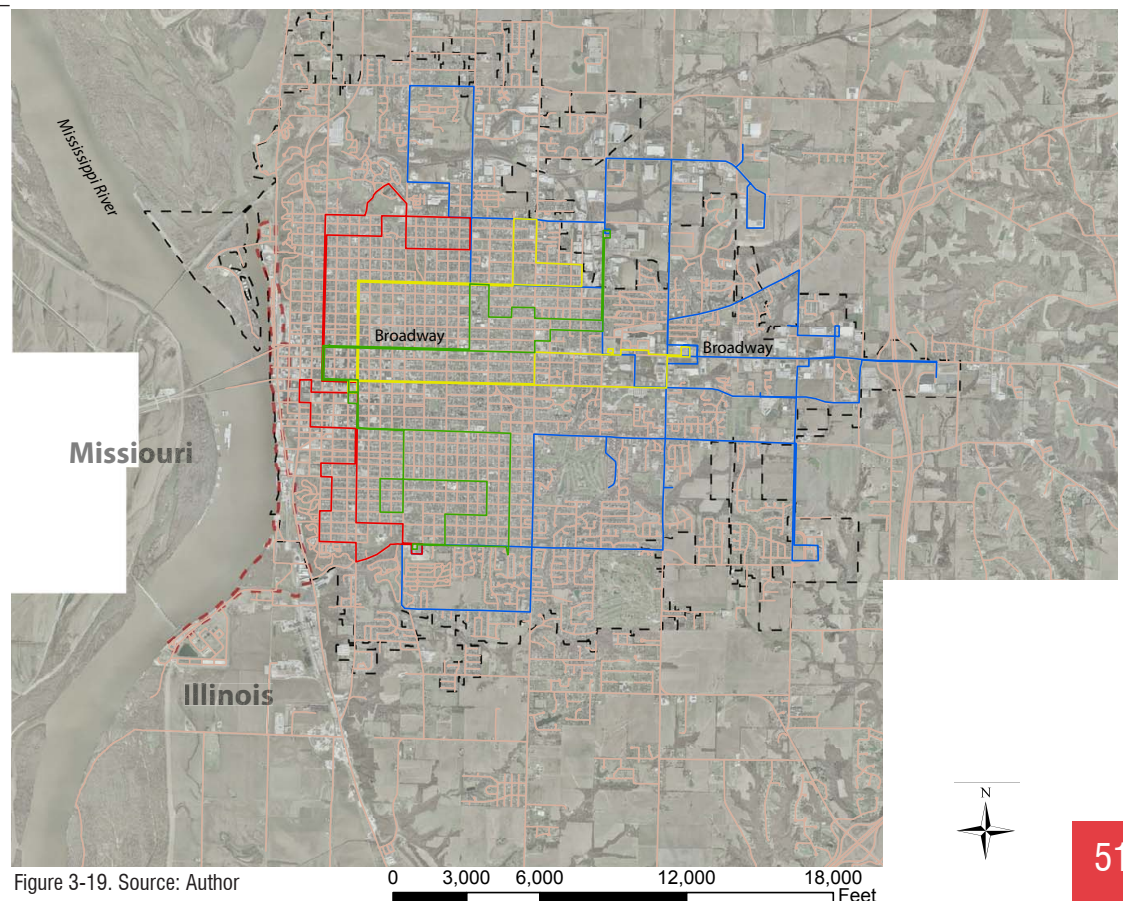


Figure 3-19. Source: Author

City Land Use

Zoning + Development Patterns

Figure 3-20 illustrating Quincy's zoning tells the story of Quincy's outward growth patterns as the city has begun to sprawl into the countryside. A commercial corridor has developed along Broadway making its way to highway 172. Yellow representing residential areas has slowly spread into the rural communities. Designated industrial parks are situated to the north of Quincy and south of the project area. In a recent county planning effort all of the major highway on and off ramps, three total, were proposed to become commercial nodes far from the downtown of Quincy. Currently, residents of Adams County oppose the plan as they fear the rural zoning that may come with it. To the west of the line running north to south near the downtown area, denotes a major section of Quincy that is seeing high rates of foreclosure and abandonment (City of Quincy, 2009).

Legend

- Site_Bdry
- Streams
- CITY_LIMITS
- ZONE7_07**
- ZONE**
- C1A; C1B; C2; C3
- D1; D2; D3; D4; D5
- M1; M2; M3
- NR1; NR2; R1A; R1C; R2; R3
- RE1
- RU1

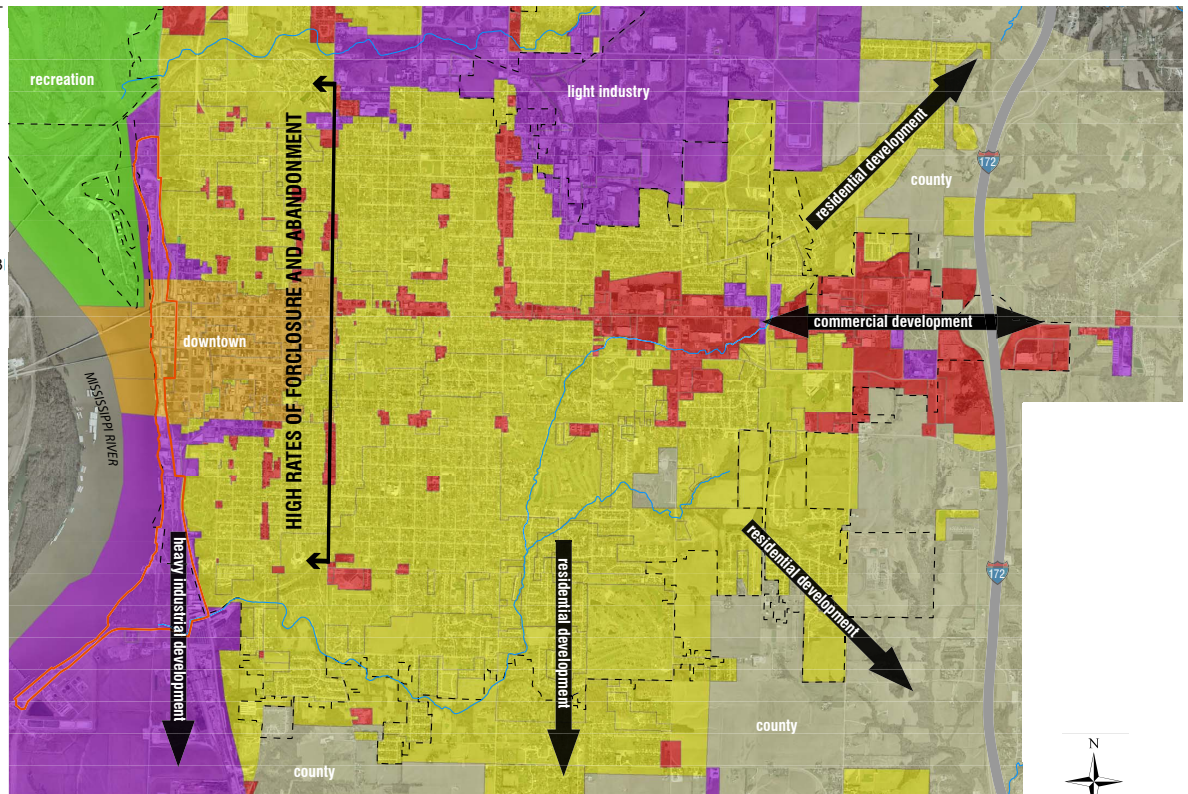


Figure 3-20. Source: Author

Parks + Walking Distances

Figure 3-21 presents a view of Quincy's greenspace. The areas highlighted in green are parcels owned and maintained by the Quincy Park District. Each parcel varies and include spaces that vary between being park-like, to plaza gathering spaces, river recreation areas, or simple planting strips. The circles placed at varying locations along the site help to give a sense of scale to the diagram. The larger circles have a half-mile radius or a one-mile diameter. The smaller, bolder circles have a quarter mile radius. A quarter mile is generally accepted as being a five minute walk if a person started at the center of the circle and walked to the edge.

Legend

- Centerline
- - - Site Boundary
- Parks + Greenspace
- Half Mile Radius
- Quarter Mile Radius
- - - CITY_LIMITS

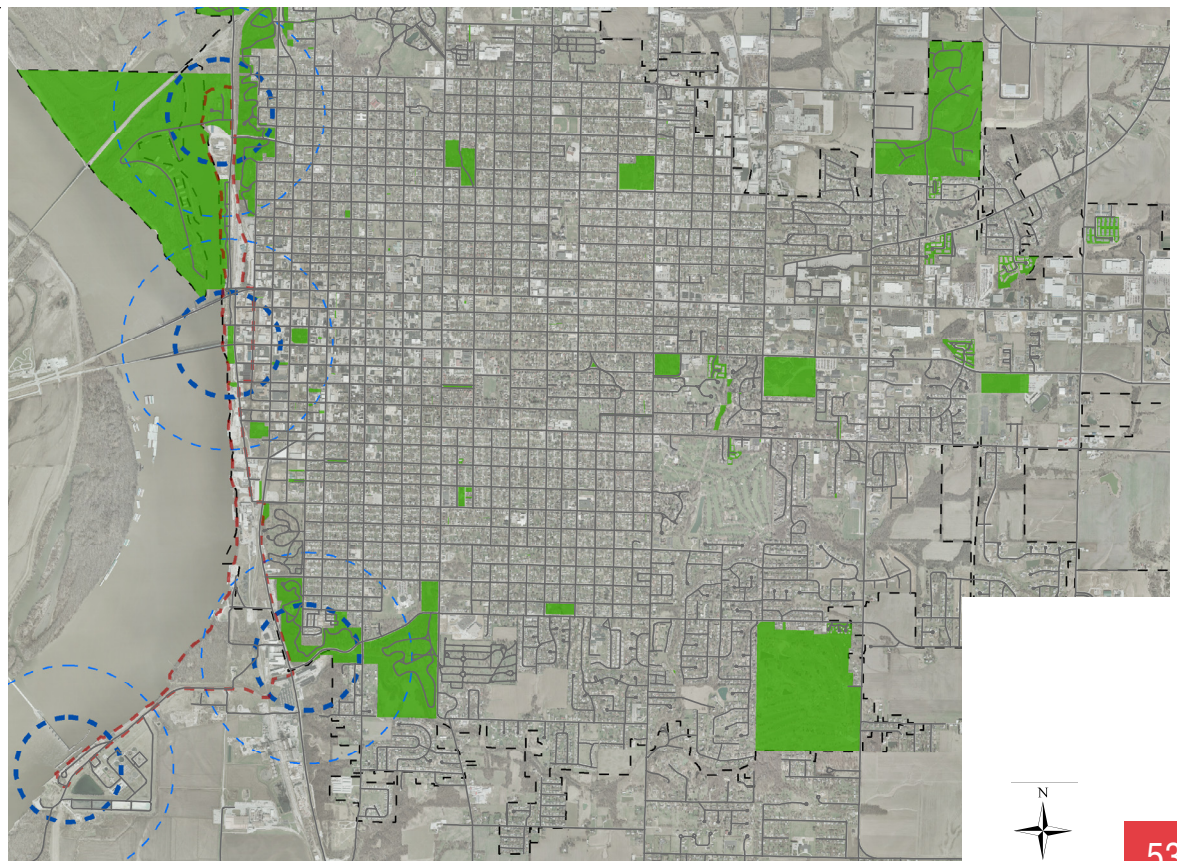


Figure 3-21. Source: Author

Where is the Riverfront?

Existing Conditions

The proposed site for Riverfront Found is located on the western edge of Quincy, Illinois and serves as the city's riverfront. (fig. 3-22) Approximately 3.5 miles long with an area of 340 acres the proposed site is composed of various land types and uses. The topography of the city's bluffs narrow the riverfront at the center of the site nearest to downtown Quincy, while the site opens up into a large floodplain to the north and south. Past land use included intense industrial use shifting to moderate industrial use and vacant industrial parcels, greenspace, and local commercial businesses. The site extends northward to the functioning train bridge and southward to Lock and Dam 21. River bluff formations primarily contain the east edge of the site while the Mississippi River forms the western border.



Figure 3-22. Existing conditions on and near the site;
Source: Author



Site - Existing Land Use

As illustrated in the existing landuse maps, (fig. 3-23 through 25) the site is dominated by two types of zoning, downtown and industrial with a small portion south of Villa Katherine being zoned as residential. Presently, most of the industrial lots are either vacant or have been converted to other uses. In the northern view of the site (fig. 3-23), much of the industrial use areas have been converted to open greenspace and parking access to river recreation, however, a large portion of the northern industrial zone remains vacant. The downtown zoned district extends to the river's edge and incorporates multiple uses. Some downtown uses identified within the site include: retail, commercial, office, entertainment, parks, light industrial/warehousing, city services, and a scattering of multi-family above some businesses. Though it appears industrial areas are bounded offsite by residential to the east, tall bluffs create a distinct separation and greenspace offers a buffer between the disparate uses. (See the following inventory map Landcover Type + Views for a more detailed look at the current conditions of the zoned areas.)

Legend

- Building Mass
- Centerline
- - - Site Boundary
- Zoning Type**
- Commercial
- Downtown
- Industrial
- Neighborhood + Residential
- Recreation
- Rural

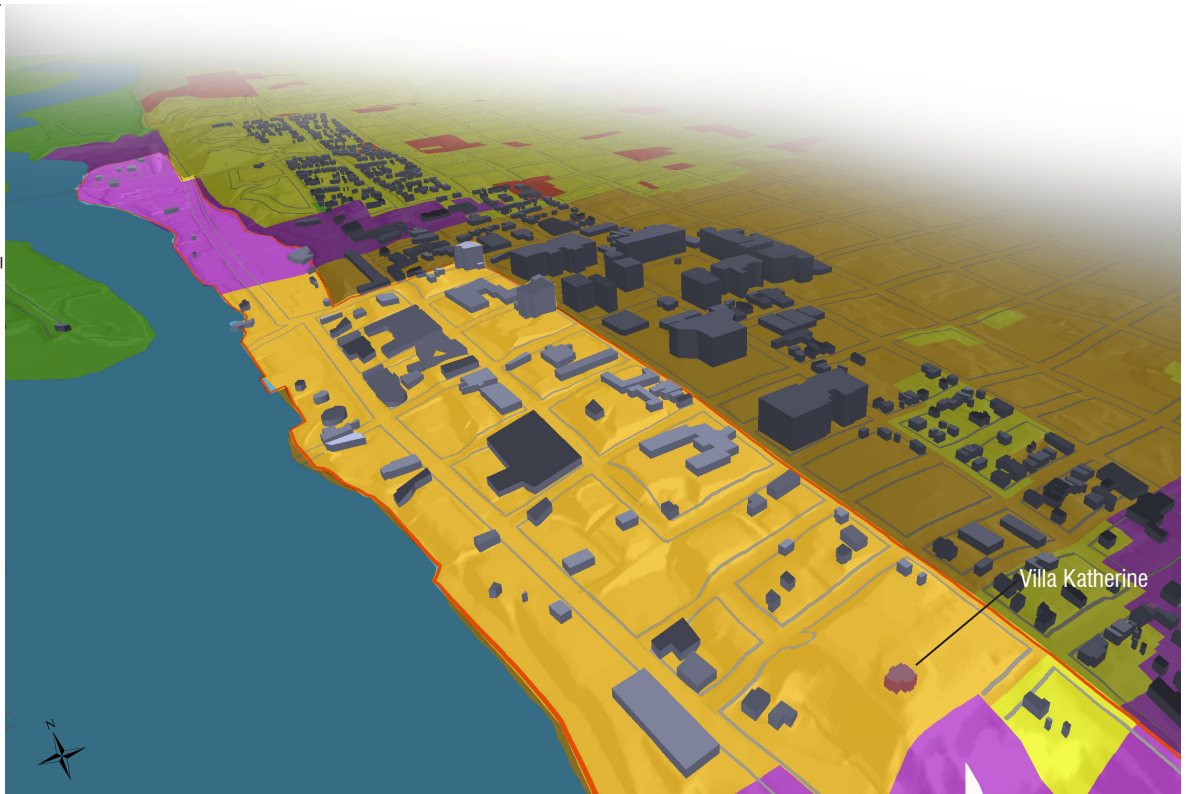


Figure 3-23. Looking north; Source: Author

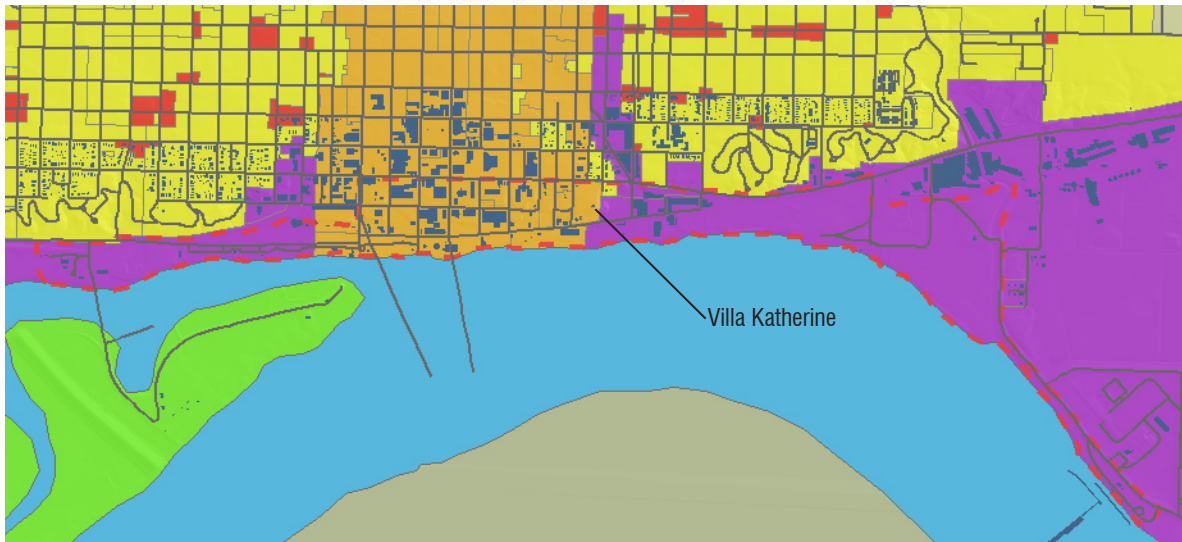


Figure 3-24. Plan view and key map of existing landuse; Source: Author

0 1,500 3,000 6,000 9,000 Feet
1 inch = 3,000 feet

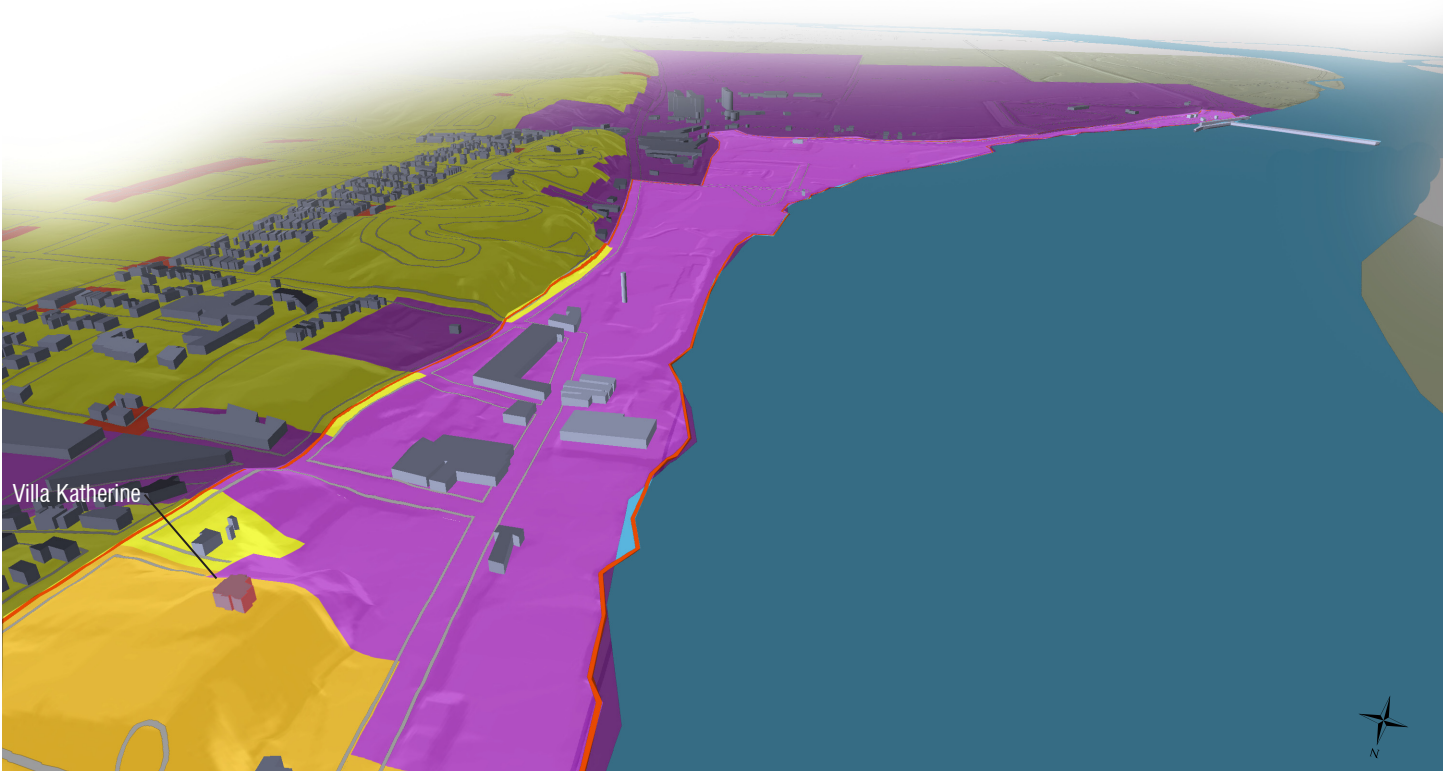


Figure 3-25. Looking south; Source: Author

Site - Land Cover Type + Views

For the purposes of this map land cover type illustrates current parks/greenspace, parking areas, and vacant parcels. (fig. 3-26 through 28) To the north much of the land cover within the zoned industrial area is parks, parking lots (this includes a rail switch yard), and vacant property. To the south many of the vacant industrial parcels are currently overgrown graveled parking sites. The vacant site illustrated farthest south is owned by the Corps of Engineers and is actually a wooded riparian area. Viewpoints are indicated as black dots and are positioned to give both views of the site and from the site. The individual viewer's viewshed is highlighted in yellow and merges with adjacent views. Views from atop the bluffs look over the site and out onto the river, while some views from the river's edge give a panorama of the Mississippi River observing the bridges spanning the waterway, down to Lock and Dam No. 21.

Legend

- Building Mass
- Centerline
- - - Site Boundary
- Vacant_prcs
- Parking Lots
- Parks + Greenspace

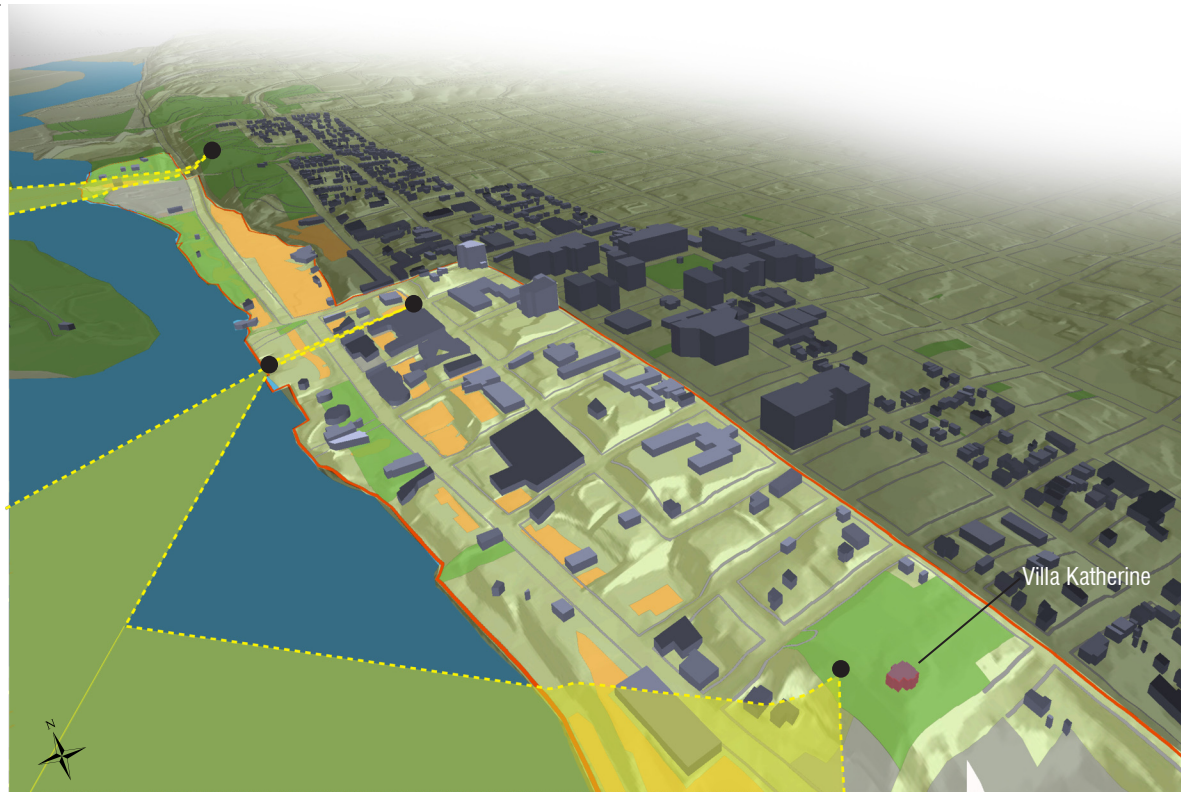


Figure 3-26. Looking north; Source: Author

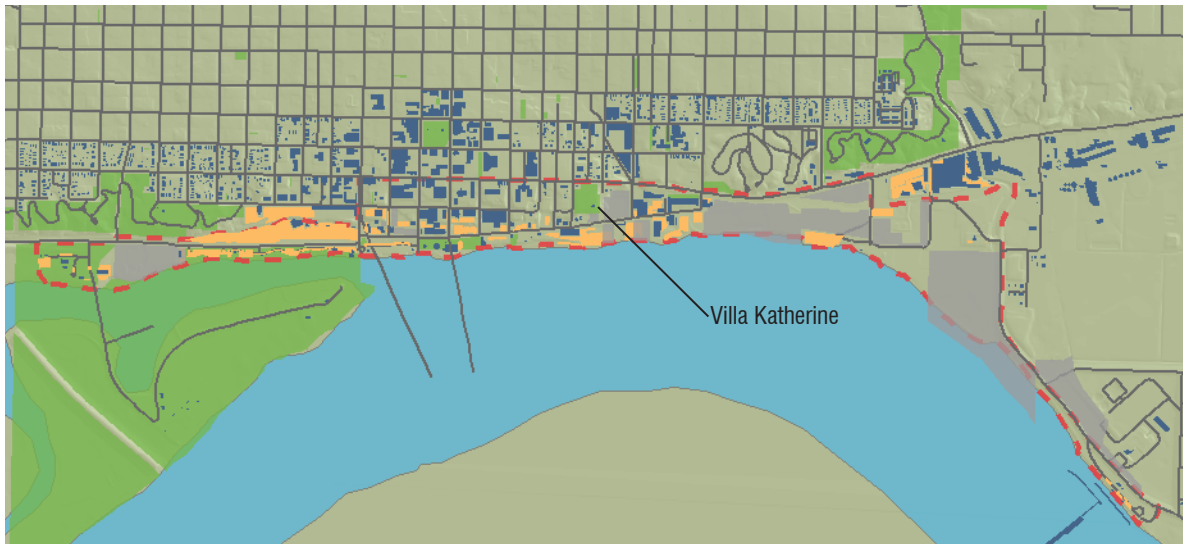


Figure 3-27. Plan view and key map of land cover and views; Source: Author

0 1,500 3,000 6,000 9,000 Feet
1 inch = 3,000 feet

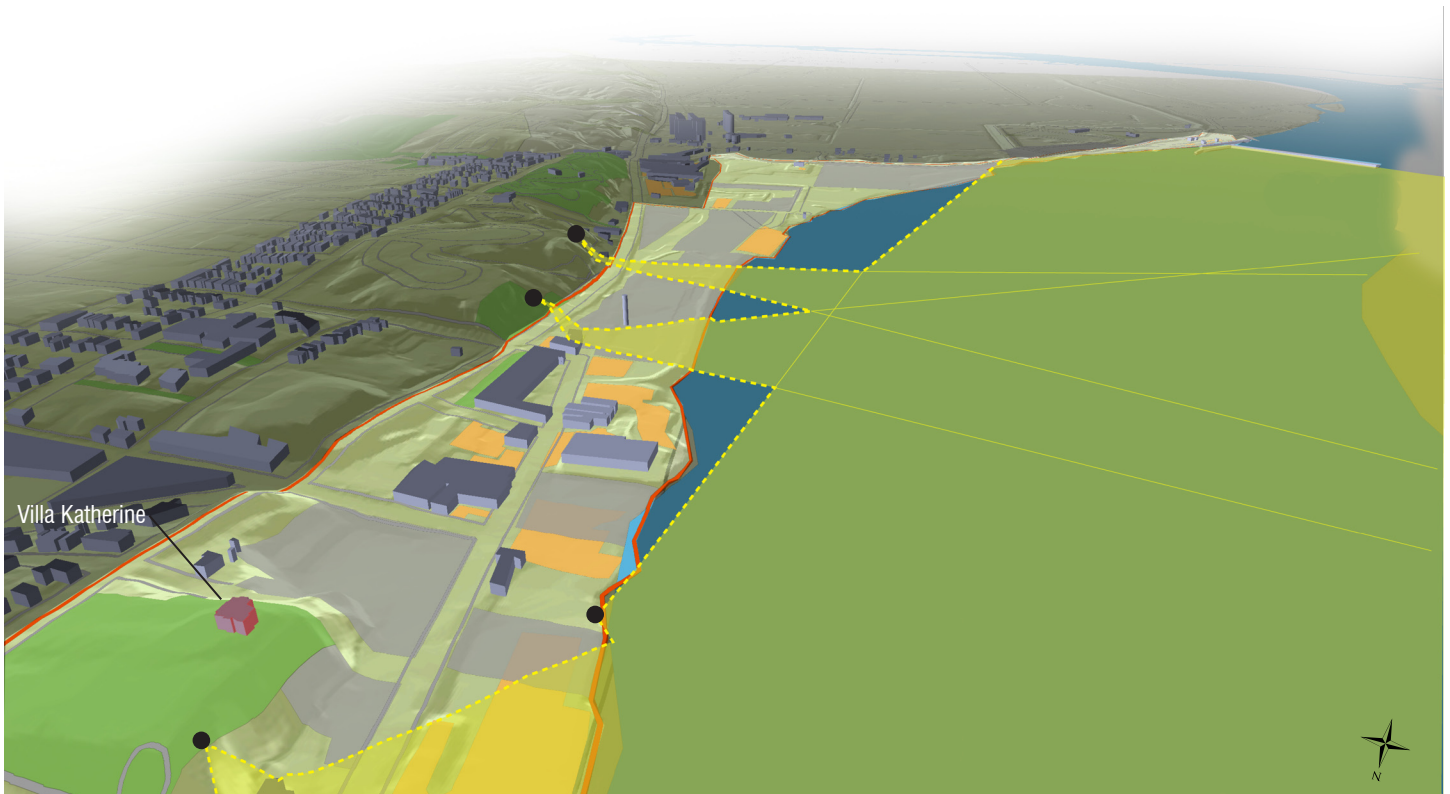


Figure 3-28. Looking south; Source: Author

Site - Circulation

Nearly two centuries of development has maintained a traditional downtown gridded network. (fig. 3-29 through 31) Within the downtown zoned district this gridded network extends to Front Street which parallels the Quincy riverfront and runs through approximately two-thirds of the site. In either the northern or southern industrial zoned sections of the site there are very few connections into the historic downtown but there are even less in developed residential areas due to the topography of the bluffs. A functioning railroad also parallels the riverfront, running a majority of the site length. Well maintained pedestrian walks are sparse and concentrated mainly near the core downtown section on the riverfront. A designated bike lane begins underneath the Bayview Bridge and runs north, beyond the site. There are no city bus routes within the site; the closest bus route travels two blocks on the eastern perimeter in the downtown area. Orange areas indicate a slope of 15% or greater, bringing to mind restrictions of mobility on steeper hillsides.

Legend

- Building Mass
- Centerline
- - - Site Boundary
- Bus Routes
- Pedestrian
- Bike Lanes
- Railroad
- Slope**
- 0 - 15%
- > 15%

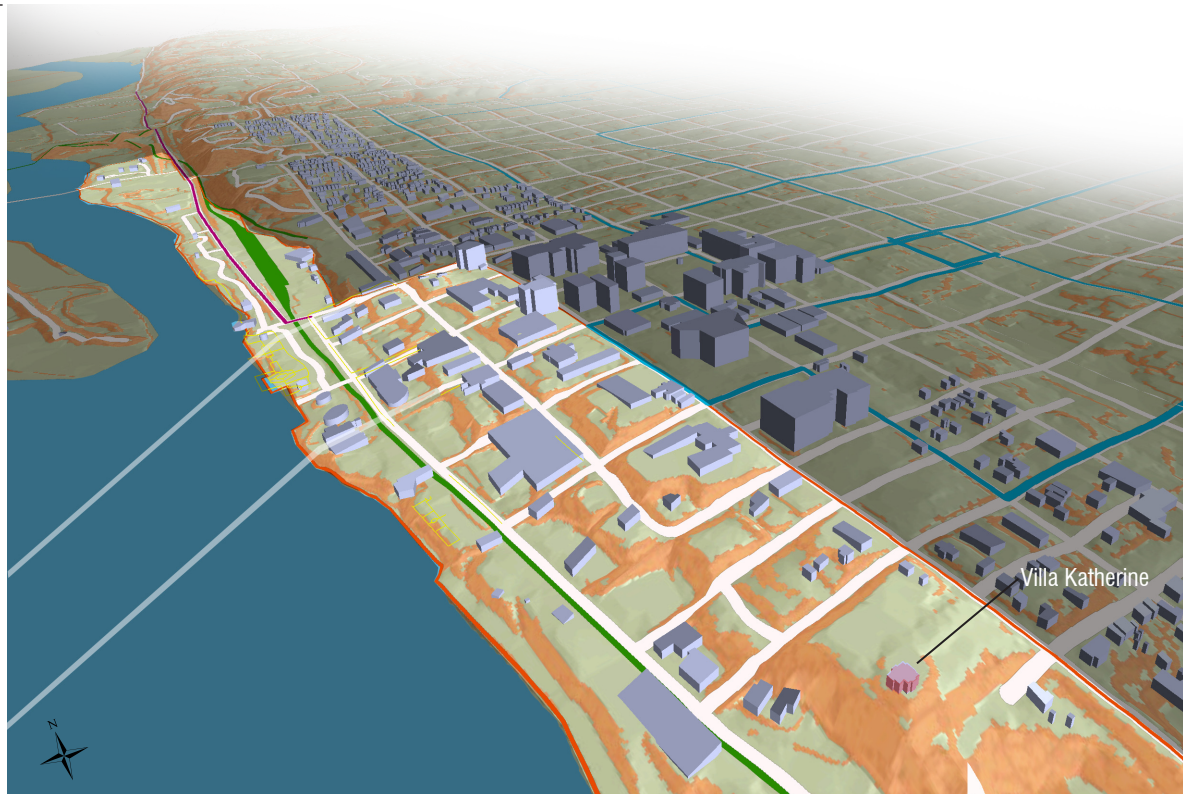


Figure 3-29. Looking north; Source: Author

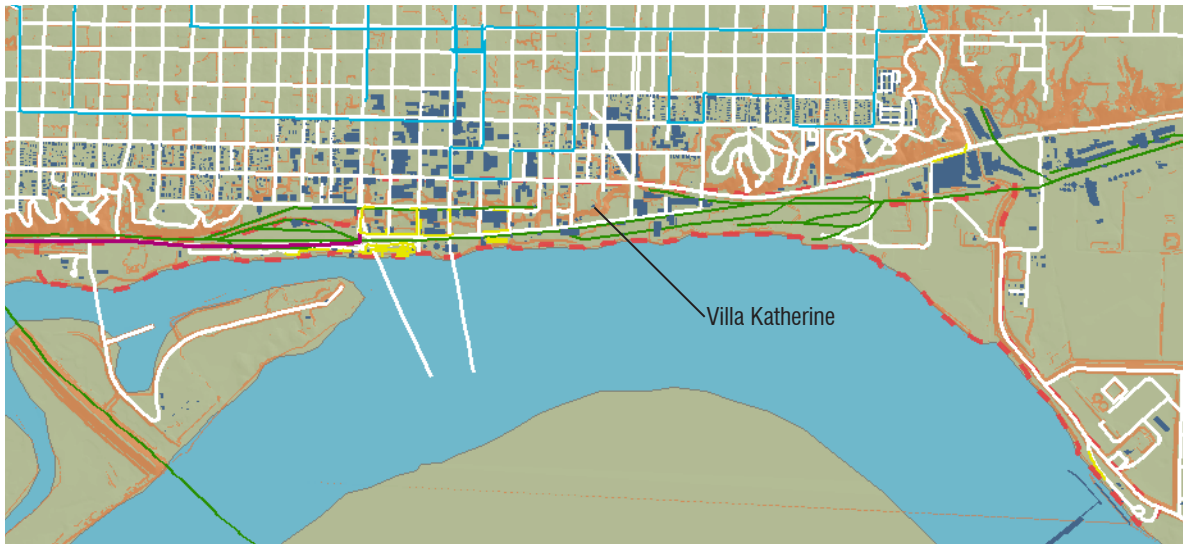


Figure 3-30. Plan view and key map of the sites circulation; Source: Author

0 1,500 3,000 6,000 9,000 Feet
1 inch = 3,000 feet

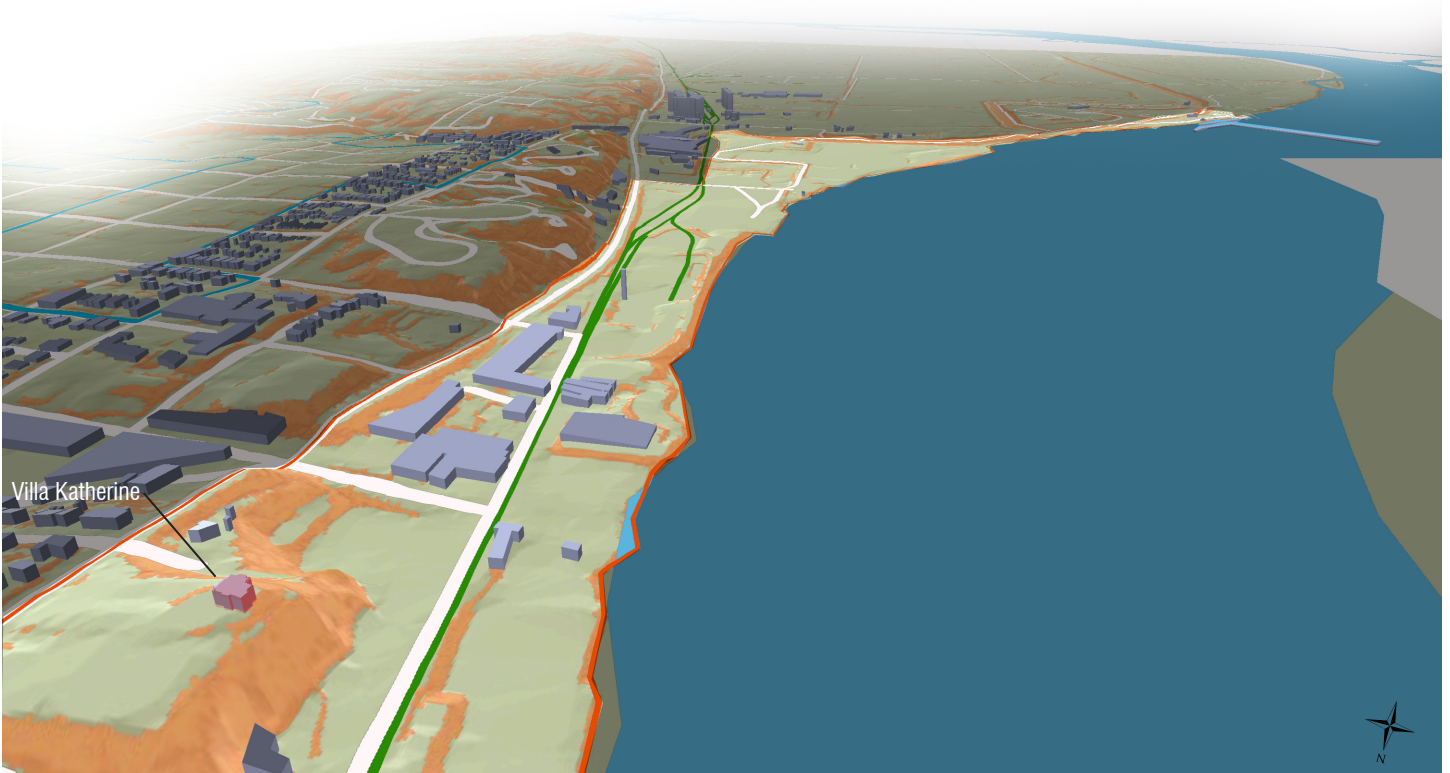


Figure 3-31. Looking south; Source: Author

Site - Built Forms + Mass | Void

Within the site many of the buildings rise to a height of no more than one to two stories. (fig. 3-32 through 35) Subsequently, most buildings are oriented more toward the interior use of the building and less on shaping the exterior spaces and providing a comfortable pedestrian realm. Some buildings do create a well defined streetwall and can be found onsite near the urban riverfront area and offsite on the downtown square. Within the site the dominant building use is business and includes various types of businesses with some being: restaurant, nightclub, retail, wholesale, service goods (ie: auto repair), offices, and supply services. Landmarks on site are Lock and Dam 21 at the southern terminus of the site, the Villa Katherine, a Moorish style historic residence (castle), and the Pier Restaurant, a unique building in the northern portion of the site that juts out over Quincy Bay. Other landmarks offsite are the Quincy Convention Center directly adjacent east of the site, historic buildings near the downtown square such as the Gardner Denver Museum of Architecture, and the Quincy courthouse to the northeast. Additionally, there are five hotels on and offsite with a sixth incorporated nearby in downtown mixed-use buildings. Many buildings on the riverfront illustrated in the view south remain industrial in use or restricted due to security purposes or private property rights.

Legend

- Centerline
- - - Site Boundary
- Streetwall
- Building Mass**
- General Use**
- Business
- Hotel
- Landmark
- Residential
- Restricted or Private Use
- Manufacturing + Warehouse
- Downtown Mixed-Use
- Public Use

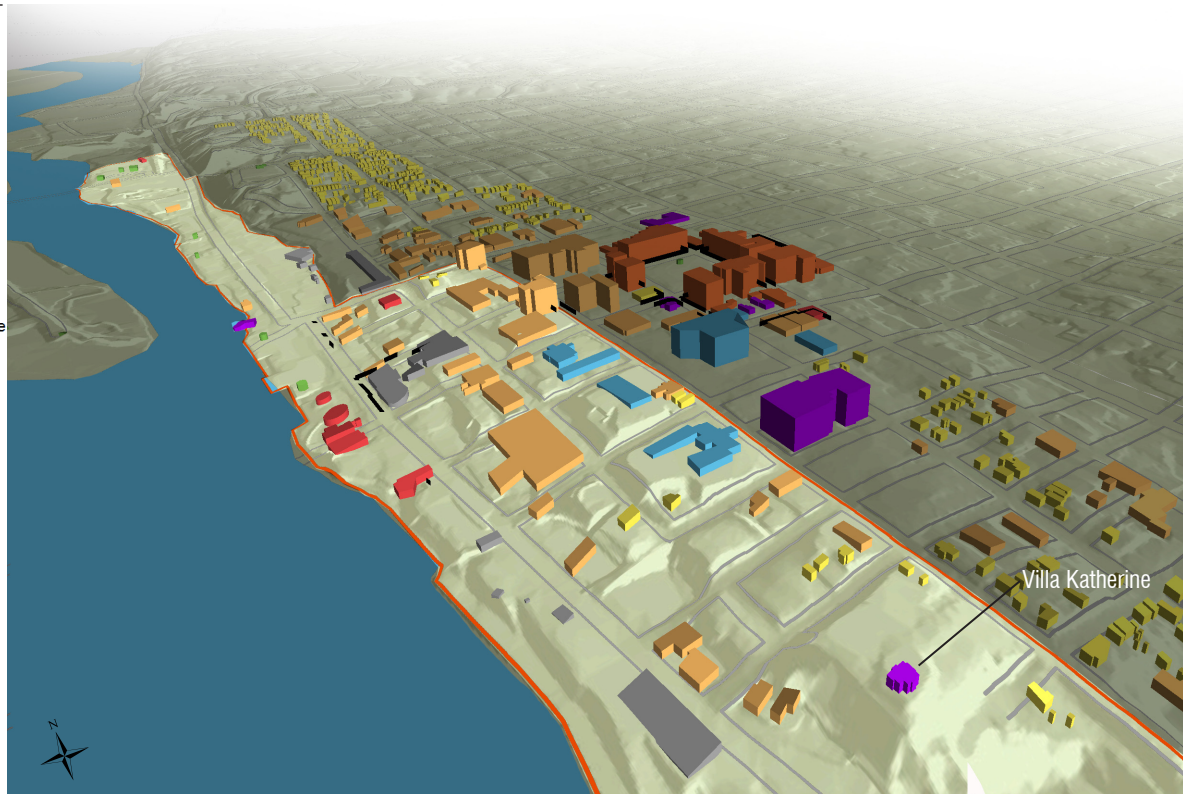


Figure 3-32. Looking north; Source: Author



Figure 3-33. Mass | Void; Source: Author

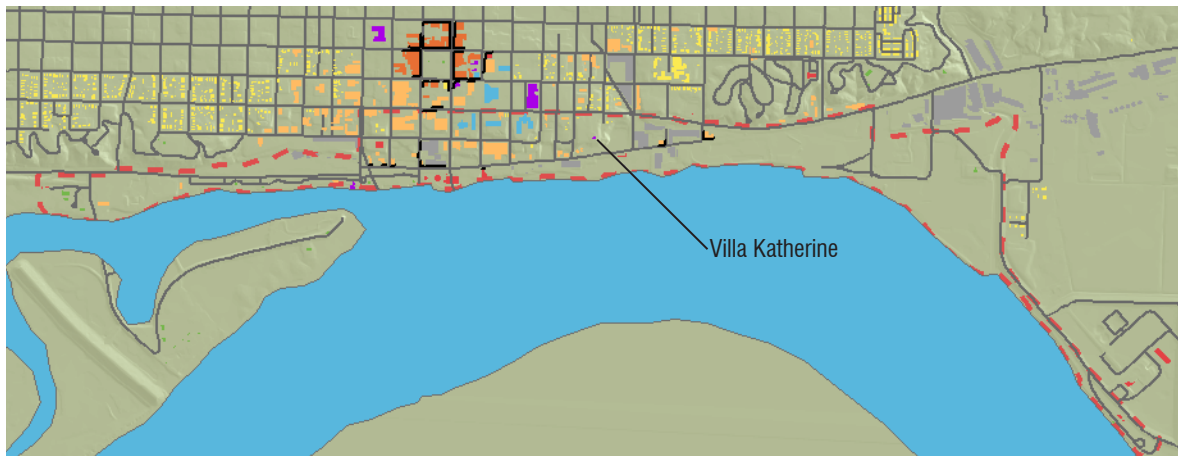


Figure 3-34. Plan view and key map of built forms; Source: Author

0 1,500 3,000 6,000 9,000 Feet

1 inch = 3,000 feet

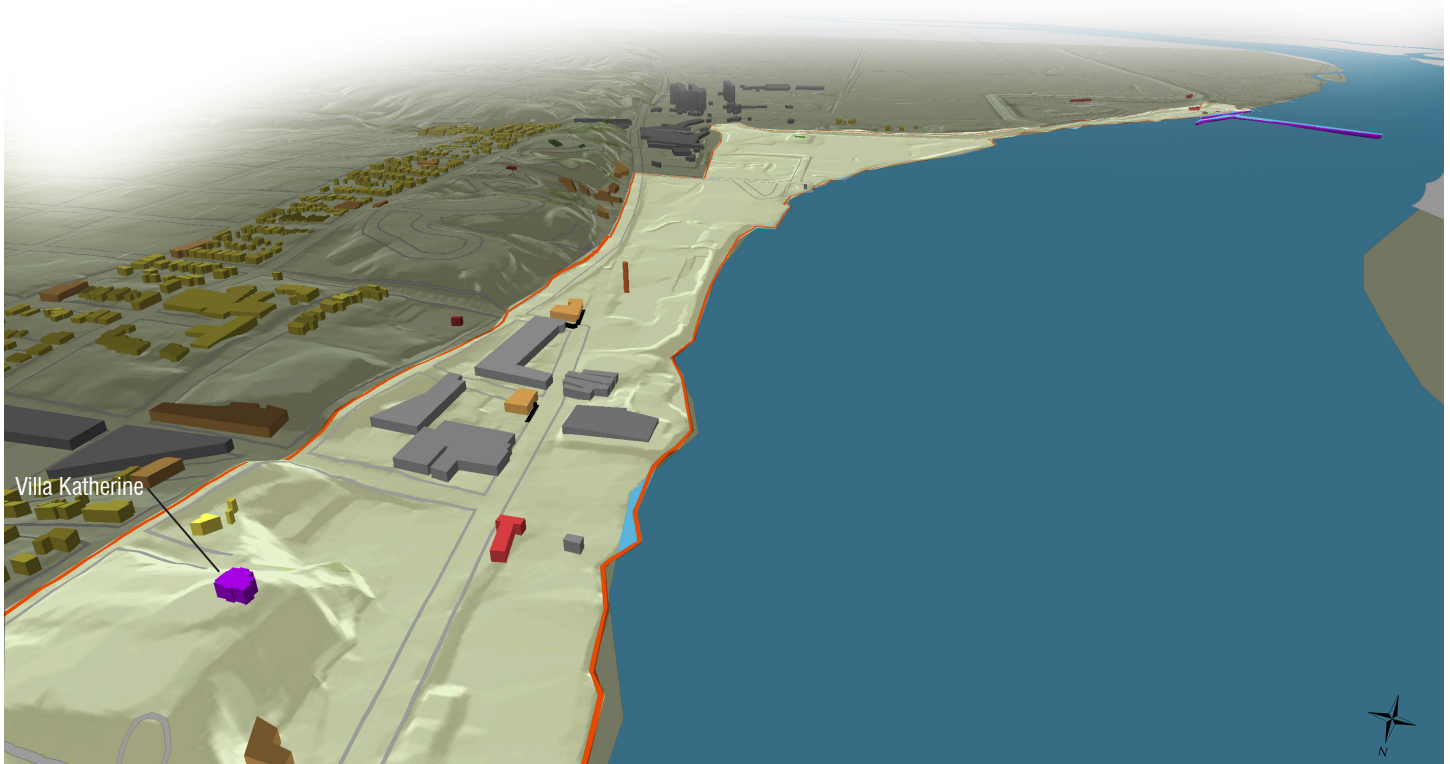


Figure 3-35. Looking south; Source: Author

Site - Infrastructure

Due to the riverfront's original industrial uses, much of the existing infrastructure is targeted at meeting the manufacturer's infrastructure needs. (fig. 3-36 through 38) A high capacity overhead electric line runs through most of the site, indicated on the map and at least two substations were located during a site visit. Estimated locations for stormsewer inlets and outlets were identified using site photos and aerial photography. Overhead lighting, indicated as extruded red lines, are composed of pedestrian, street, and security lighting. Lighting of Bayview Bridge and Memorial Bridge were not included in this study, however, both bridges are well lit for vehicular safety and provide nearby areas of the site with a diffused overhead glow. Civic infrastructure includes Quincy's drinking water source, a restricted access property that provides the entire city's water supply. To the south the city's water treatment facility is located offsite adjacent to the lock and dam.

Legend

- Building Mass
- Centerline
- - - Site Boundary
- Overhead Electric
- Overhead Lighting
- Storm Sewer

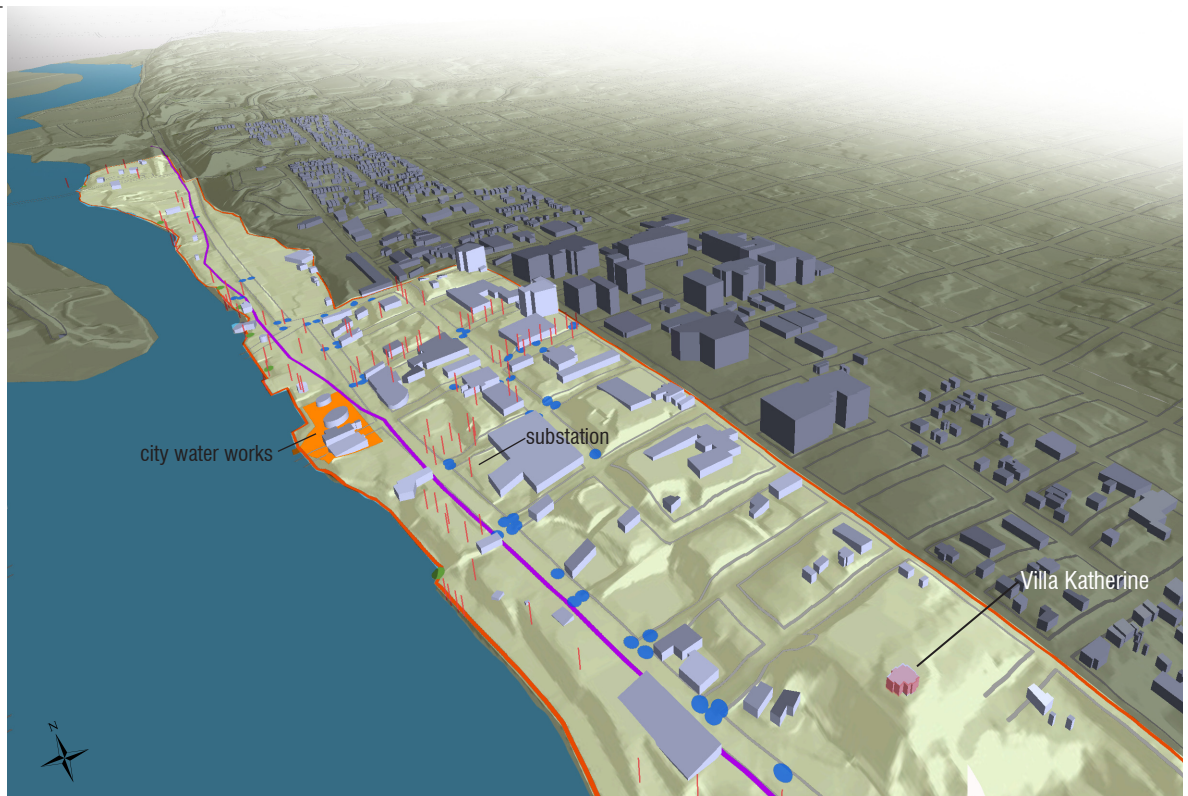


Figure 3-36. Looking north; Source: Author

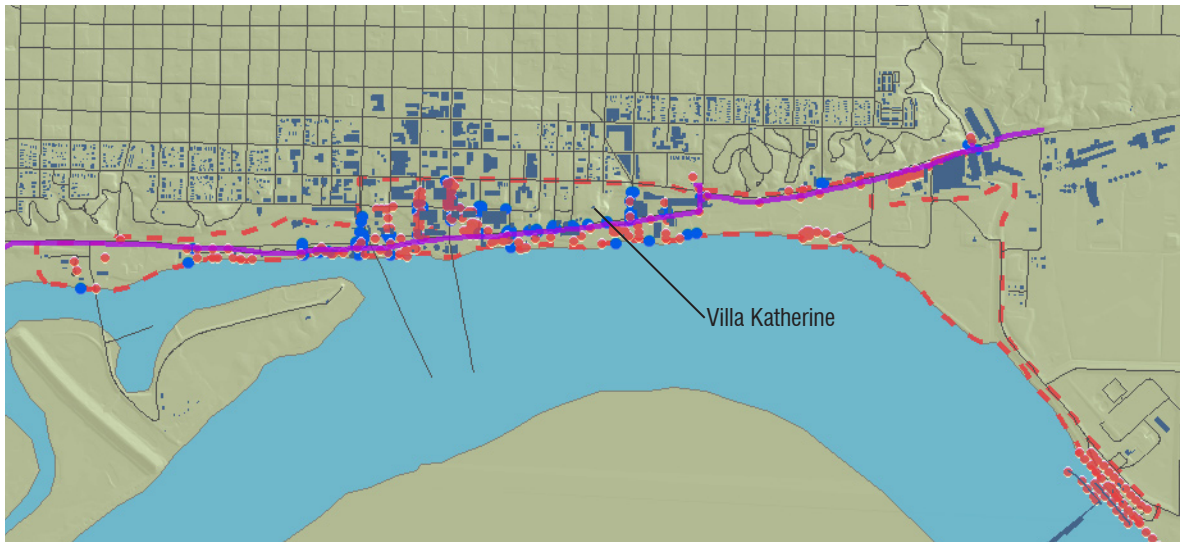


Figure 3-37. Plan view and key map of built forms; Source: Author

0 1,500 3,000 6,000 9,000 Feet
1 inch = 3,000 feet

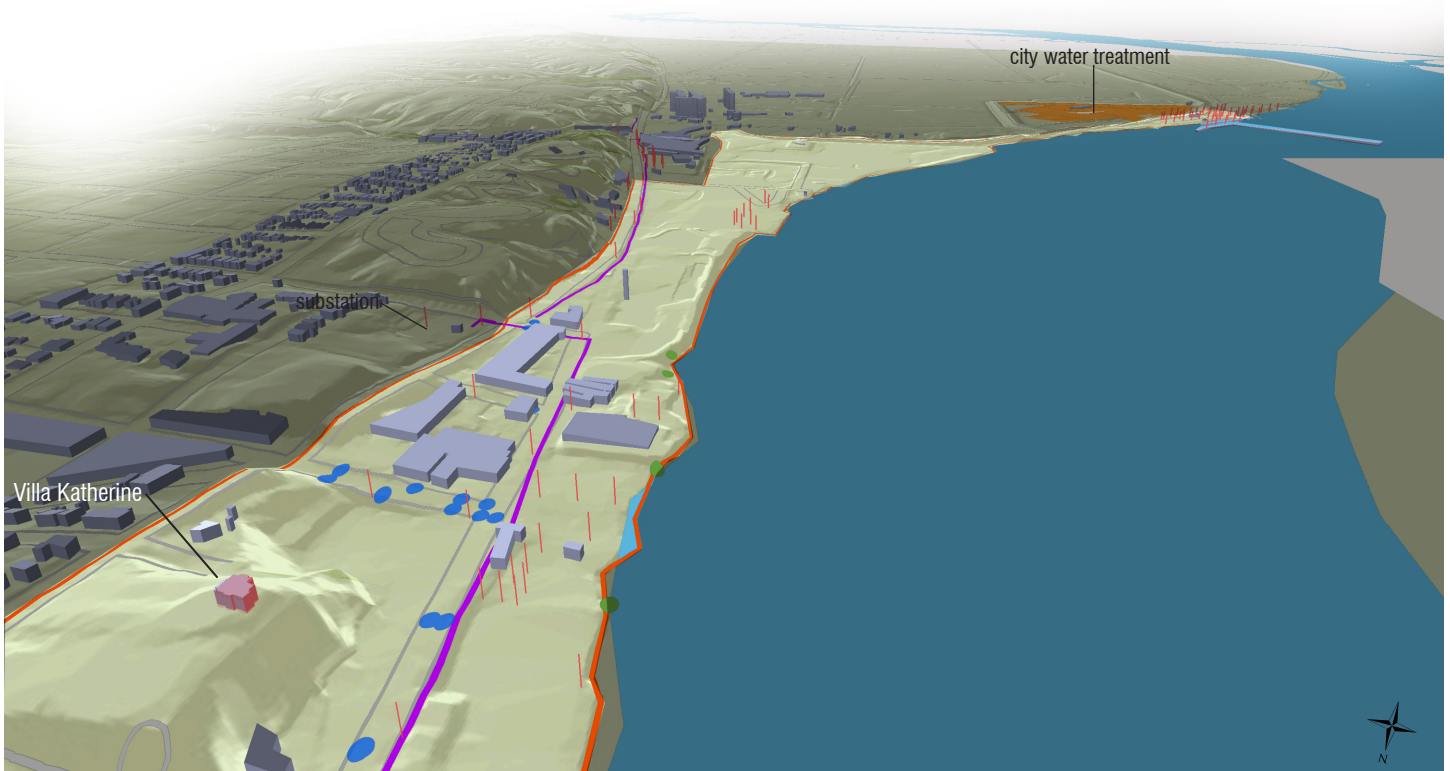


Figure 3-38. Looking south; Source: Author

Site - Existing Environmental Conditions

Several environmental factors influence the current conditions of Quincy's riverfront. (fig. 3-39 through 41) Tree cover varies with each zoned area. As is common in many historic towns the residential neighborhoods have a higher number of mature trees as opposed to the downtown area where primarily the only mature trees are found in the city square, Washington Park. Wooded areas occur mainly on the slopes of the bluffs and on or near parcels that have been vacant for some time. There are few trees located within parks on the riverfront which may be due in part to keeping views open to the river. The final leg of Curtis Creek runs along the southern border of the site where it straightens (likely a project by the Corps of Engineers) before emptying out into the Mississippi. A major levee system begins near the lock and dam, encircling the water treatment plant and continuing southward protecting farm and industrial lands. The riverbank is composed of varying materials with large portions being vegetated or armored, however, some of the vegetated riverbanks are overgrown riprap that were identified during the site visit but unidentifiable via aerial imagery. Much of the far north portions of the site are within the 100 year flood event boundary, while the sites central area is protected due to the built-up riverbank and topography. As the site progresses south the floodplain begins to open up resulting in the entire area within the 100 year flood event category. A distinct edge can be noted between the 100 year and 500 year flood boundaries created by the levee system.

Legend

- Building Mass
- Centerline
- Site Boundary
- Trees
- Wooded Area
- Streams
- Riverbank**
- Type**
- Natural
- Wall
- Rip Rap
- FIRM Map**
- Flood Zone**
- AE
- X500

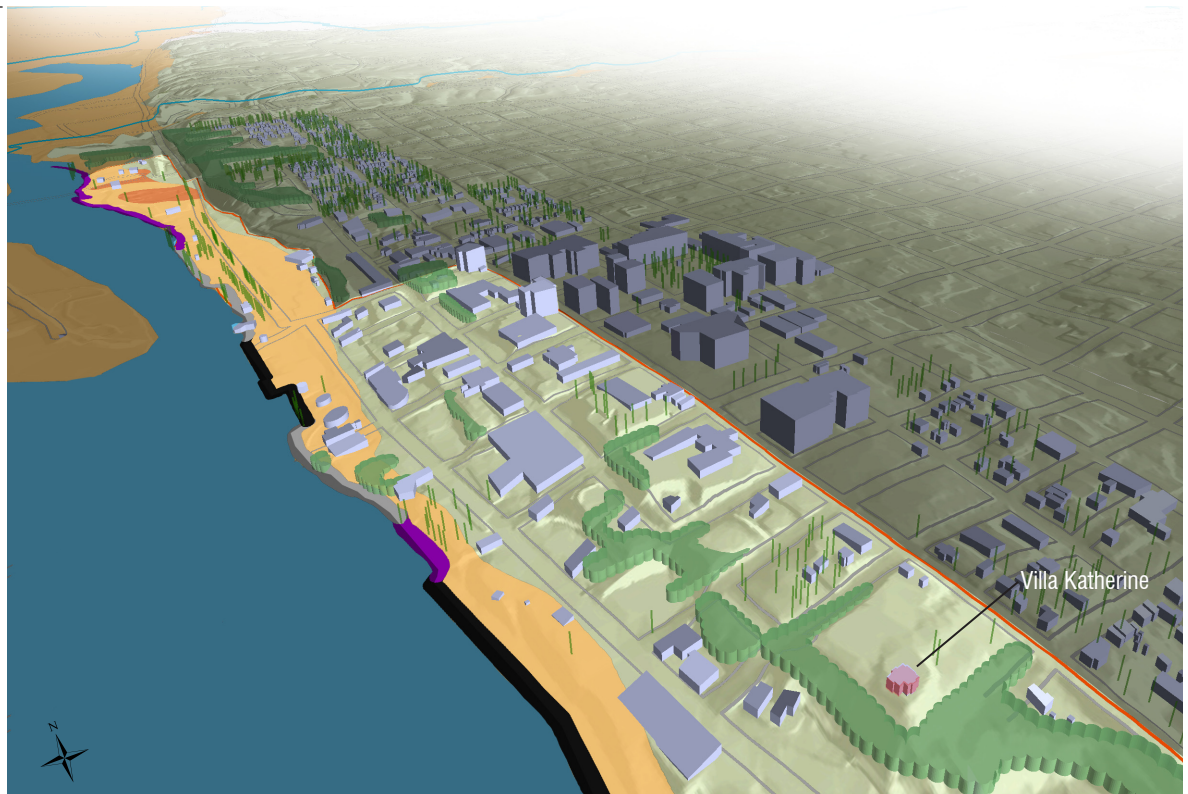


Figure 3-39. Looking north; Source: Author

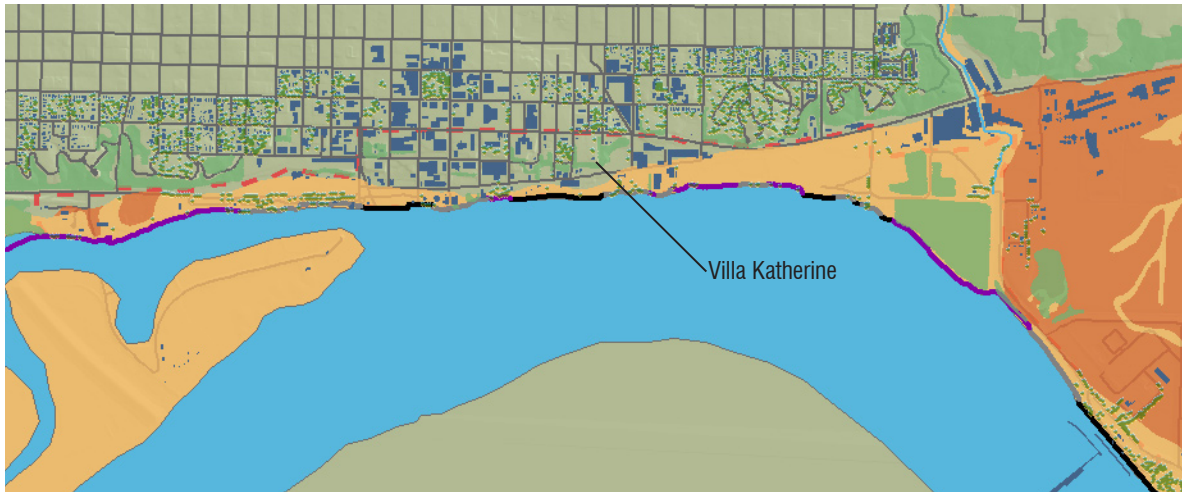


Figure 3-40. Plan view and key map of ecological elements; Source: Author

0 1,500 3,000 6,000 9,000 Feet

1 inch = 3,000 feet



Figure 3-41. Looking south; Source: Author

generation

044

Interpretive Analysis Introduction

With inventory data gathered and presented in the previous chapter, following is an interpretive analysis regarding each identified scale: region, city, and site. Summary text offers an analysis at the regional and city scale while an analytic framework is applied at the site scale. The analytic framework combines social and ecological values derived from the work of Kevin Lynch's *Image of the City* (1960) and Ann Forsyth and Laura Musacchio's *Designing Small Parks: A Manual for Addressing Social and Ecological Concerns* (2006). Figure 4-1 highlights the analysis process.

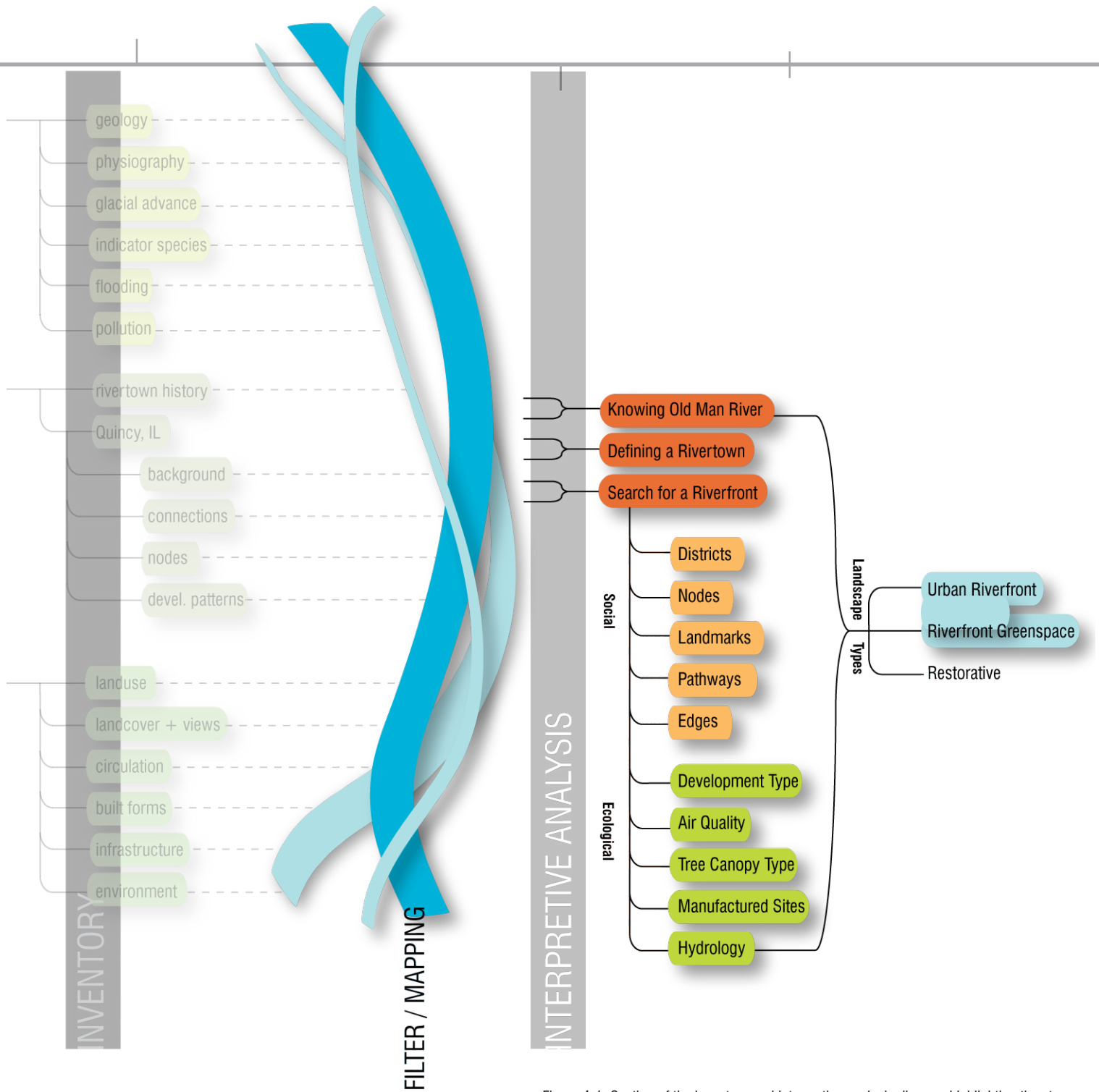


Figure 4-1. Section of the inventory and interpretive analysis diagram highlighting the steps within the analysis; Source: Author

Regional Analysis

Knowing Old Man River:

The Upper Mississippi River is more visually, ecologically, and historically unique than any other stretch of the river. Ancient processes and the modifications of man have created the river that we have today. An increase of public awareness and environmental lobbying movements have begun to shift how Americans see and treat the river. For instance, over the past half-century point-source pollution has significantly declined as all towns on the Upper Mississippi River now require their waste water go through at least one water treatment facility. In the same fashion industries and cities have stopped dumping their garbage and wastes into the river and many riverfronts are seeing a return of economic prosperity with the development of historic districts, retail areas, casinos, high-end residential condominiums, parks, and restaurants (Fremling, 2005).

Unfortunately, the Upper Mississippi's ecology remains threatened for two reasons. The first reason being the development of land either for agricultural use or to accommodate urban growth needs. Intensive agriculture use and urban growth has increased non-point source pollutants and stormwater runoff quantities which flow off of farm fields, and impervious surfaces. Combine the shrinking vegetative cover in the countryside with the increase of impermeable cover of spreading cities and it becomes easy to correlate the increasing occurrence of record flood and sediment levels to the development within the Mississippi River watershed.

Along with improper development techniques, another reason for ecological concern of the Upper Mississippi River are the impacts of the nine-foot channel project. Essentially, what the nine-foot channel project did to the Upper Mississippi was provide the Corps of Engineers a way of regulating the flow of the river to achieve constant water levels. As the lock and dams were constructed the river ceased to be a river and became a series of lakes (Fremling, 2005). Author Calvin Fremling points out in his book that "rivers are virtually immortal, lakes are mortal" (Fremling, 2005 pg 373). Lakes go through a series of life stages as they are born, mature, age, and die. As the natural fluctuation of the dry and flood seasons are removed from the Mississippi River so too go the species that depend on this dynamic process. Ecosystems lose their complexity as species either adapt to their changed habitat, quickly die-off, or slowly disappear. Eventually, without dredging, the pools created by the lock and dams will fill in with sediment (Fremling, 2005).

As the issues of use and ecology of the Upper Mississippi continue to unfold increased public awareness will promote the dialogue needed to address these problems. Likely, municipalities will be held more accountable for their urban and agricultural stormwater runoff volumes and pollutant levels. To address these issues communities can promote better farming practices where farmers are allowed to 'live in local ecologies' (Fremling, 2005) or opening up the floodplain back to the Mississippi. Converting drained wetlands and developed floodplain into public recreation can aid in restoration, or preservation of the bluffs flanking the river which can protect the character identity of the Upper Mississippi River.

The Upper Mississippi River has shaped our continent, our history, and continues to shape our future. Users of the river vary greatly from commercial tow operators, recreational boaters, hunters/fishers, tourists, environmentalists, the designer or anybody else who has a vision for the river. A time will come when decisions will have to be made as to the future of the river. Do we increase the capacities of the lock and dams? Do we develop in the floodplain? Do we allow the river to perform its natural processes? Should we begin seasonal draw downs of the pools? Should we restrict the types of recreation boats allowed on the water to reduce shoreline erosion? The answers to these questions will affect the entire river including the riverfront of Quincy. Decisions about the design of the riverfront must take into consideration the processes of Mississippi River and the changes that will come in the future. In essence it is a balance of social and ecological values that will give Quincy's riverfront its character and create a regional destination.

City Analysis

Defining a River Town:

Today many river towns are making dramatic shifts in the way they treat their rivers. Instead of walling themselves off from the river, many communities have begun to incorporate them into their urban fabrics by removing old industrial yards and warehouses and revitalizing their riverfronts with shops, restaurants, hotels, day-boating docks, and other amenities. Awareness amongst river communities is growing as citizens find a new respect and value for the magnificent natural feature flowing through their backyard. What used to be a liability is now the lifeblood of several river towns like Davenport, Iowa or Rock Island, Illinois. In the town of La Crosse, Wisconsin city administrators offered a tax incentive to property owners to restore historic riverfront buildings versus tearing them down, which has preserved the historic character while promoting economic growth (Young, 2004). Along the entire Upper Mississippi River, towns and cities have converted industrial yards and dilapidated riverfronts into baseball fields, parks, trails, centers of commerce, tourist destinations, and educational opportunities.

Quincy has much in common with other river towns, however, the city is in a constant struggle as commercial development pushes farther east, away from the river. It is likely that many developers prefer the greenfield opportunities afforded on Quincy's fringe versus the existing conditions and outdated infrastructure in the city's downtown. Many of the commercial developments are big-box stores, reliant on highway and interstates for the arrival of their goods and require large spaces for expansive buildings and parking lots; all of which would be difficult to locate a suitable site and conform to the character of the downtown. The push for revitalization of the riverfront will have to come from the citizens, for without their support any redevelopment project would likely fail. Presently, the push for the downtown revitalization of Quincy is coming from two fronts, the city's planning department and from several grassroots campaigns; one being the biweekly farmers market in Quincy's town square, which promotes the use of the downtown. Others include the restoration of key historic landmarks within the downtown and riverfront areas or the education of native ecosystems in grade school.

The train station located on the northern edge of the city limits is disconnected from the town as train riders must drive several blocks into an industrial zone and stand in an uncovered parking lot to board the train. Likewise there are no bus routes linking Quincy's riverfront to the rest of town and the existing bus stops make riders stand in the open with little thought of comfort or dignity.

Quincy is lucky to have an expansive public parks system. However, it appears that there are very few connections between individual parks. In 2009 Friends of the Trails opened the first leg of their Cedar Creek Trail which begins at north 18th Street and runs west to north 12th Street. If Friends of the Trail intend to continue the trail further west a connection could be established with the riverfront.

What is required for a revitalization of Quincy's riverfront is a campaign geared at promoting awareness of the river and showing residents what other river towns have done with their riverfronts. Increasing the public's awareness of the plight of Quincy's riverfront will turn their eyes westward, towards their Mississippi River.

Search for a Riverfront

Framework for Site Analysis: Developing an analytical framework will help to guide not only my interpretive analysis but offers a basis and rationale for programming and design decisions. My framework evolved from a shared interest with both social and natural systems. Inspired by Kevin Lynch's *Image of the City* (1960), my social analysis addresses the five key terms that are critical concerning a city's image: nodes, landmarks, paths, edges, and districts.

An ecological analysis is vital to site programming and design, therefore, my framework includes analytical mapping of environmental resources and issues. There are many levels of detail and scale that can compose an ecological analysis. Key ecological components for my framework of analysis are adapted from Ann Forsyth and Laura R. Musacchio's book, *Designing Small Parks: a manual for addressing social and ecological concerns* (2006). These analytic components are: development type, hydrology, tree cover type, air quality, and manufactured sites. Table 4-1 on the following page outlines the framework and describes each analytic component in more detail.

ANALYTIC FRAMEWORK

Social	analysis component	to be mapped	Ecological	analysis component	to be mapped
	nodes	--gathering space, interactive river locations, gateways, circulation confluence		development type	--urban to rural to rural industrial
	landmarks	--buildings, parks		hydrology	--watersheds, riparian area, large connective impervious surfaces, streams
	paths	--connections in and throughout the site		tree canopy type	--floodplain forest, urban wooded area, wooded bluff hillsides, street/residential trees
	edges	--manmade, natural		air quality	--noise, fumes, urban heat island effect, prevailing winds
	districts	--downtown, town square, civic/hospitality, Broadway commercial corridor, riverfront commercial, manufactured site, floodplain, residential, greenspace network, floodplain forest, active industrial		manufactured sites	--vacant / post- industrial landscapes

Table 4-1. Table outlining the analytic framework applied to the site analysis;
Source: Author

Social Analysis

Nodes: Nodes are an important component of the social landscape and can represent many different types. Figure 4-2 to the right illustrates the nodes identified in and near the site. The size of the symbol indicates the importance of the node, for example Washington Park, the town square, is located to the east of the site and is represented with the largest symbol. The city dock located within the southern portion of the site is an important node of commerce and revenue for Quincy. Other types of nodes identified are gathering spaces, such as parks, access points to the river, gateways, and views.

Landmarks: Several landmarks can be located on and near the site. (fig. 4-3) Bayview Bridge, a suspension bridge connecting Illinois to Missouri, is likely the most notable landmark structure. Another important river landmark structure is Lock and Dam 21 located at the southern tip of the site. The Pier Restaurant offers a memorable landmark as the octagonal structure juts out over the Mississippi River allowing guests to enjoy a meal while enjoying nearly 270 degree view of the river. Other important landmarks are civic buildings including the Quincy convention Center, the Quincy Public Library, City Hall, and the courthouse.

Edges: Figure 4-4 to the right illustrates the edges created both naturally and by humans. Two very strong natural edges are created by the river edge itself composing the western border of the site and the topography of the bluffs composing a significant portion of the eastern portion of the site. Additional natural edges are located in the southern section of the site, created by the riparian woodland area and the stream channel. Transportation corridors create many of the manmade edges. Evident edges were created by both overhead bridges, Bonansigna Drive, and Front Street. Established street walls aided in defining the Front Street edge.



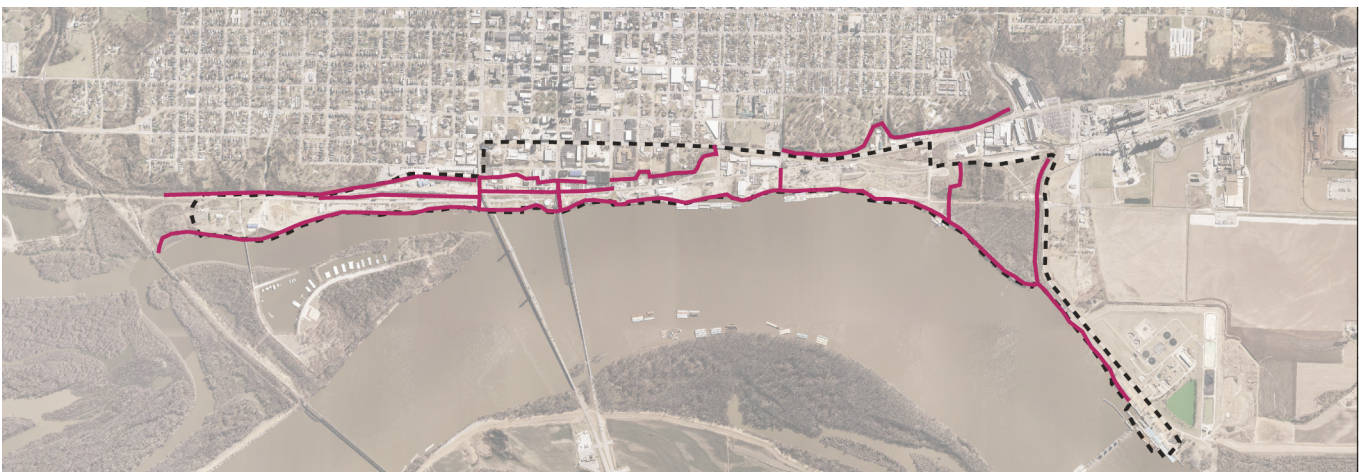
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Figure 4-2. Lynch analysis of Quincy riverfront nodes; Source: Author



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Figure 4-3. Lynch analysis of Quincy riverfront landmarks; Source: Author

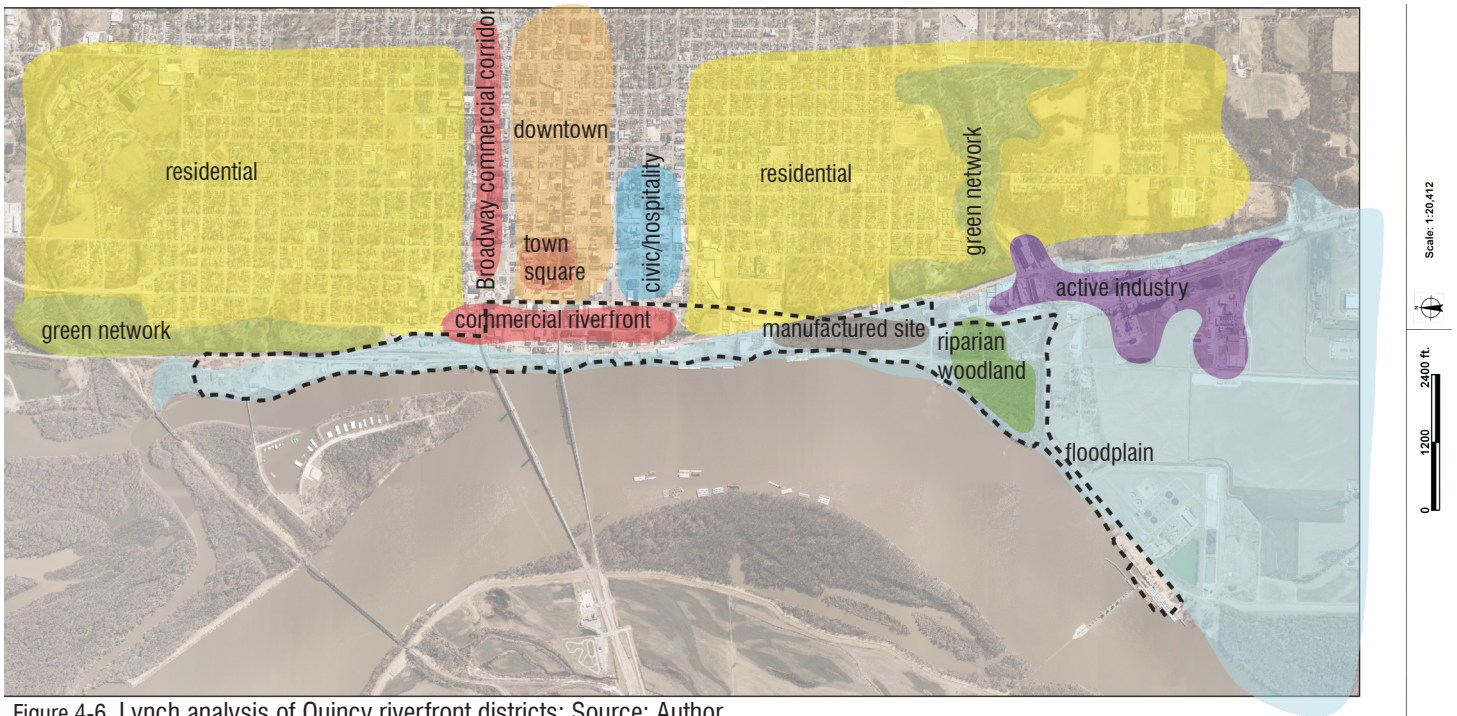
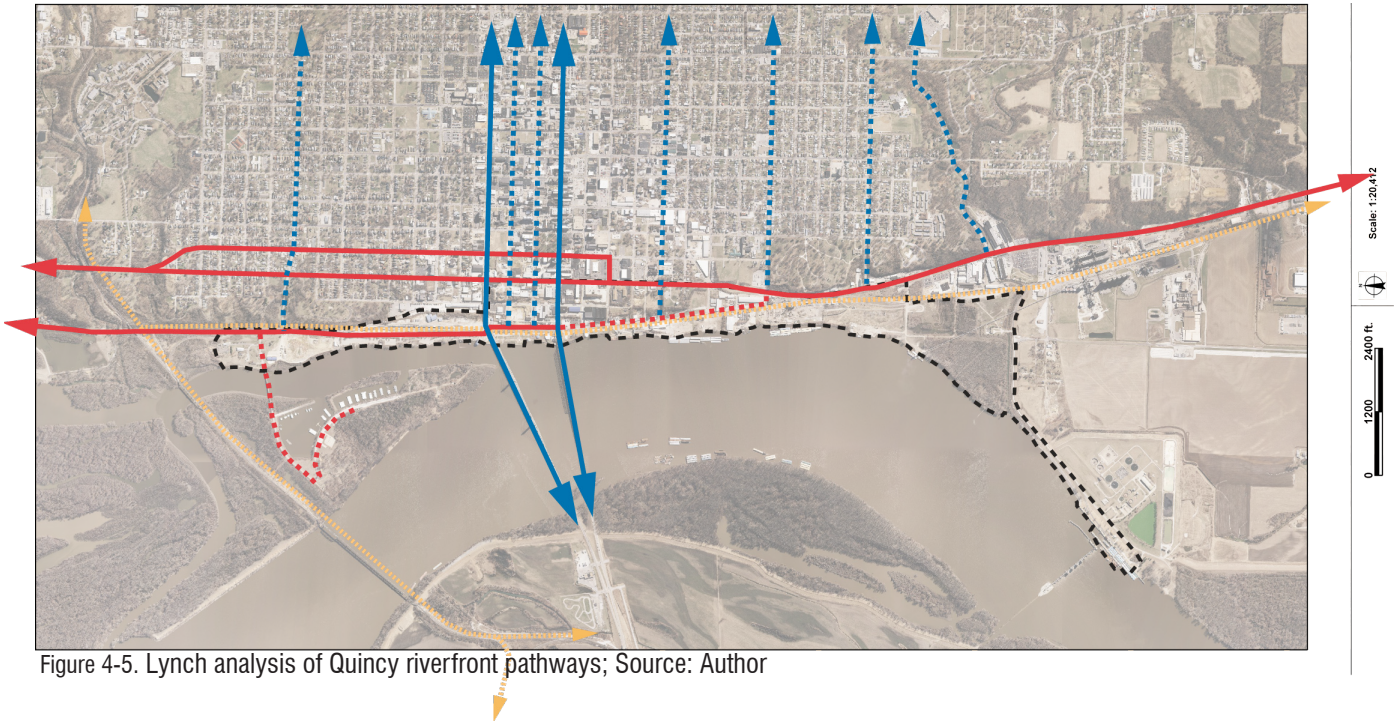


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Figure 4-4. Lynch analysis of Quincy riverfront edges; Source: Author

Pathways: Figure 4-5 illustrates important pathways connecting to the site and throughout the site. Primary vehicular pathways traveling east to west are indicated in solid blue with secondary paths represented by a dashed line. Primary north to south routes are indicated by a solid red line with the secondary as a dashed red line. The railroad corridors are illustrated by a dashed orange line. The majority of east to west routes end at Front Street which runs north to south through the majority of the site and is paralleled by the railroad. Along a stretch of active light industry the use, appearance, and width of Front Street diminishes, indicated by the transition to the dashed line. The primary connection of the bridges spanning the river travel overhead of site and have no direct connection to the riverfront. This leaves only secondary pathways from the east connecting to the riverfront.

Districts: Several districts were identified that could influence the design of the riverfront. (fig. 4-6) A majority of the site resides in a floodplain district delineated by the 100 and 500 year flood boundaries. Districts vary in use from active heavy industry to a town square district. Potential nearby users of the site are diverse including those living in the larger residential districts or employees on a break from work in the downtown or commercial districts. Those visiting Quincy staying in the blue civic/hospitality district would be attracted to the riverfront in search of tourist activities.



Ecological Analysis

Development Type: The gradients used in Figure 4-7 to the right indicate development type. An urban development type radiates from downtown Quincy into the residential neighborhoods where it begins to transition to a rural development type represented by the green gradient. South of the site purple indicates a heavy industrial development type which was included due to the large amount of area it comprises. The transition to heavy industry is more abrupt than the gradual transition of urban to rural.

Air Quality:

Air quality is an important ecological, human health and comfort factor. (fig. 4-8) The orange ovals indicate potential fumes from industrial processing of raw materials. With the arrows indicating prevailing winds in winter and summer. Noise is also an important environmental factor. The overhead bridges create a nearly sustained reverberation as cars traverse the Mississippi River in and out of Quincy. The noise from the bridges is further compounded by noise from the active rail line which runs north/south through most of the site. A high capacity overhead electric line parallels the railroad and creates a high pitched electric whir audible to pedestrians.

Figure 4-9 below right, illustrates an important air quality issue regarding the urban heat island effect. A black and white aerial photograph from 2006 was manipulated to show dark impervious surfaces in red and impervious lighter surfaces and vegetation in green. Due to age of the photo present conditions are not accurately measured. For instance at the time the aerial was taken much of Quincy's riverfront had several operable factories where there are now vacant parcels. However, the urban heat island effect is an important component of air quality and comfort.



Figure 4-7. Ecological analysis of Quincy riverfront development type; Source: Author

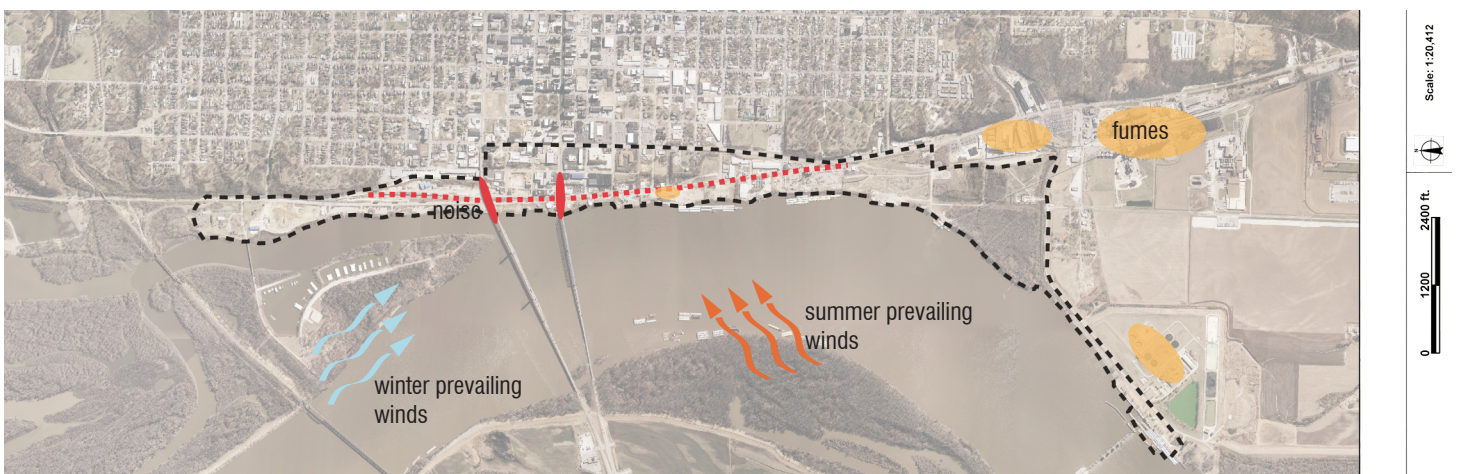


Figure 4-8. Ecological analysis of Quincy riverfront air quality; Source: Author

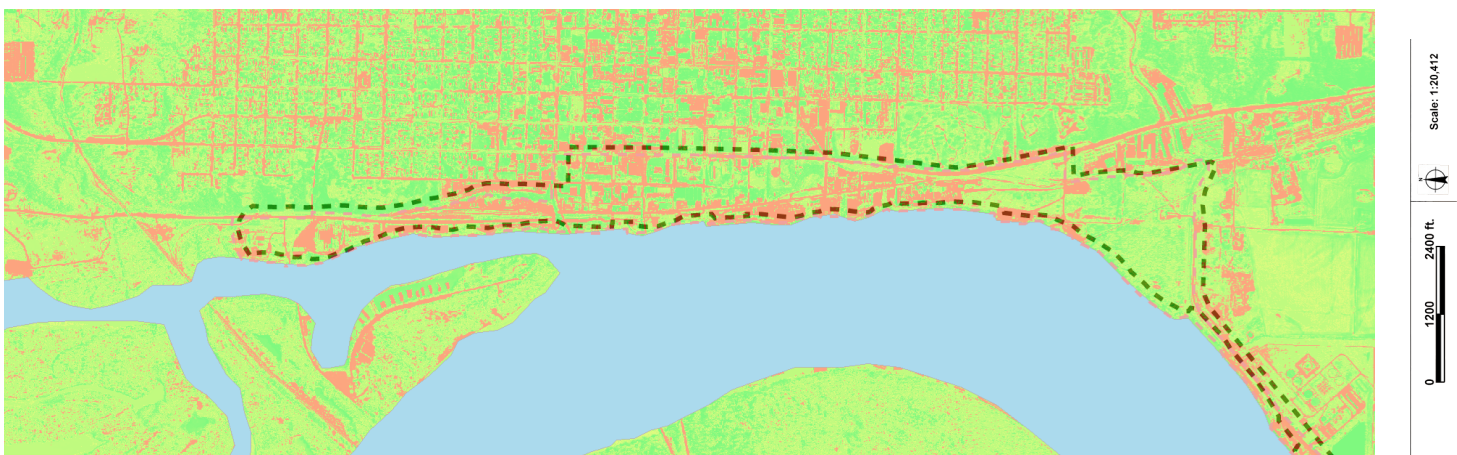


Figure 4-9. Ecological analysis of Quincy riverfront heat island effect; Source: Author

Tree Canopy Type: Tree cover was analyzed to determine the different types of tree cover. (fig. 4-10) Riparian wooded areas are located within the southern portions of the site and at the northern terminus. Some specimens in the riparian area are quite large and appear to be ancient, suggesting these stands are near climax in succession. Street and residential trees are scattered throughout the downtown and residential neighborhoods and appear to be chosen mainly for aesthetic values, size, and form. Urban wooded areas occur on steep slopes in the downtown area or vacant/under-maintained parcels and are composed mostly of smaller weedy trees and shrubs. Wooded bluff slopes can be found on the steeply sloping portions of the bluff hillsides and are composed of older stands of trees.

Manufactured Sites: Figure 4-11 utilized existing land use, built forms and land cover type to identify vacant post-industrial sites or manufactured sites. Manufactured sites can be characterized as degraded post-industrial land that currently acts as a void in the landscape and which may be contaminated. Small blocks of gray are present near the core of the site with the larger manufactured sites located near the northern and southern portions.

Hydrology: Figure 4-12 bottom right, analyzes important factors that impact the sites hydrology. Major riparian areas were identified on the Illinois side of the river both associated with a stream. The stream to the north, Cedar Creek, meanders into Quincy Bay, while the stream to the south, Curtis Creek, has been straightened likely to accommodate the large volumes of runoff associated with the upstream urban and industrial areas. As the Mississippi River elbows eastward toward Quincy the rivers primary floodplain is to the west into Missouri which has been cut off by a levee system. This has led to the river trying to reestablish its floodplain indicated as the riparian area along the Missouri riverbank. General watersheds were delineated utilizing topographic information. The levee system to the south prevents much of the rainfall from entering the river, instead it sheet flows to the south. It appears downtown Quincy was built upon a ridge in the floodplain with most water draining either southwest or northwest. The gray shapes identify large areas of impervious surfaces. The downtown contains significant amounts of impervious hardscape but it is rivaled by the area of active heavy industry south of the site. According to Forsyth and Musacchio “commercial and industrial areas are the largest sources of contaminates because of [their] connected impervious areas and stormwater runoff” (Forsyth & Musacchio, 2005). The stormwater runoff volumes and contaminate loads associated with the upstream active industrial are important to consider when dealing with the southern portion of the site as the possibility exists that southern portions of the site will potentially receive the runoff from the industrial property.



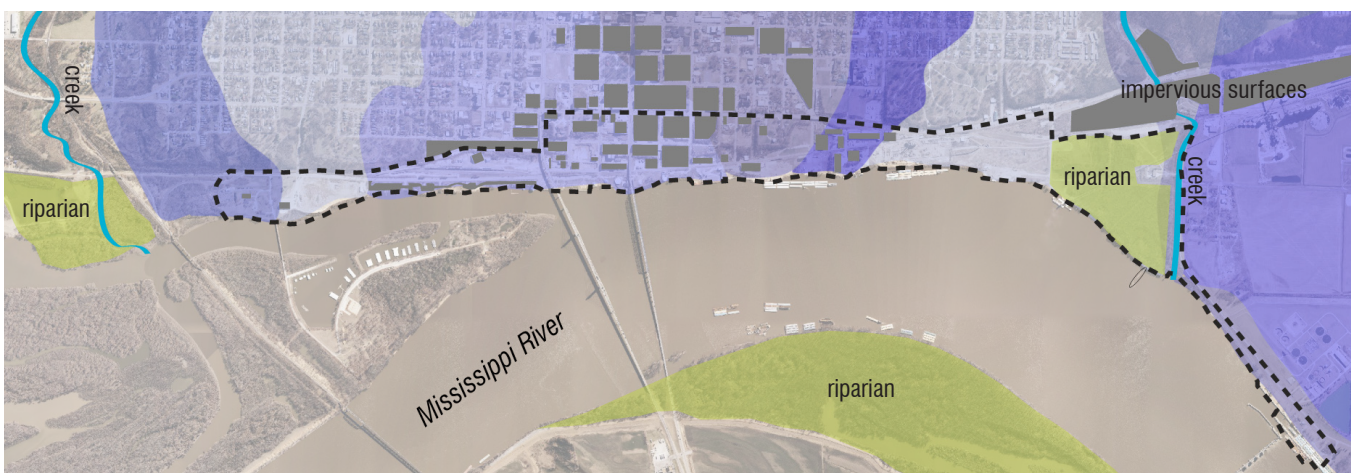
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Figure 4-10. Ecological analysis of Quincy riverfront tree canopy type; Source: Author



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Figure 4-11. Ecological analysis of Quincy riverfront manufactured sites; Source: Author



Scale: 1:20,412
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Figure 4-12. Ecological analysis of Quincy riverfront hydrology; Source: Author

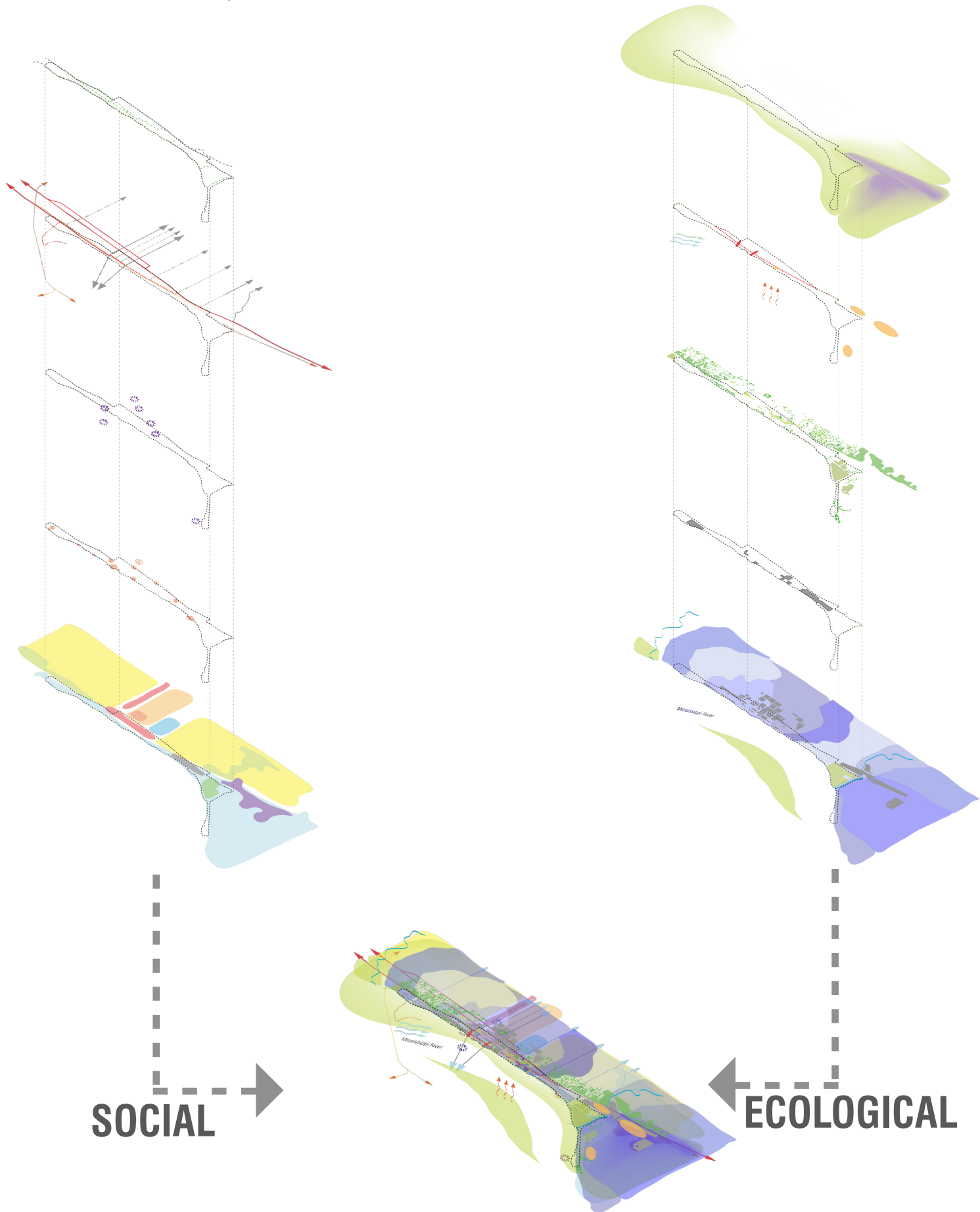


Figure 4-13. Grouping of completed analysis maps; Source: Author

Landscape Type Definition

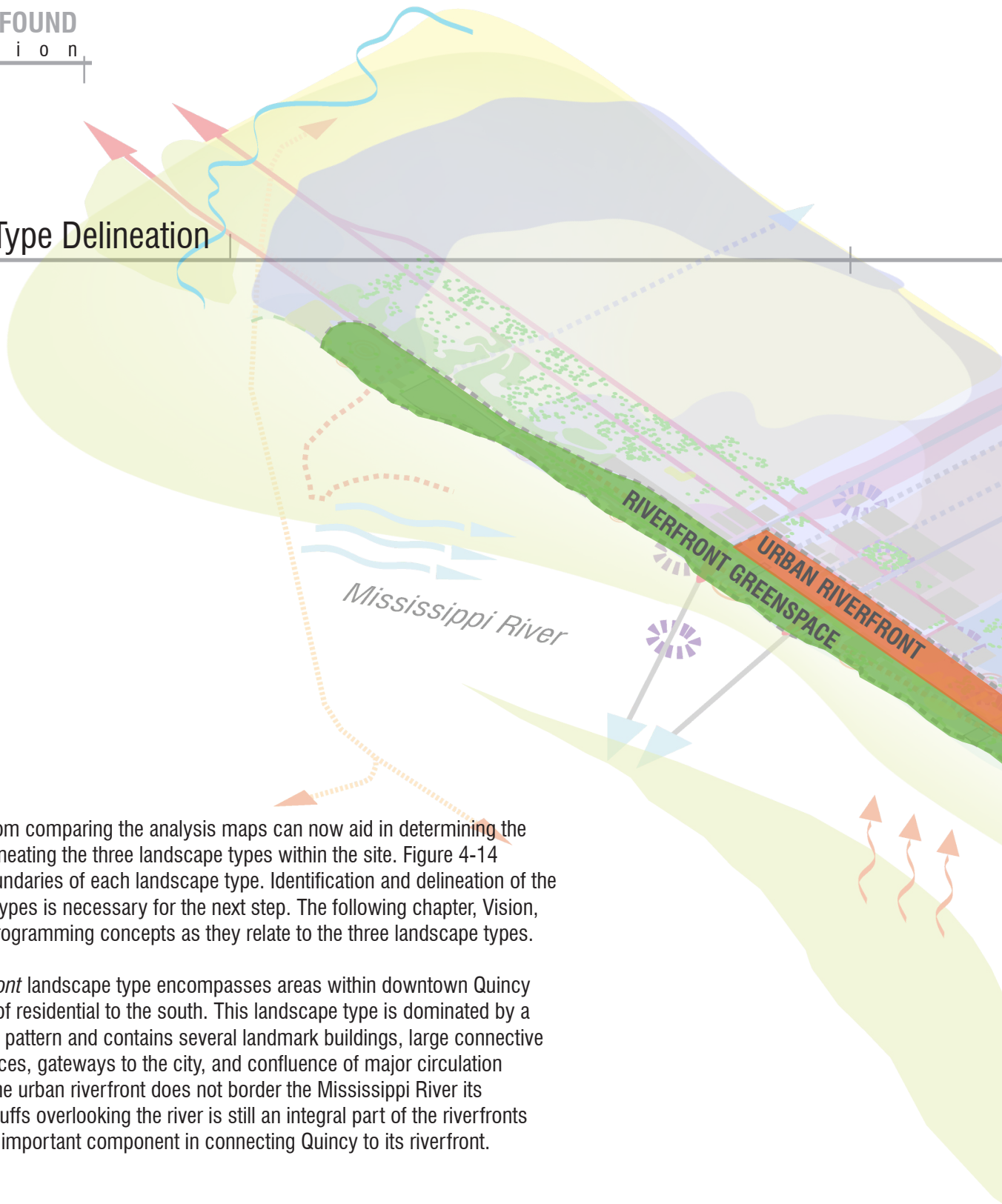
An adaptation of the landscape types discovered in the Davenport precedent study can now be applied to the Quincy riverfront. The modified landscape types are riverfront greenspace, urban riverfront, and restorative landscape. Figure 4-13 on page 84 illustrates the grouping of completed analysis maps in order to visualize the multiple layers involved in decision making as they pertain to physically defining the three landscape types.

Table 4-2 compares similarities and differences of the analysis data with the landscape types, thereby defining a set of standard criteria for each landscape type. It can be noted from table 4-2 that the restorative and urban types stand in stark contrast from each other, with one catering to the sites ecological needs and the other to its social needs, respectively. The riverfront greenspace landscape type shares many similarities with both the urban riverfront and restorative types and acts as a common ground between the two.

		Landscape Types		
		Riverfront Greenspace	Urban Riverfront	Restorative
Social Analysis Criteria	NODES			
	circulation confluence	●	●	
	river interaction	●	●	
	gateways	●	●	
	LANDMARKS			
	buildings	●	●	●
	natural features	●		
	PATHS			
	gridded	●	●	
	organic	●		●
	EDGES			
	manmade	●	●	
	natural	●		●
	DISTRICTS			
Ecological Analysis Criteria	downtown		●	
	town square		●	
	civic/hospitality		●	
	commercial corridor		●	
	riverfront commercial	●		
	manufactured site	●		●
	floodplain	●		●
	residential		●	●
	greenspace network	●	●	●
	floodplain forest			●
	active industrial			●
	DEVELOPMENT TYPE			
	urban	●	●	
	rural	●		●
	active industrial			●
	TREE CANOPY TYPE			
	floodplain	●		●
	urban wooded area	●	●	
	wooded bluff slopes		●	
	residential/street trees	●	●	
	DEGRADED SITE			
	vacant industrial site	●		●
	AIR QUALITY			
	fumes	●	●	●
	noise	●		
	HYDROLOGY			
	riparian area	●		●
	connective impervious surfaces		●	●
	streams			●

Table 4-2. Comparison of analysis maps according to landscape types; Source: Author

Landscape Type Delineation



Criteria gained from comparing the analysis maps can now aid in determining the suitability for delineating the three landscape types within the site. Figure 4-14 illustrates the boundaries of each landscape type. Identification and delineation of the three landscape types is necessary for the next step. The following chapter, Vision, introduces site programming concepts as they relate to the three landscape types.

The *urban riverfront* landscape type encompasses areas within downtown Quincy and a scattering of residential to the south. This landscape type is dominated by a grid development pattern and contains several landmark buildings, large connective impervious surfaces, gateways to the city, and confluence of major circulation routes. Though the urban riverfront does not border the Mississippi River its position on the bluffs overlooking the river is still an integral part of the riverfronts character and an important component in connecting Quincy to its riverfront.

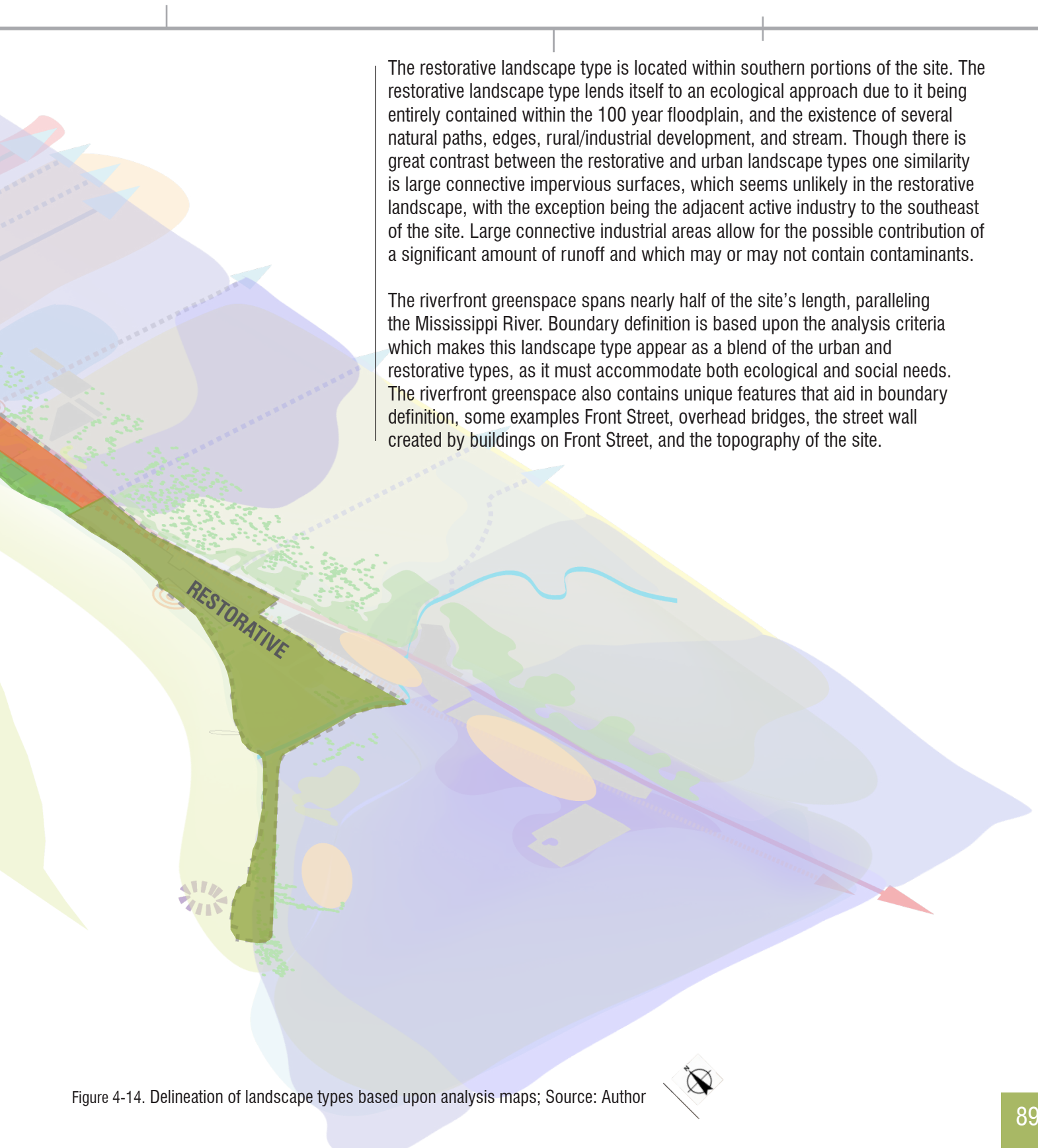


Figure 4-14. Delineation of landscape types based upon analysis maps; Source: Author

Interpretive Analysis Conclusions

Project Goals and Objectives

The culmination of preliminary research provides a basis for defining six project goals. Each project goal has a set of objectives that are integral in accomplishing the goal. Following are the project goals and their objectives.

1 Focus on making the Quincy riverfront an attraction for residents, workers, and visitors.

- expand and connect public use of the riverfront
- design a riverwalk that will connect multiple destinations along the riverfront
- integrate multi-seasonal uses

2 Strive for a site design that speaks to the unique identity of Quincy while embracing the regional theme of the Upper Mississippi.

- promote the history of Quincy and the Mississippi River
- look to natural processes and characteristics to guide the design of the site

3 Integrate mixed-use components that will promote social and economic growth.

- businesses geared toward permanent residents and visitors alike
- extend entertainment venues toward the riverfront

4 Connect downtown Quincy to its riverfront.
utilize green connections and potential infill projects

5 Educate the public on the natural history and processes of the river.
experience of a managed riverine landscape

6 Promote the cleansing of contaminated brownfields.
provide cost-saving and ecologically based alternatives to conventional contaminate removal

Vision

015

Program Introduction

The Vision for the Quincy Riverfront coalesces all of the preliminary research, inventory, and interpretive analysis to generate proposed use areas and potential site elements. (fig. 5-1) Detailed programming of the nearly four mile long site is beyond the scope and time constraints for my specific project goals. Therefore, the following section outlines proposed general uses, which were identified through preliminary studies during the fall of 2009 and from a meeting with Quincy's City Planner in January 2010. Each use area is defined by a framework outlining design approaches and programmatic possibilities. General use areas are defined as corridors, areas, and districts or by a delegated use at a specific location. Following are the general use areas proposed for the Quincy riverfront:

- Quincy Riverwalk Corridor
- Active Recreation Corridor
- Entertainment District
- Riverfront Park Corridor
- Manufactured Site/Riparian Flood Area
- Mixed-Use District
- Multi-Modal Transit Depot

The next chapter "Application" utilizes each use area framework as criteria for creating a design for the Quincy Riverfront.

Program Process Diagram

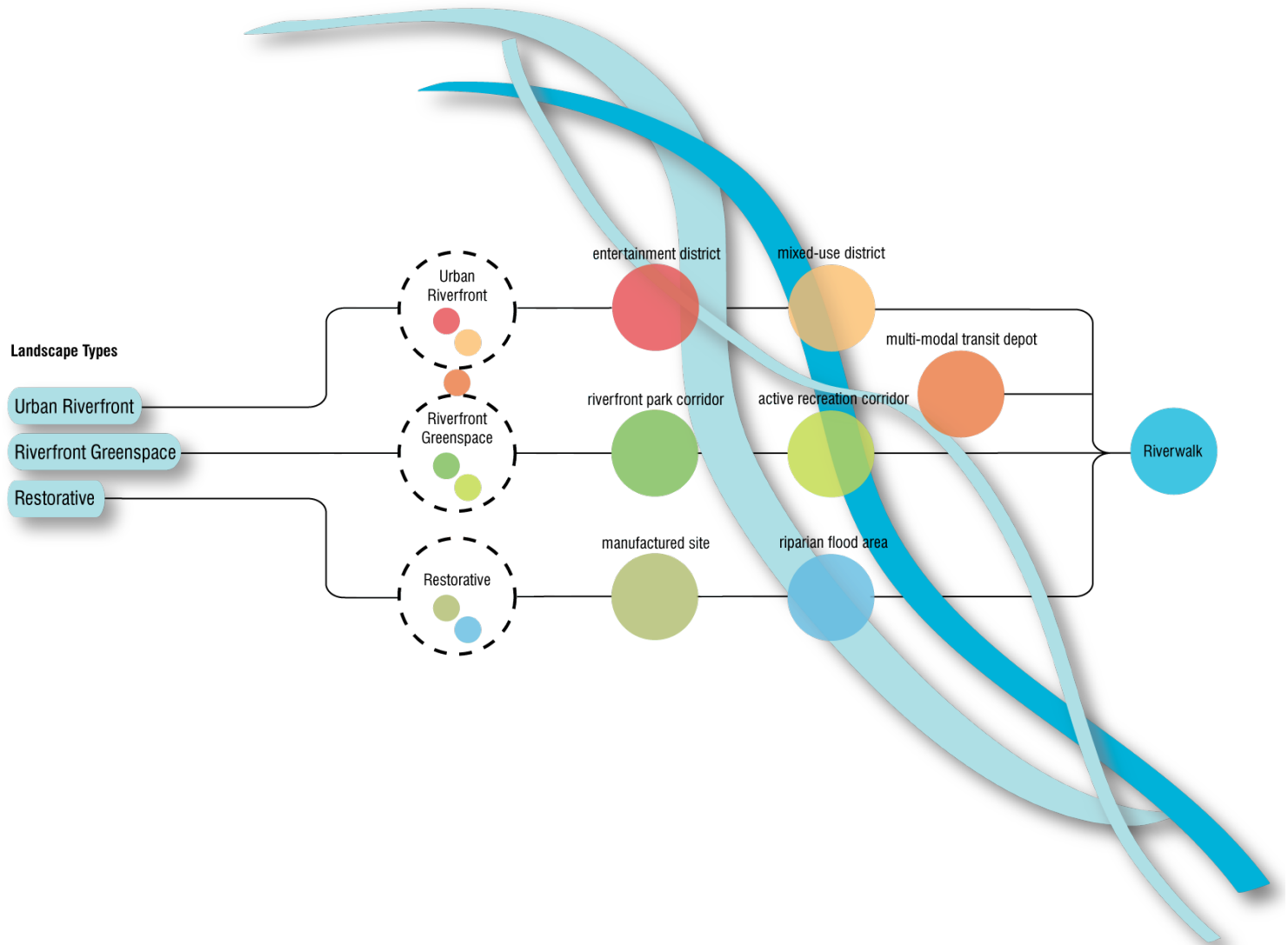


Figure 5-1. Program process diagram; Source: Author

Review of Guidelines, Goals, + Objectives

Personal Goals

1 Develop a thorough and effective design process.

2 Engage the future site users.

3 Design an environment that promotes a healthy lifestyle, discourages sprawl, and is sensitive to the surrounding ecology.

4 Test and improve my time management and organizational skills.

5 Develop my skill in computer graphics.

6 Learn and understand the Mississippi River.

7 Present a final product displaying advanced design skills and grounded in practicality.

8 Connect the citizens of Quincy to their river.

Design Guidelines

- Linear movement along the riverfront is key. The proposed riverwalk should not be a destination itself, but instead be the common link to destinations.

- The Mississippi River is a powerful force of nature that is at constant odds with human development patterns. Designs should work with the river through an understanding of its behavior, ecology, and issues that threaten its stability.

- Embrace the riverfront's cultural and natural history which will offer forms and design solutions familiar to the site, city, and region.

- Recognize Quincy's unique qualities and convey the city's history and message through the site design.

- Identify and protect vulnerable natural areas and promote preservation and education of these locations.

- Look to provide a landmark of the riverfront that will be remembered by visitors.

- Create and strengthen the pedestrian environment.

- Do not lose focus of the star player, the Mississippi River.

Project Goals + Objectives

1 Focus on making the Quincy riverfront an attraction for residents, workers, and visitors.

- master plan of a riverwalk that will connect multiple destinations along the riverfront

2 Strive for a site design that speaks to the unique identity of Quincy while embracing the regional theme of the Upper Mississippi.

- promote the history of Quincy
- look to natural processes to shape design forms

3 Integrate mixed-use components that will promote economic growth.

- businesses geared towards permanent residents and visitors alike
- extend entertainment venues toward the riverfront

4 Connect downtown Quincy to its riverfront.

- utilize greenways and potential infill projects
- connect to existing trails, and primary circulation systems

5 Educate the public on the natural history and processes of the river.

- experience of a managed riverine landscape

6 Promote the cleansing of contaminated brownfields.

- provide cost-saving and ecologically based alternatives to conventional contaminate removal

Conceptual Program Map

Social

+

Ecological

=

Utilizing my analysis framework and adapting the ideas of designing for both social and ecological concerns from Forsyth and Musacchio, I developed a program that seeks to address and resolve both social and ecological issues. Figure 5-2 to the right illustrates and locates some conceptual program elements that were influenced from the precedent studies, literature, and analysis of the region, city, and site. Additionally, the proposed program for the Quincy Riverfront is a response to the project goals and objectives, the design guidelines, and my own personal goals.

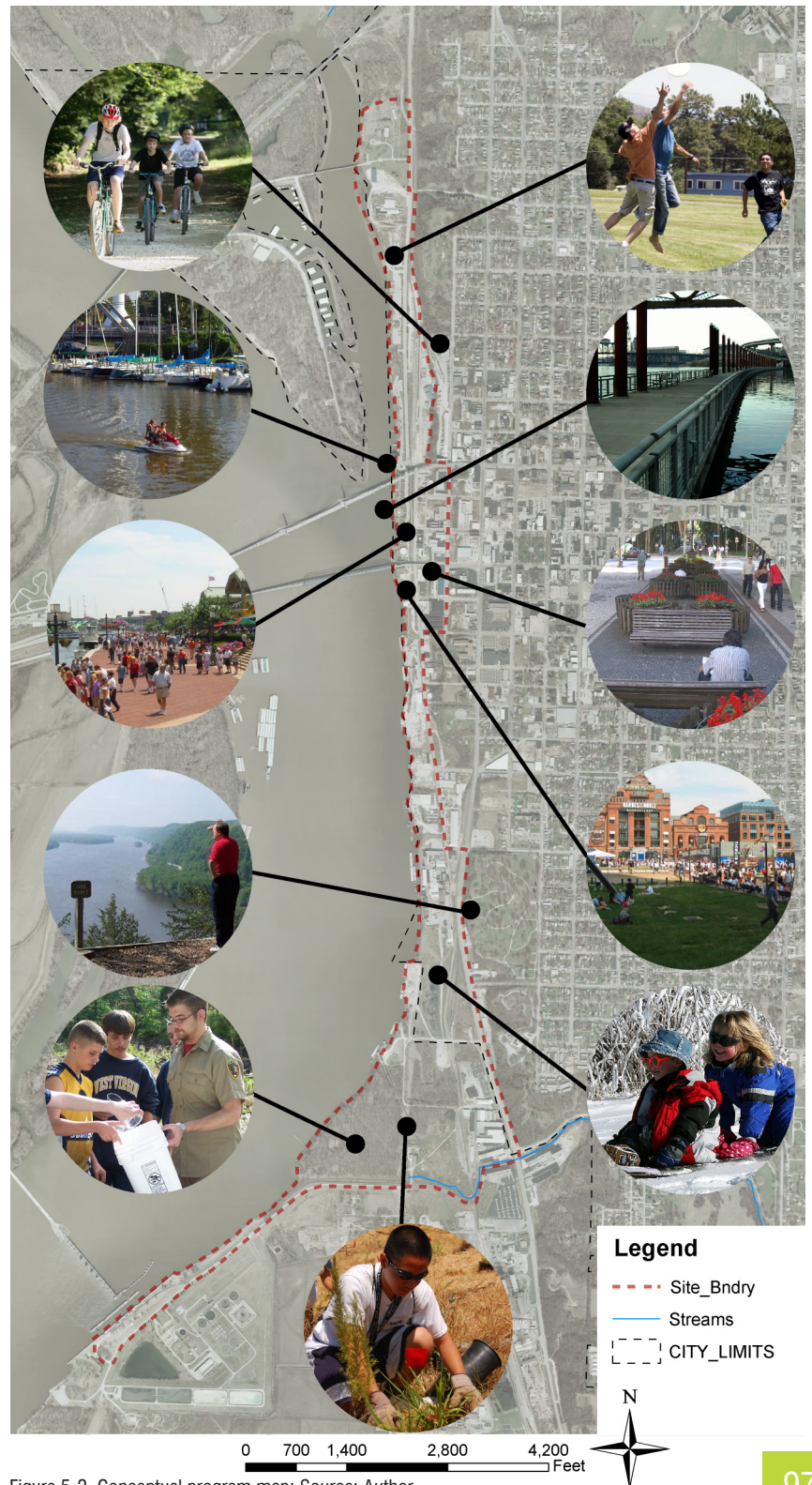


Figure 5-2. Conceptual program map; Source: Author

Proximity to Town Locus

Use areas are the first step in designing the riverfront as they allow for visualization of particular sections of the site. Delineating portions of the site into use areas are based upon the determined project goals and design guidelines. Another important factor identifying use areas is proximity to Quincy's locus of activity. Through the analysis, Washington Park was noted as an important node, landmark, and district as it serves as Quincy's town square. Figure 5-3, right, indicates proximity from Washington Park to various locations of the landscape types. The noted distances from the town locus of activity contributed to delineating proposed use areas for Quincy's riverfront.



Riverfront Greenspace

Design approach

- park-like setting, formal to the north progressing to informal traveling south
- to the northern terminus of the defined site design is more natural and informal
- traveling south a more formal urban structure begins to build up
- emphasize the formal lines of the adjacent urban grid and structural riverbank
- as the parkway progresses south, lines become more informal as the urban grid dissipates and we see more vegetation along the riverbank
- this will create a smooth transition to the more natural manufactured site

active recreation corridor program elements

sports fields (type + quantity)
 bike racks
 shaded areas for relaxation
 dog stations
 river recreation

- boat ramps
- trailer parking
- fishing areas
- fish cleaning stations
- water skiing
- kayaking

 river water level marker
 river events
 amphitheater to watch events
 skate park
 pedestrian amenities
 connection throughout
 connecting to quincy linear trail
 seating
 drinking fountains
 LED lighting
 multi-seasonal

- cross country skiing
- ice fishing
- ice skating

riverfront park corridor program elements

fishing
 fish cleaning station
 day boating docks
 pier for excursion vessels
 information kiosk
 interactive maps
 refuge memorial park
 LED lighting
 bike racks
 activities

- concerts
- performing arts
- festivals
- fundraising events
- space for vendors
- yoga, meditation, martial arts
- segway tours

 interactive water feature
 monument of historic river levels
 Wi-Fi access
 wayfinding signage
 public access restrooms
 dog stations
 covered bus stops
 venues for local artists
 pedestrian amenities

- seating
- promenade
- increase existing walkway capacity
- connect existing parks



Urban Riverfront

Design approach

- landscape urbanism design utilizing both active and inactive/vacant parcels
- overall mixed-use urban structure with injections of greenspace within vacant parcels either permanently or awaiting development
- greenspace mimics historic prairie and serves ecological function
- trails within greenspace connects urban landscape from within
- building/street layout to follow traditional downtowns emphasizing on pedestrian comfort and utilizing common/native building materials that ties in to the adjacent downtown

multi-modal transit depot program elements

civic plaza

administrative building

bus

- bus stop
- bus/rv parking

rail

- Amtrak passenger train platform
- character lighting, railing, and other site features
- overhead structure
- indoor waiting area
- drop-off
- overnight parking

bike

- bike racks
- bike rental

entertainment district program elements

LED lighting

on-street parking

pedestrian crossings

public restrooms

restricted vehicular access during special events

local art gallery

utility space (loading docks, dumpsters, etc.)

mixed-use buildings

- commercial- retail, restaurants, bank, art gallery specialty stores, night club, brewery, theater
- residential- condos, loft apartments
- office- leased suites/floors to businesses, firms, and organizations

mixed-use program elements

greenspace at main entry to the city from Missouri

pedestrian amenities

- LED street lighting
- seating
- parking on-street

playground

street trees

bike racks

covered bus stops

Wi-Fi access

wayfinding signage (streets, trails, riverfront, etc)

historic/civic landmark signage

mixed-use components

- office
- retail
- hotel
- residential – single family townhouses and apartments



Restorative

Design approach

- informal naturalistic design with a bold landmark landform shaped from the historic topography of the nearby bluffs while surrounding landforms are more subdued undulation of the floodplain
- smooth, more natural transition from land to river
- vegetated riverbank
- utilize native plantings
- explorative/educational experience
- comfort and safety in the more remote portions
- bring back some of the ecological function of the floodplain

manufactured site/riparian flood zone program elements

function

- seasonal flooding process
- pollution remediation
- stormwater detention
- wildlife habitat

education

- interpretive landscape
- informative signage
- volunteer opportunities, school field trips, educational tours

maintain existing industrial infrastructure as landscape features

parking

entry feature- composed of industrial materials

- marks the transition into manufactured site

maintain existing woodland

grassland on either side of prescribed riverwalk pathway

pond surrounded by seasonal wetland

river access

- boat launch

lighting on main pathway

accent lighting on industrial remnants



Outside the Boundaries

Bayview and Memorial Bridge LED lighting

Bob Bangert park - convert to seasonal wetland (fig. 5-4)

- fish spawning
- flood relief
- educational oppotunities

Quincy Cedar Creek Trail (fig. 5-5)

Connect at Bob Bangert park north of the site moving south transitioning into the riverwalk



Figure 5-4. Aerial photograph of Bob Bangert Park, the park experiences frequent flooding and at the time of the photo most of the surface area is inundated; Source: Author



Figure 5-5. By extending the Cedar Creek Trail west it can potential connect to the proposed riverwalk; Source: Author

Application

015

Riverfront Found Introduction

Quincy's riverfront has seen over 150 years of use by the city. Throughout Quincy's history, layer upon layer of industry and commerce have built up the riverfront that served industrial and commercial needs. The riverbanks have been continuously armored to prevent erosion and elevated to protect the riverfront from floodwaters. For much of the twentieth century residents of Quincy have been cut off from the Mississippi, with the river regarded as a nuisance and the riverfront evolving into an eyesore. The Riverfront Found Master Plan has peeled back multiple layers of Quincy's industrial riverfront history to reveal the Mississippi River to the citizens of Quincy. Basic concepts of Riverfront Found emerged from preliminary research, inventory, analysis, and a vision, to revitalize an important community asset and uncover a powerful natural feature.

The following chapter presents Riverfront Found a master plan geared toward the revitalization of Quincy, Illinois' riverfront. An illustrative master plan of the site (fig. 6-1) communicates the proposed riverfront design and examines proposed rezoning and circulation. In order to evaluate the master plan each of the three landscape types will be explored in order to identify how the design addressed specific project goals within these areas. Though some project goals can be applied to multiple landscape types, each landscape type specifically addresses two of the six goals.



Riverfront Found Master Site Plan

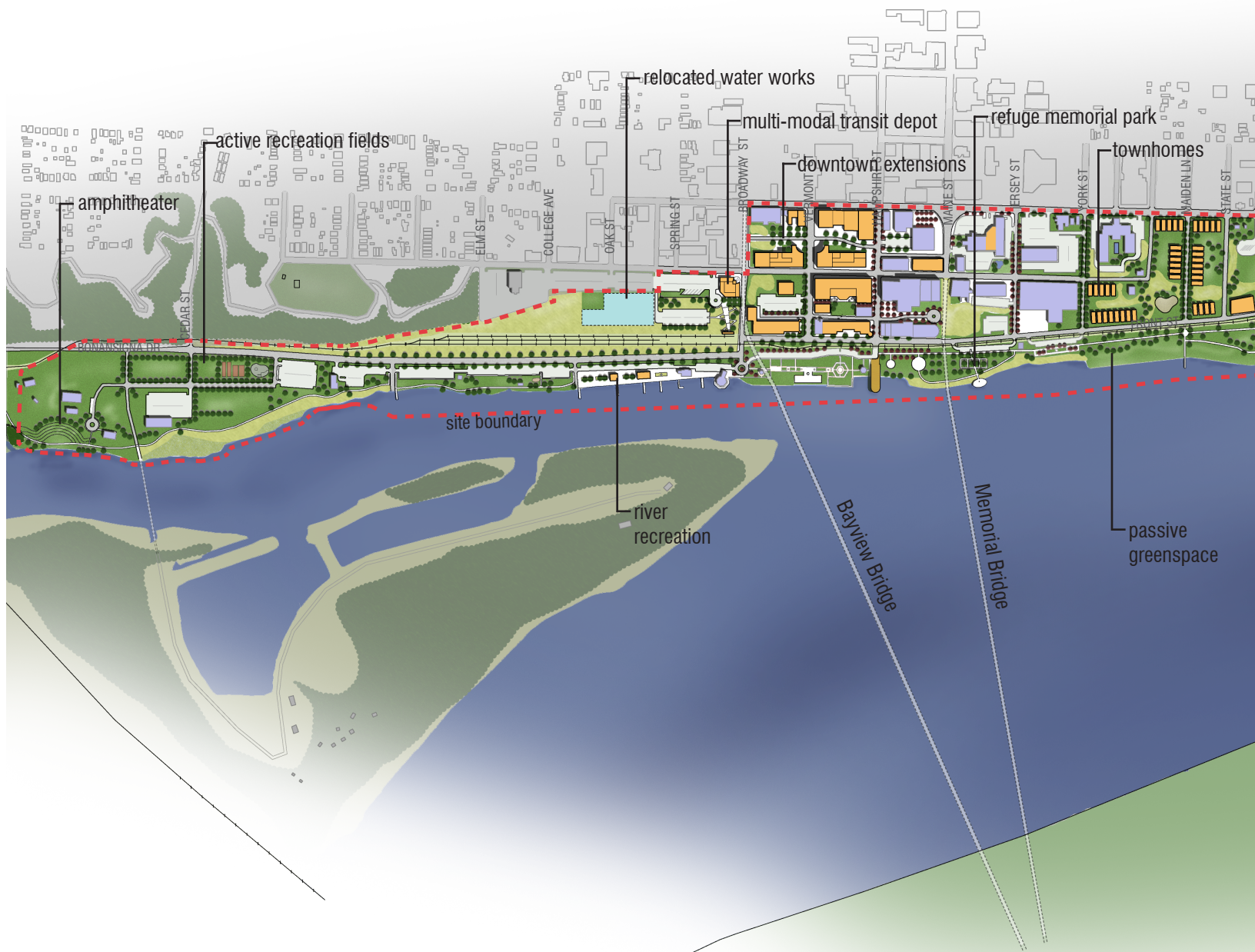


Figure 6-1. Riverfront Found Master Plan; Source Author

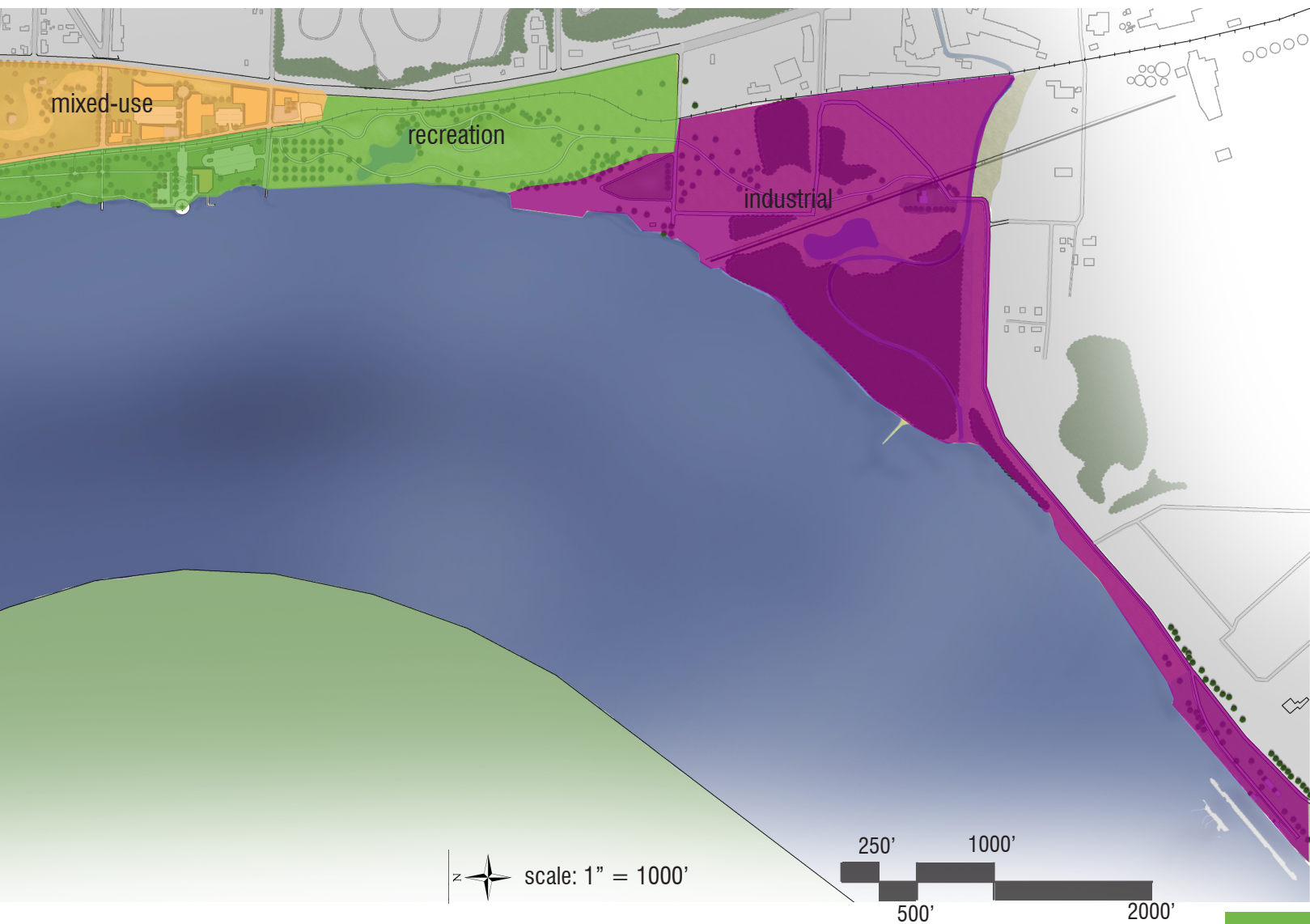


Proposed Zoning

Existing zoning of the site determined during the inventory indicated a majority of the site is zoned industrial and downtown with a small portion being zoned residential. Figure 6-2 is the proposed zoning for the site. A majority of industrial zoned areas within the site have been rezoned as recreational to limit development within the 100 year floodplain and accommodate proposed greenspace along the riverfront. The zoned industrial within the southern portion of site where the riparian area is located remains industrial due to ownership issues. Proposed development of this area relies upon the private contribution of land or contractual easement by the adjacent factory owners. Existing downtown zoning includes provisions for mixed-use development and remains relatively unchanged.



Figure 6-2. proposed zoning plan



Proposed Circulation

Proposed circulation is represented in Figure 6-3. Connections from downtown to the riverfront have been reinforced through proposed street and pedestrian amenities including street trees, pedestrian scaled lighting, stronger building street walls, and on-street parking. Existing pedestrian connections were lacking both parallel and perpendicular to the riverfront. Riverfront Found strives to accommodate pedestrian access by proposing pedestrian oriented spaces running north to south in the urban riverfront landscape type with the buildings making up the grade change and offering ADA access for handicapped users to traverse the significant grade changes of the river bluffs.



Figure 6-3. proposed circulation plan

A walkway paralleling the river is proposed to run the length of the site and will be the primary corridor for pedestrian movement. This walkway is referred to as a riverwalk. The riverwalk will be an integral part of the design connecting the various destinations along the riverfront beginning beyond the northern tip of the site connecting to the Cedar Creek Trail at Bob Bangert Park and ending in the southern terminus of the site at Lock and Dam 21. Quincy's riverwalk corridor stretches for nearly four miles encouraging a healthy environment for residents who can use the walkway for jogging, biking, or roller skating. Commercial opportunities are possible with the proposed bike rental or riverfront tours. The riverwalk will also detail Quincy's history and educate users of the history and natural functions of the Mississippi River.

Public transit is key to providing access to the riverfront. Establishing a downtown bus loop will provide greater accessibility to businesses and public spaces. Creating a multi-modal transit hub will bring the Amtrak station into the downtown. The existing station is north of town in an industrial area and offers visitors a poor introduction to Quincy. By proposing the train station be relocated to the downtown disembarking passengers will be greeted with views of the Mississippi, the riverfront, and historic downtown.



RIVERFRONT GREENSPACE



legacy



amenities

river recreation

point of view

festivals



=riverfront park recreation



=active recreation corridor





competitive sports

visitors

multi-seasonal

memory

Activity

healthy lifestyle

Figure 6-4. Photomontage of riverfront greenspace.

Source: Author

project goals 1 & 2:

focus on making the Quincy riverfront an attraction for residents, workers, and visitors

Three objectives were utilized to accomplish this goal. The first objective was to *expand and connect public use of the riverfront*. Current conditions of Quincy's riverfront are fragmented with small parks separated by vacant parcels and private property. The proposed riverfront greenspace reclaims a majority of the riverfront, creating stretches of usable passive and active spaces. *Incorporating a riverwalk to connect multiple destinations along the riverfront* is the second objective and builds upon the first. The proposed riverwalk parallels the river and is the primary north to south corridor for pedestrians. Basic components of the riverwalk such as paving and signage remains the same along its entirety to create a unifying feature for the riverfront, however,

other elements such as lighting fixtures and vegetation change from use area to use area in order to enhance the different character of the spaces. The proposed riverwalk dissuades residents from using vehicles, instead emphasizing the pedestrian experience. Integrating *multi-seasonal uses* is important to make Quincy's riverfront an attraction throughout the year. Stretches of riverfront greenspace can easily accommodate cross-country skiing during winter months or ice-fishing in Quincy Bay. Two ice skating rinks are proposed within the riverfront greenspace, with one located at the proposed skate park in the active recreation use area and the second nearer to the downtown at the proposed Water Works Plaza.

strive for a site design that speaks to the unique identity of Quincy while embracing the regional theme of the Upper Mississippi River

An important objective for this goal is *education of the riverfronts history*. Already, there are several existing informative signs detailing aspects of Quincy's history, however, many of these are scattered along the riverfront and have no physical connection to each other. The proposed riverwalk will aid in providing this connection allowing those exploring the riverfront to follow Quincy's

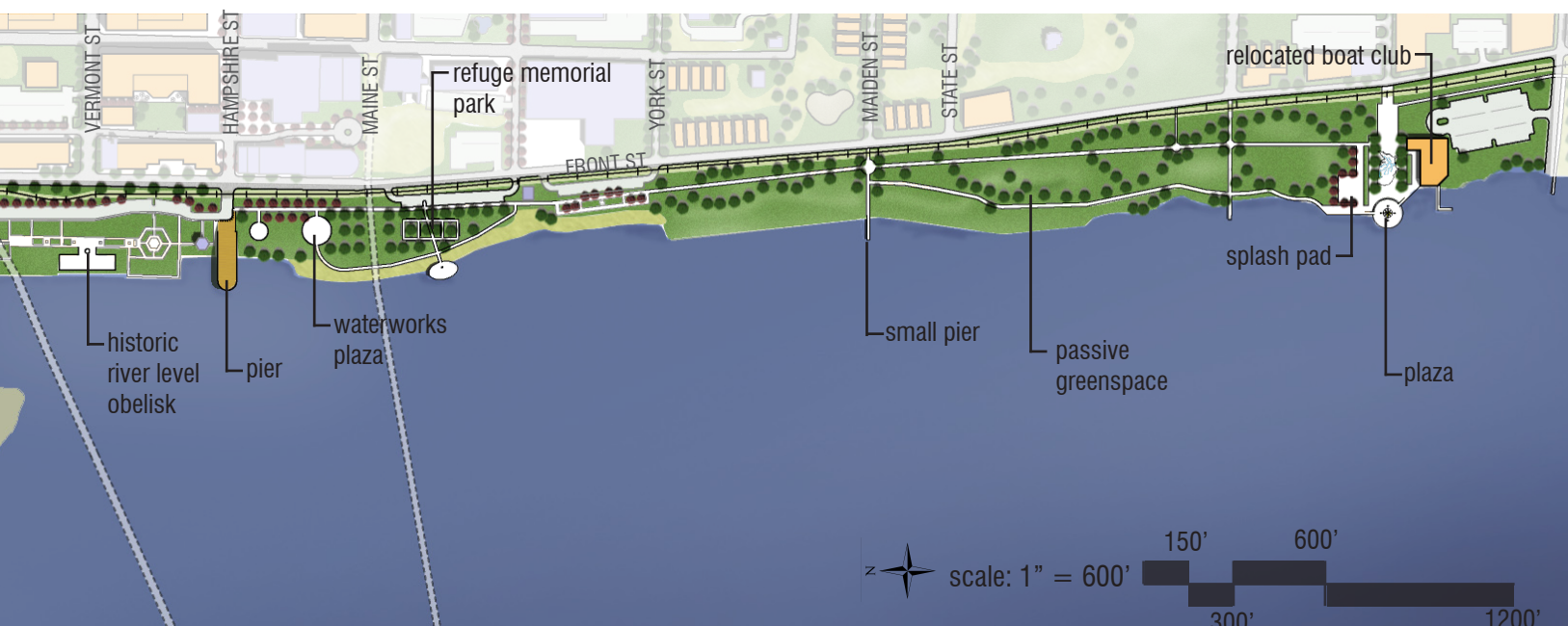
story along the way. Having an expansive public riverfront opens up opportunities for guided or self-guided educational tours which utilize different touring methods such as bike, Segway, or kayak rentals offering different perspectives of the riverfront. The second objective looks to natural processes and characteristics to guide the design of the site.



Figure 6-5. riverfront greenspace; Source: Author

The riverfront greenspace exists almost entirely within the 100 year floodplain and currently has a scattering of light industrial and privately owned buildings. Severe flooding is becoming more frequent on the Mississippi River with much of the riverfront greenspace facing inundation during flood events which leaves developed areas susceptible to flood damage. Riverfront Found proposes the removal of a majority of structures from the riverfront greenspace opening it up to passive and active use for pedestrians. The riverfront greenspace is conducive to flooding and should a major flood event occur, damage would be negligible. Within the riverfront greenspace, the southern portion of the active recreation corridor has been redesigned to enhance river recreation, which speaks to Quincy's culture as a river town. Currently, the Pier Restaurant and Quincy Boat Club occupy the proposed river recreation area, however, both structures are surrounded by parking and do not share a strong connection to their surroundings. Riverfront Found (fig. 6-5) retains both structures and expands the pedestrian realm mimicking the character of a boardwalk (fig. 6-8), and proposes two additional buildings geared toward river recreation. The first proposed building would be a small supply store outfitted with the necessary river recreation gear, such as bait and tackle, food, or camping supplies. The second proposed building will be geared toward the

tourist selling memorabilia such as t-shirts and trinkets. The second building will also serve as the location for boat rental or to sign up for classes ranging from boating safety and operation to kayaking instruction or basic river education and management. With the implementation of the river recreation area Quincy can reinforce its identity and heritage as a river town while providing exposure to the Mississippi River. Currently, a weak node exists near the southern terminus of the riverfront greenspace where Front Street ends at the intersection of Gardner Expressway and Jefferson Street. A proposed plaza (fig. 6-5) aids in reinforcing the node by providing a gathering space for pedestrians and those living in the nearby residential neighborhoods. The plaza incorporates an educational motif with an etching of North America in the pavement, which highlights the Upper Mississippi River, its tributaries and river towns. An elevated dais extends the plaza into the river, functioning as a key river overlook or a stage for performances. A compass indicating the cardinal directions is carved into the dais pavement complimenting the nearby map of the Upper Mississippi. A proposed building houses the relocated South and North Side Boat Clubs in a structure reflecting the character of a historic riverfront. A proposed boat ramp and parking lot offers a secondary river access point for day boaters and the boat club.



Riverbank Treatments

Treatment of the riverbank is integral to the users exposure and interaction with the Mississippi River. Existing conditions found in a typical section of the riverbank include rip rap or structural armoring where stretches have been ill-maintained becoming overgrown with vegetation and collected garbage. Adjacent to the existing riverbank, properties are generally gravel parking and storage areas. Proposed treatments of the riverbank pull back the layers of development to bring users closer to the river. Though the topography of the riverfront is being altered, critical elevations are maintained so as to not alter the FEMA and FIRM floodplain boundaries. The riverfront park corridor is to contain a mixture of natural (fig. 6-6) and structural riverbank treatments (fig. 6-7) with the primary approach being the latter. The southern stretch of the active recreation corridor combines the natural and the structural riverbank treatments with the proposed boardwalk (fig. 6-8). Traveling north of the boardwalk a natural riverbank is proposed to return to a natural character for the remaining stretch of the active recreation corridor (fig. 6-6).

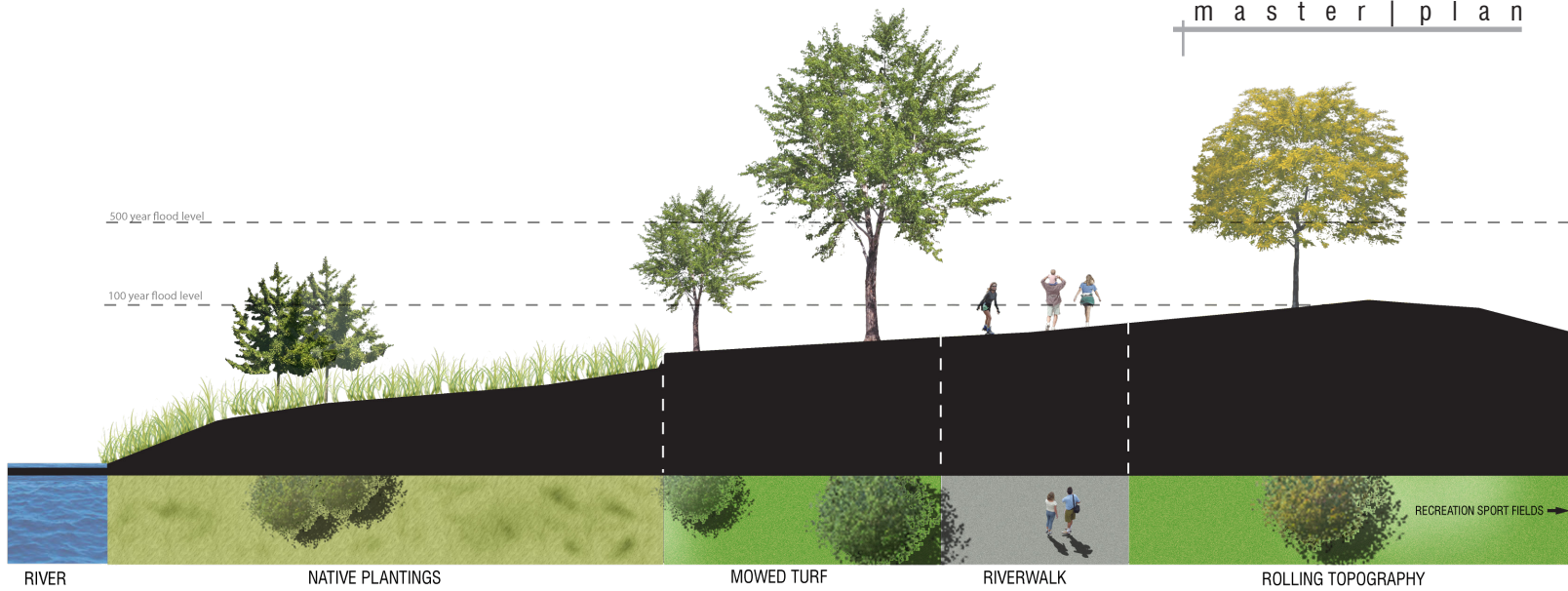


Figure 6-6. Natural riverbank section looking north, Not To Scale (NTS); Source: Author

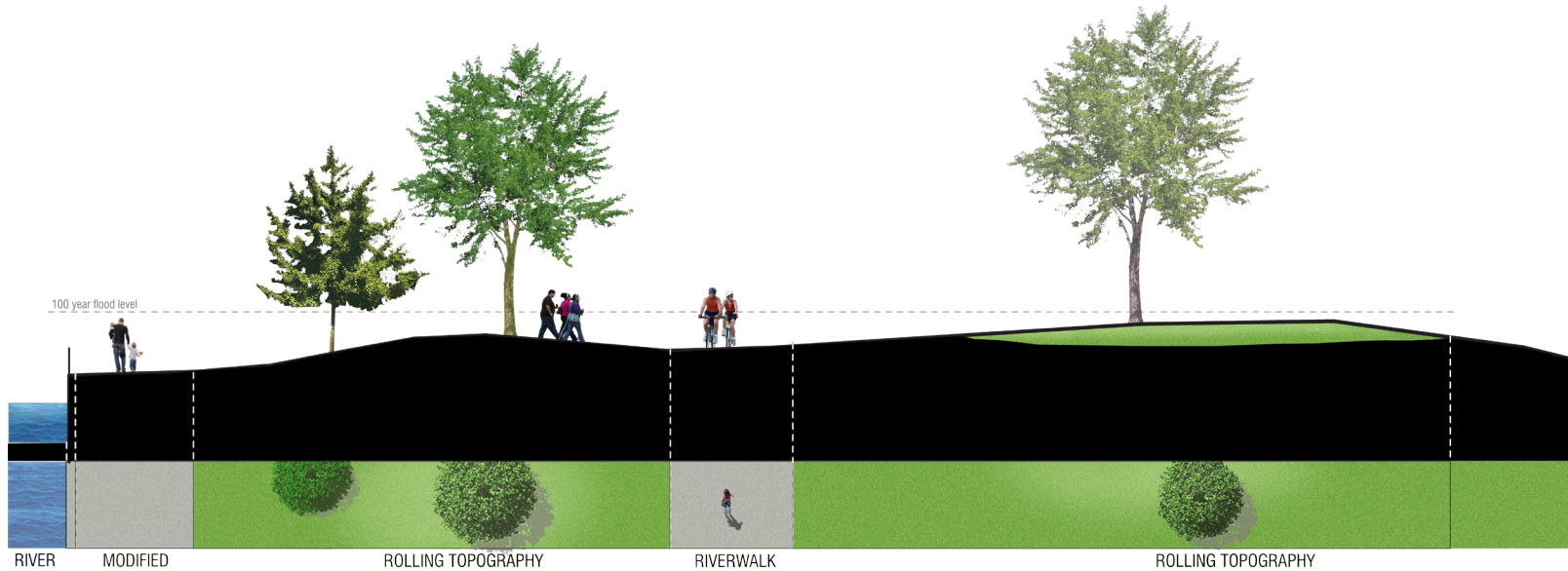


Figure 6-7. Structural riverbank treatment looking north, NTS; Source: Author

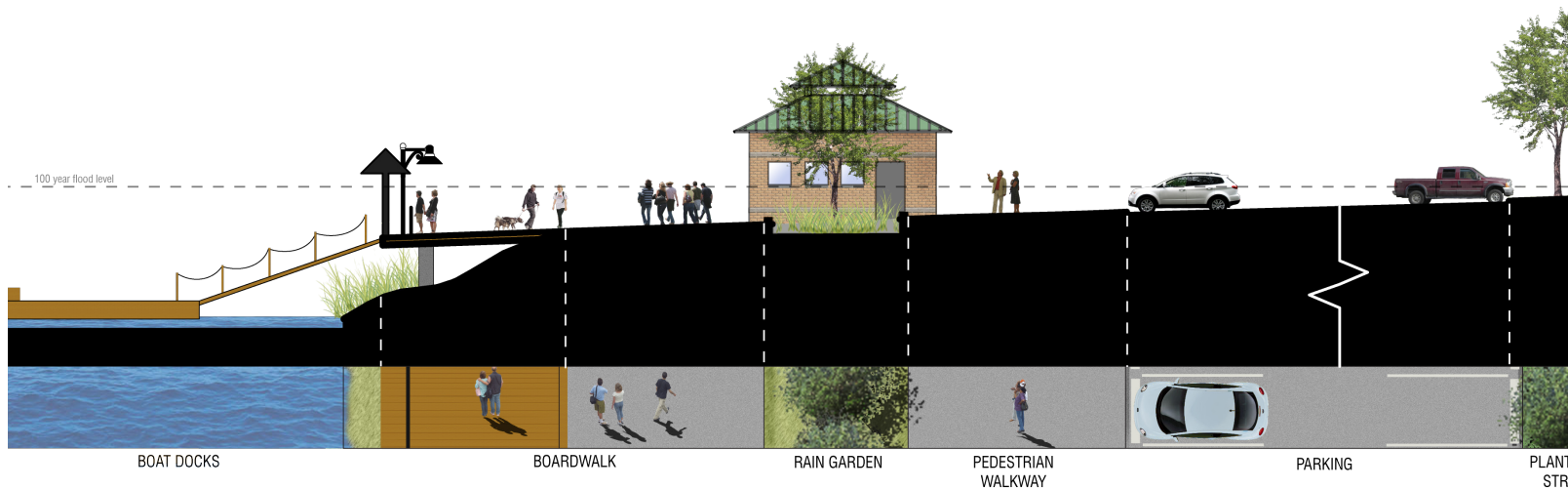
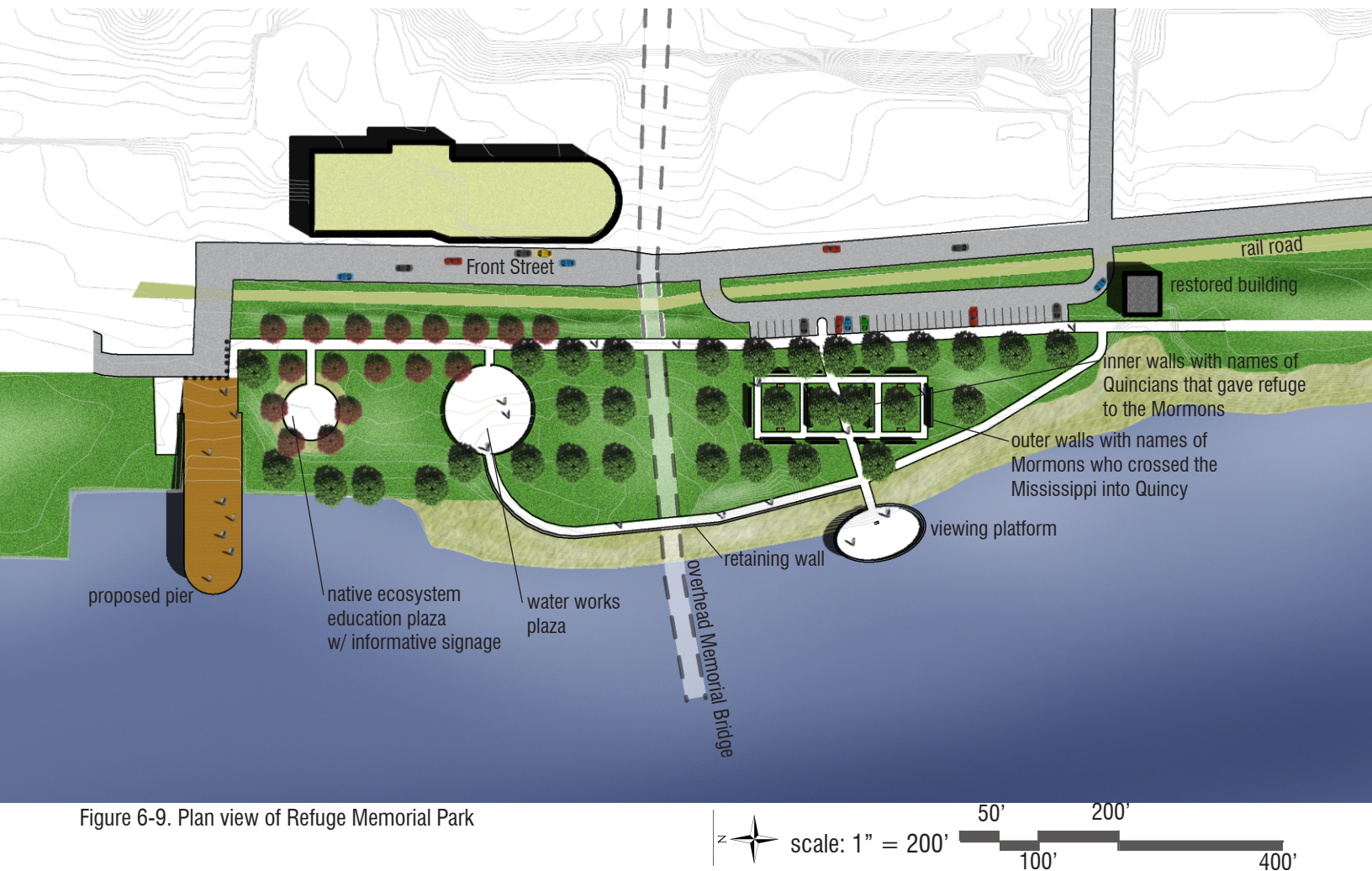


Figure 6-8. River recreation area bank treatment looking north, NTS; Source: Author

Refuge Memorial Park

Refuge Memorial Park is in memory of the Mormons who fled from persecution in Missouri and crossed the Mississippi River into Quincy and those 1,800 Quincy residents who sheltered the five-thousand refugees for the winter. The location of the park is thought to be the approximate point where the Mormons crossed into Illinois and is a proposed destination along the riverwalk. (fig. 6-9)

An inwardly oriented space is bordered by polished limestone walls with the names of the persecuted Mormons carved into the stone. Two interior walls bear the names of the Quincy residents that sheltered them. Formal plantings of trees reinforce the grid of the memorial space, provide a canopy, and buffer the noise from the overhead bridge. A person experiencing the memorial would then walk toward an elevated platform overlooking the river. An elevated walkway connects the platform to the riverfront and a threshold is created by native plantings. An existing limestone memorial located in Clat Adams Park has been placed at the centerline of the walkway near the platform entry. The purpose of outward orientation of the platform is to contrast the inwardly oriented memorial space and symbolize looking into the past and beyond to the future. Adjacent to the north of Refuge Memorial Park is Quincy's existing water works, which is to be relocated near the multi-modal transit depot. The footprint of two water storage tanks has been preserved as landscape elements echoing the sites past use. The largest tank foot print will be retrofitted as an ice-skating rink to be used during the winter months and a plaza during the summer.





Spaces within the riverfront park corridor are non-programmed, allowing for a variety of passive and active forms of use. Figure 6-10 is a perspective rendering illustrating activity in the early evening. Children play on the open greenspace and visitors finish a day of sight seeing. Residents unwind after a day at

work by exercising, walking the dog, or just enjoying the sunset. The riverbank treatment varies from a slope covered with native grasses to more structural as one approaches the southern plaza and viewing platform.



Figure 6-10. Perspective of riverfront park corridor during early evening;
Source, Author



Riverfront Found encourages multi-seasonal use for the site. The active recreation corridor has been programmed to function in both the summer and winter. During warmer months the sport fields, ball courts, and skate park fulfill

their typical programmed use (fig. 6-11).

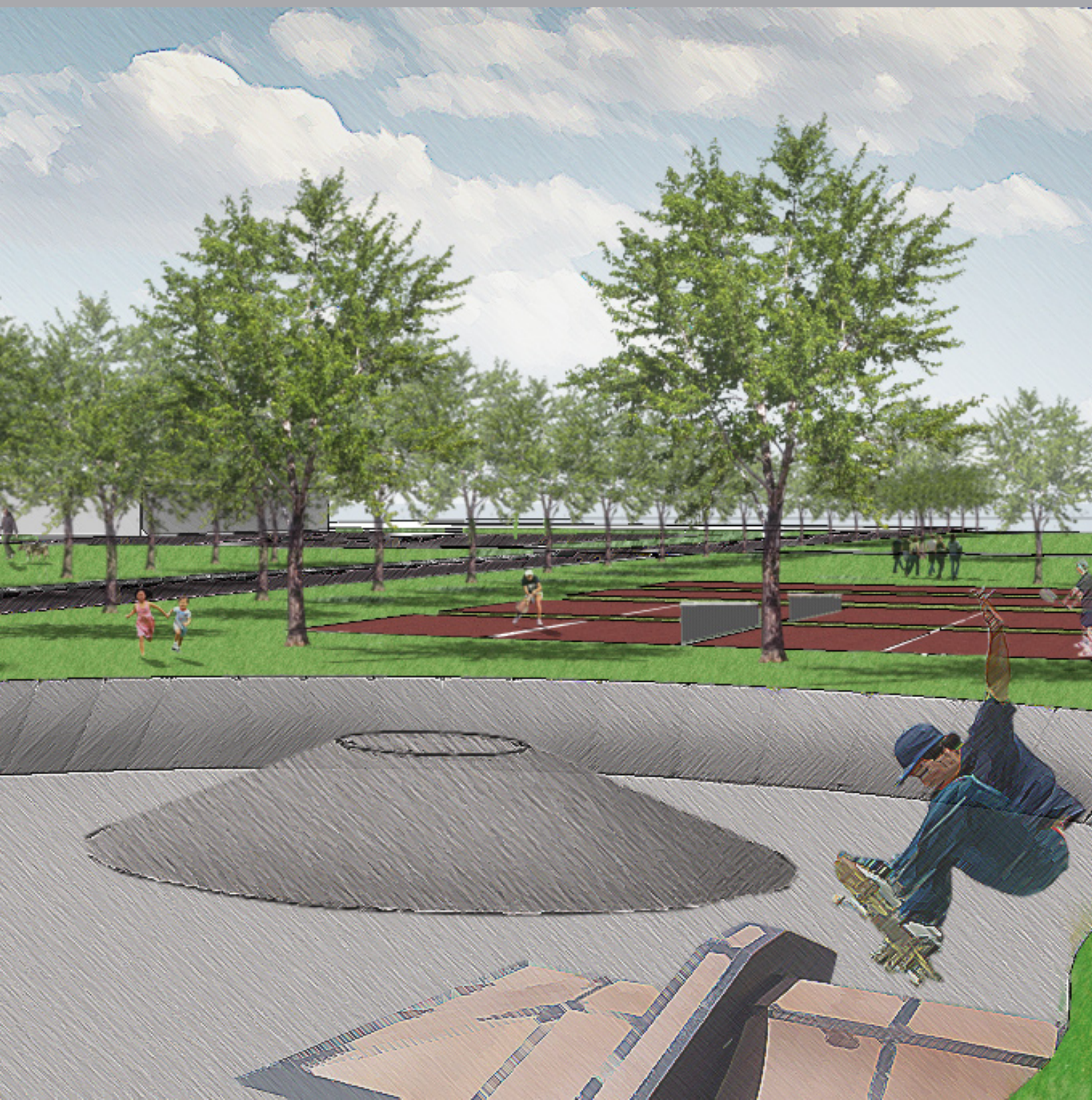


Figure 6-11. Perspective of active recreation area during the summer; Source, Author

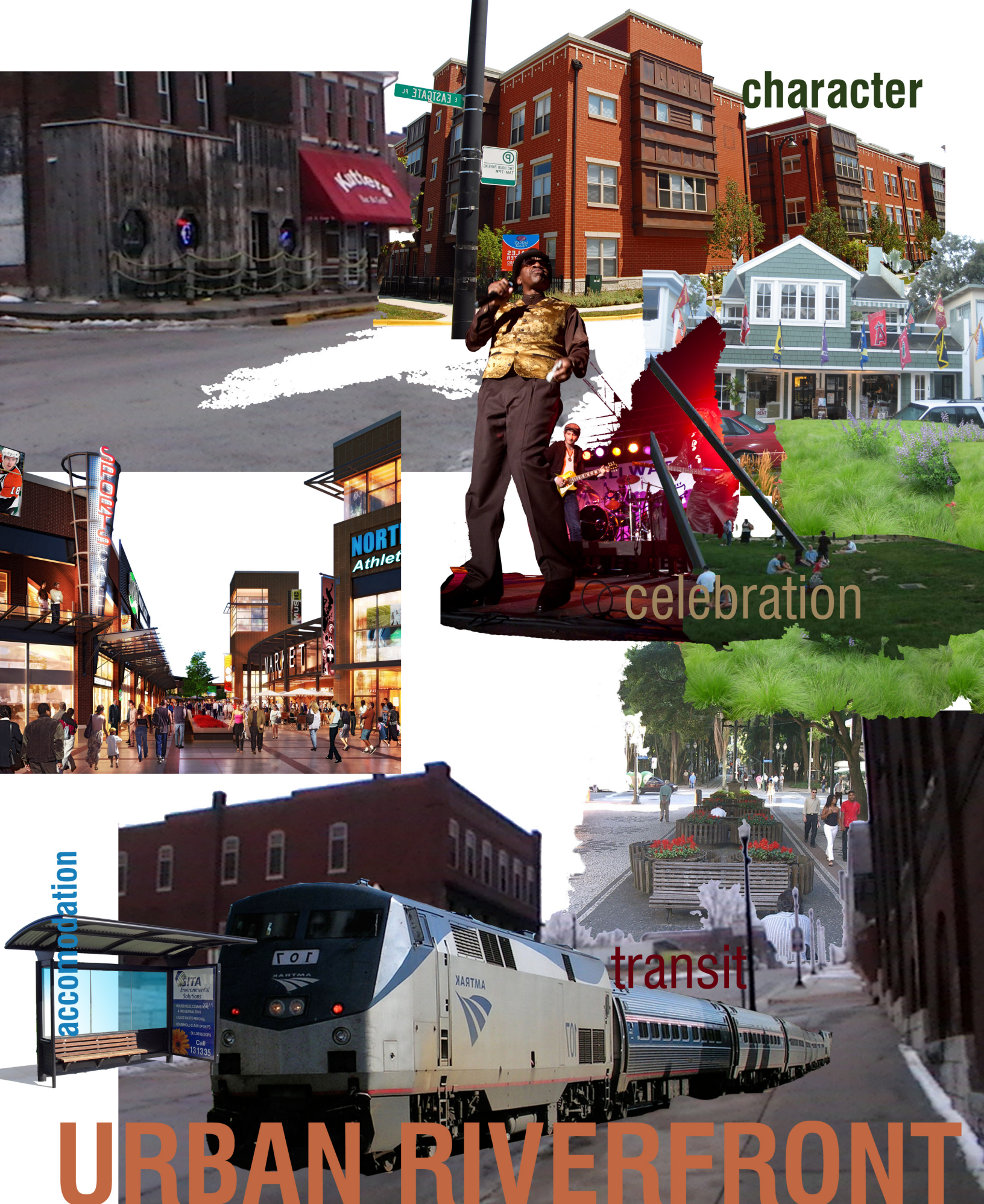


During the winter months the depressed skate park can be flooded and frozen to create an ice-skating rink (fig. 6-12). Removable elements such as the rail and ramps can be stored during the winter months to prevent damage.

Cross country skiing is another potential activity in the space. A looped ski course could be setup in the winter with extensions north toward the Cedar Creek Trail or south toward the downtown.



Figure 6-12. Winter perspective; Source: Author



character

celebration

transit

URBAN RIVERFRONT

Figure 6-13. Urban riverfront photomontage; Source: Author



WILLKOMMEN ZUM
OKTOBERFEST

heritage

home

pride



=entertainment district



=mixed-use district



=multi-modal transit depot



project goals 3 & 4:

integrate mixed-use components that will promote social and economic growth

Mixed-use options allow for residential, office, and commercial opportunities creating a dynamic atmosphere with people occupying the site day and night. (fig. 6-14 urban riverfront master plan) For instance businesses along Front Street will be geared toward accommodating tourists and locals alike. Day boaters stopping for supplies or lunch, or guests staying at the nearby hotels will find a destination within Quincy's urban riverfront. Employees can relax in the park or have lunch at a local diner during breaks. The district would remain active during the evening as employees could unwind with coworkers after work at the nearby brewery. Those living in condos or loft apartments could take an evening walk along the riverfront, have dinner, and meet friends at a night club without the need for using an automobile. A proposed community garden in the southern section of the mixed-use use area will provide vital social interaction with the landscape. The garden's purpose is for local residents to participate in growing organic food crops that can be taken home or sold at a local store or farmers market and learn of water conservation practices, environmentally conscience gardening methods, and plant care. A community action group would supervise the garden and organize any events and interaction with other organizations such as after-school programs, the Master Gardeners, or healthcare organizations. Rows of townhouses have been proposed within the mixed-use

use area to attract homeowners seeking a single-family home near Quincy's downtown. A key component to the success of the townhome development is the completion of the adjacent riverfront park corridor. The townhomes are within a walkable distance to the park corridor which would serve as an amenity and incentive to build a home near the public riverfront. South of the townhouses a proposed node has been developed for residents in the nearby existing neighborhoods who may feel disconnected from the downtown. Proposed and existing buildings will house offices, restaurants, a corner store, commercial supply stores, and the community garden greenhouse and workshop space. The entertainment district goes beyond simply suggesting a corridor of night clubs and bars, it serves as downtown Quincy's primary urban connection to the riverfront. Festivals and events taking place on the riverfront are likely to extend to nearby businesses within the entertainment district with the same being true for events taking place to the east in Washington Park. Riverfront festivals could be expanded to encompass the entertainment district bringing more opportunity for revenue and participation from Quincy residents. Weather and river conditions can result in the cancelation of festivals, however, by developing an entertainment district that has a strong connection to the riverfront major events could continue indoors during poor weather conditions.

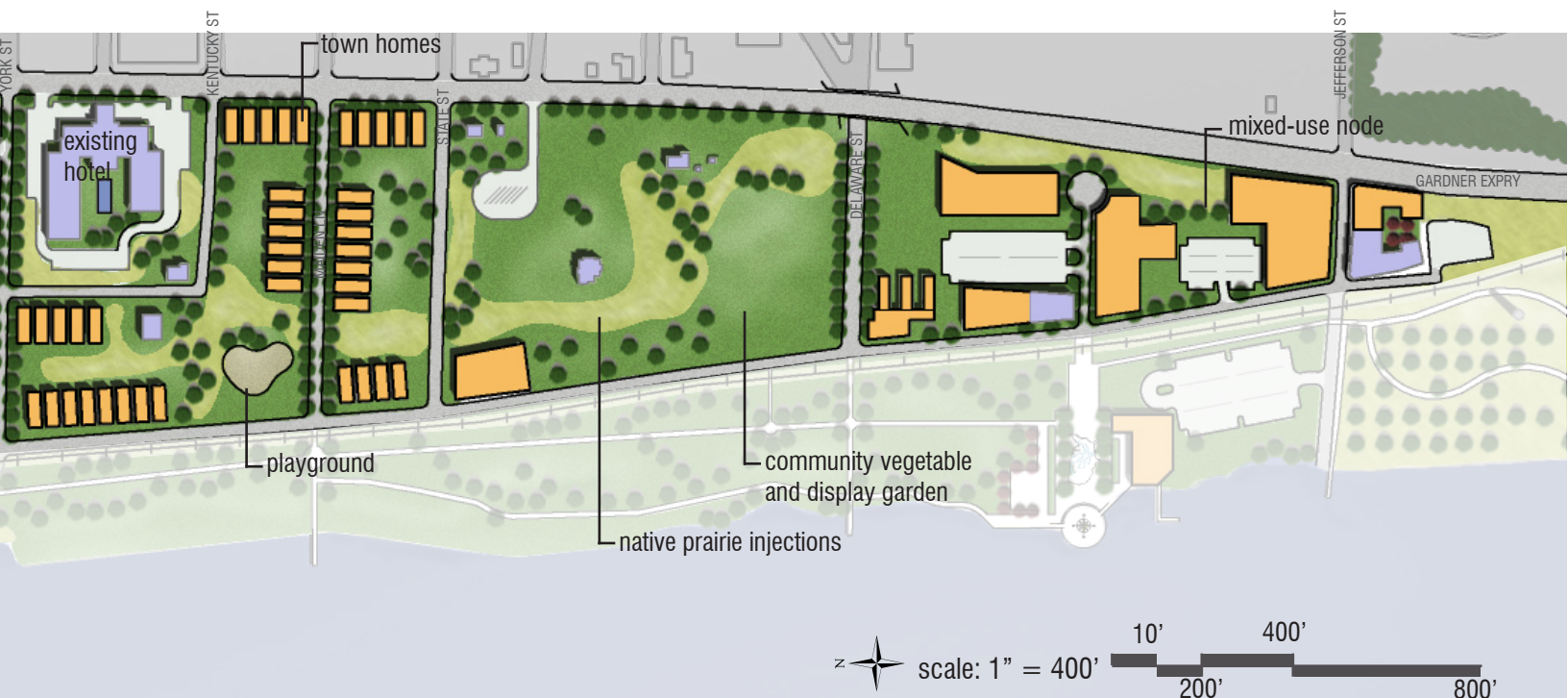


Figure 6-14. Urban riverfront master plan; Source: Author

connect downtown Quincy to its riverfront

Current east-west connecting streets from the downtown to the riverfront are harsh and unwelcoming. By incorporating street trees and planters street corridors would soften, contrasting hard lines of the architecture and offering relief from a hot sun and reflective pavement. Proposed street trees line Vermont and Hampshire street in the Entertainment District, which offer a pleasant experience for those deciding to walk from Washington Park to Clat Adams Park or the other way around. Nearly all the streets running east-west have proposed street trees to create green connections between the riverfront and downtown. Redevelopment of vacant parcels will aid

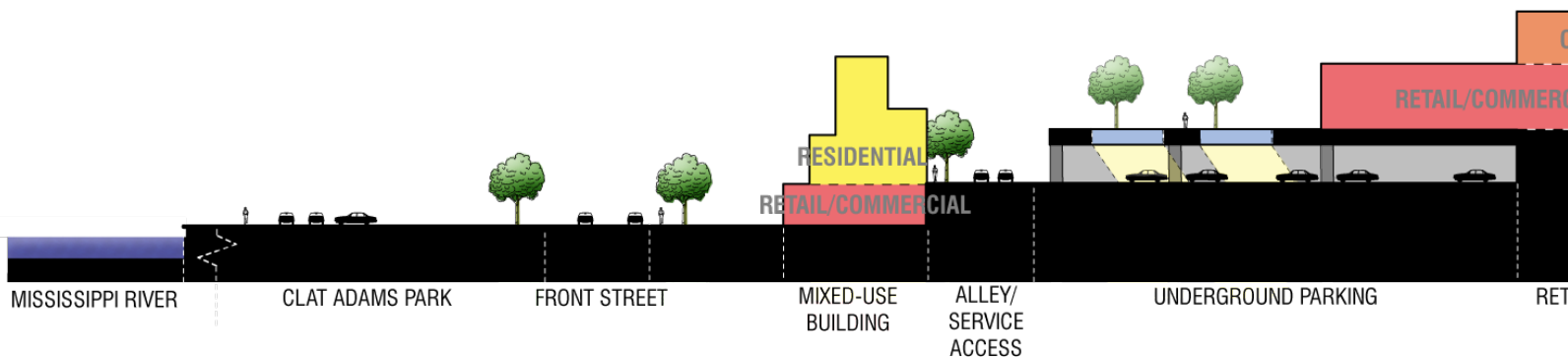
in creating a well defined street wall and enhancing the pedestrian realm. Infill within the entertainment district is to include mixed-use buildings with retail and commercial on the first floor and office or residential space above (see fig. 6-16). The multi-modal transit depot is a critical infill project as it brings connections to the riverfront, city, and region into the downtown area. Developers would likely require incentives to develop in the downtown versus a greenfield site. Some incentive ideas include lower taxes, low interest loans, a detailed plan for retail locations, or establishing a well known national chain to provide the catalyst for redevelopment.



Street + Conceptual Building Section

Existing and proposed buildings along Front Street reinforces the streetwall fronting the riverfront creating a vibrant and active foreground of the urban riverfront landscape type. (fig. 6-15) Street trees or raised planters soften the building and road lines and provide a canopy for pedestrians. On-street parking along Front Street will remain, buffering the moving automobile traffic and pedestrian sidewalks. Retail and restaurants will reach out in the pedestrian realm bringing potential customers into the store or permitting outdoor dining.

Figure 6-16 illustrates city blocks that have been redesigned to create a wide alley between two buildings permitting semi-private pedestrian oriented space. Buildings would accommodate for the steep grade of the hillsides allowing for the surrounding landscape to become conducive to pedestrian travel. Alleyways between the buildings would also contain parking for residents or workers in the buildings and vary from a simple two car garage on the ground floor for residences to an underground parking garage for the larger multi-use buildings. Businesses would locate their service areas within the alleyway in a manner that does not detract from the aesthetics of the site.



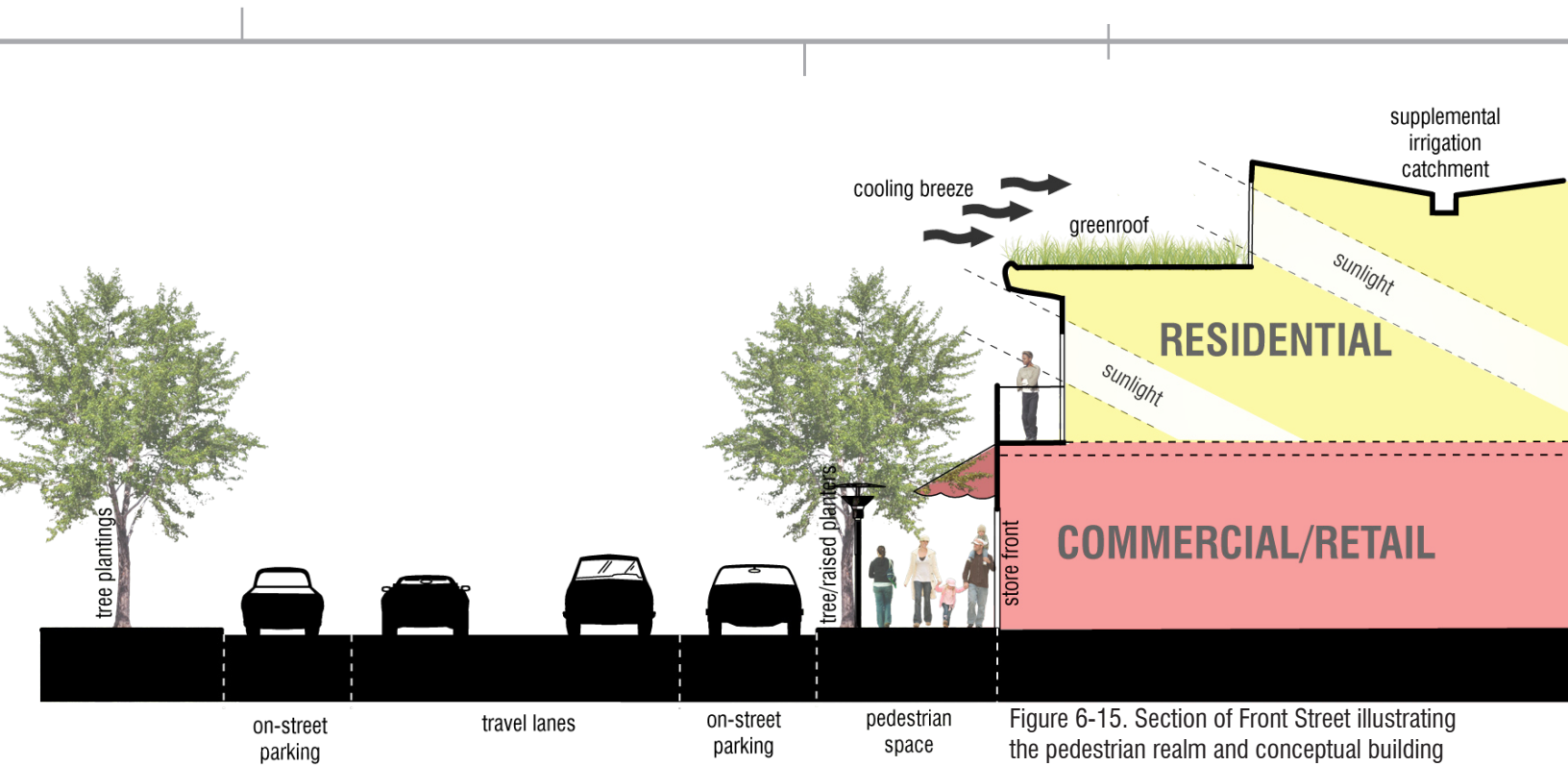


Figure 6-15. Section of Front Street illustrating the pedestrian realm and conceptual building function; Source: Author

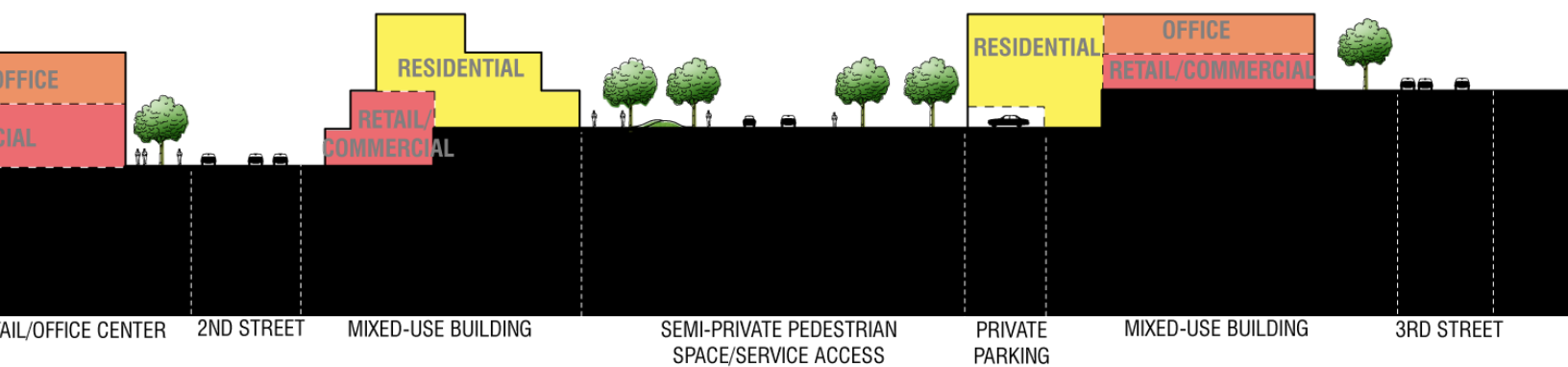


Figure 6-16. Conceptual building sections; Source: Author

Multi-Modal Transit Depot

The proposed multi-modal transit depot combines bus, train, bike, and city transit into Quincy's downtown (fig. 6-17). Permitting the Amtrak passenger train into the downtown would greatly benefit the image of Quincy as debarking passengers are greeted with views of the river, riverfront, and historic downtown. Exiting the platform an expansive series of stairs and landings flanked by native prairie lead to the transit building positioned higher on the bluff. An ADA accessible ramp for handicapped and those toting heavy pieces of luggage criss-crosses the stairway moving in and out of the prairie grasses. Ascending to the depot building visitors enter a small plaza shaded by trees, allowing a comfortable waiting space for those being picked-up at the nearby circle drop-off. For those traveling into Quincy's downtown from the station an entry plaza on the southeastern corner has a gem etched into the paving in reference to Quincy's slogan the "Gem City".

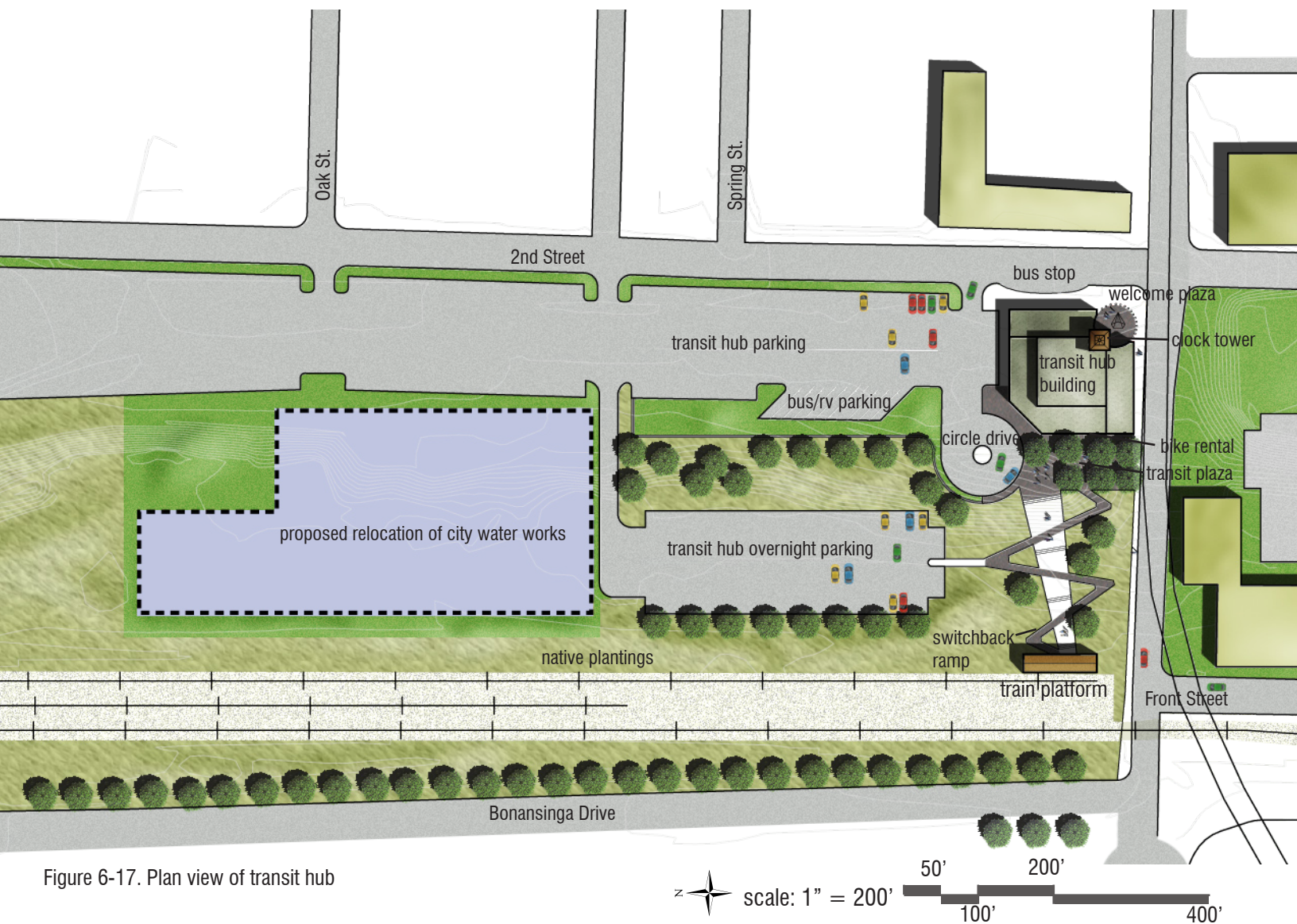


Figure 6-17. Plan view of transit hub



Perspective looking north down Front Street. (fig. 6-18)
Proposed buildings have been integrated with existing
structures. During the day the site accommodates a variety

of users including shoppers, office workers, bicyclists,
runners, children, and tourists.



Figure 6-18. Daytime perspective; Source: Author



Even in the evening, Front Street remains a dynamic and active environment. (fig. 6-19)



Figure 6-19. Nighttime perspective of Front Street.



riparian forest

Safety

river

Experience

native plantings

streams

floodplain function

wetlands

 =manufactured site

 =riparian flood area



education

post-industrial landscape

Stewardship



wildlife

Adventure

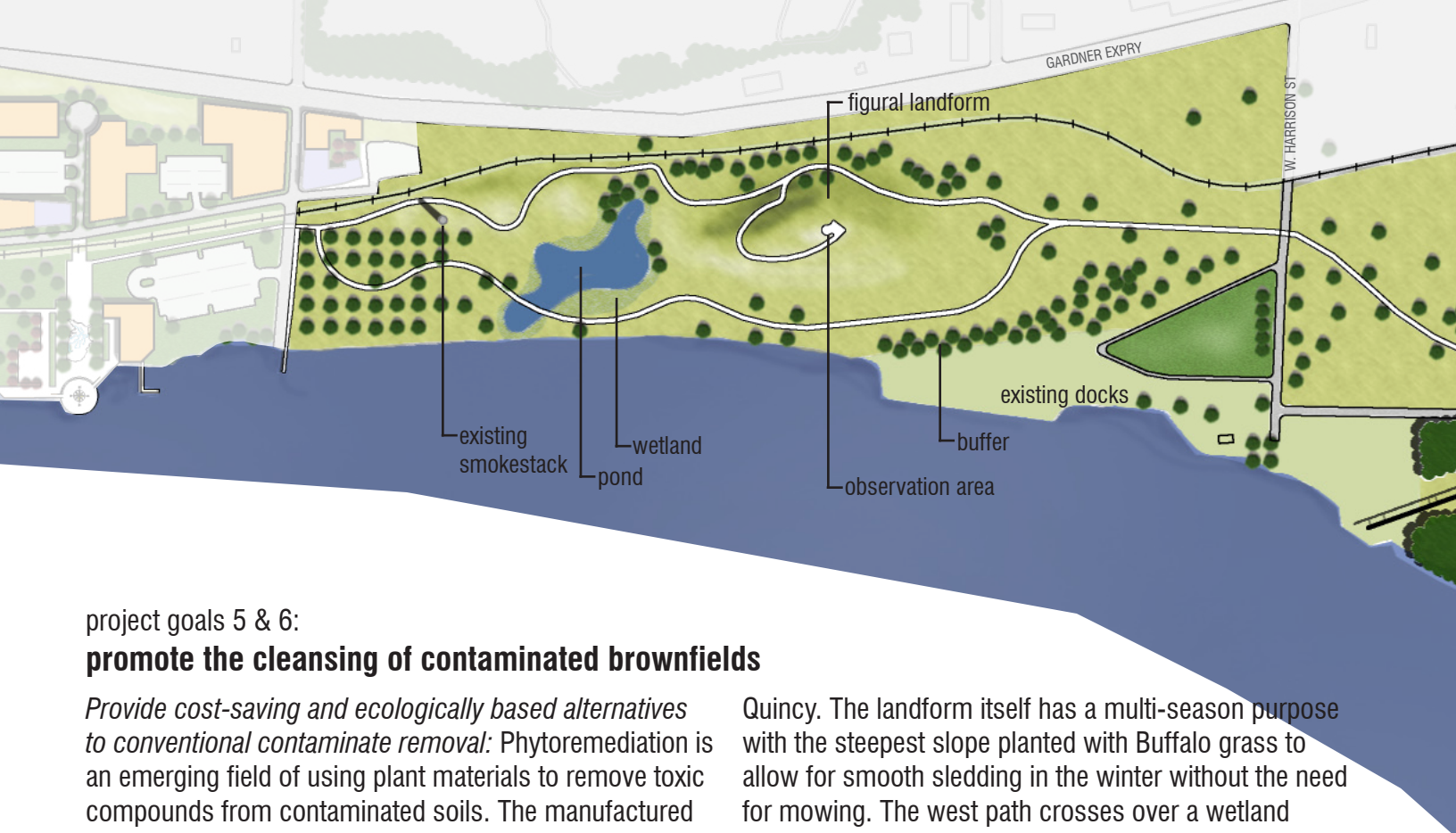
function + form

informative

remnant aesthetics

RESTORATIVE

Figure 6-20. Restorative photomontage; Source: Author



project goals 5 & 6:

promote the cleansing of contaminated brownfields

Provide cost-saving and ecologically based alternatives to conventional contaminate removal: Phytoremediation is an emerging field of using plant materials to remove toxic compounds from contaminated soils. The manufactured site located within the restorative landscape has the potential for contamination. Riverfront Found proposes introducing plant material that will aid in cleansing the soil versus the more costly method of removing the soil and treating it, or capping the contaminated soil with an impermeable layer of concrete. Upon entering the site a grid of trees symbolizes the industrial use of the site mimicking the nearby remnant smokestack. (fig. 6-21) However, as one travels farther south into the manufactured site the grid begins to dissipate and give way to stands of native grasses and forbs. The character of the manufactured site echoes a historic landscape before Quincy's settlement. Contours from the adjacent Woodland Cemetery (the first established cemetery in Quincy whose topography has been nearly preserved), were mimicked in the small rolling knolls on the eastern edge of the site. The knolls represent the bluffs while the western portion of the site is flat symbolizing the Mississippi floodplain. The riverwalk diverges near the entry with those choosing to go right (west) exploring the floodplain, while those going left (east) meander around and over the knolls. The east path connects to a short walk ascending a bold, figural landform rising over thirty feet from its base. Circling up the landform the walkway ends at an observation platform with 360 degree views of the river, riverfront, the bluffs, and glimpses of downtown

Quincy. The landform itself has a multi-season purpose with the steepest slope planted with Buffalo grass to allow for smooth sledding in the winter without the need for mowing. The west path crosses over a wetland and pond which floods every spring allowing species of fish to spawn in the calmer pond water. Come fall, river levels will typically rise again permitting the adult fish and their offspring back into the Mississippi River for the winter. The path continues through the riparian landscape converging with the east path south of the figural landform. The riverwalk continues into a riparian woodland which has been opened up to reduce the anxiety of traveling in dense tree cover and to enhance the perception of safety. Though this portion of the restorative landscape may appear more natural than the manufactured site evidence of operational heavy industry becomes a part of the landscape. A grain elevator traverses overhead from a dock to the processing plant as smokestacks loom on the southeast horizon. Traveling south along the riverwalk there are views of a wetland and pond beyond the grain elevator and glimpses of a stream meandering out and into the wooded area. Passing a building to the right the riverwalk connects with Lock and Dam Road upon the levee system. The riverwalk parallels the road until it reaches the entry to Lock and Dam 21. A platform for viewing boats and barges locking through and for watching bald eagles fish the waters below the dam is the terminus for the riverwalk and site boundary.

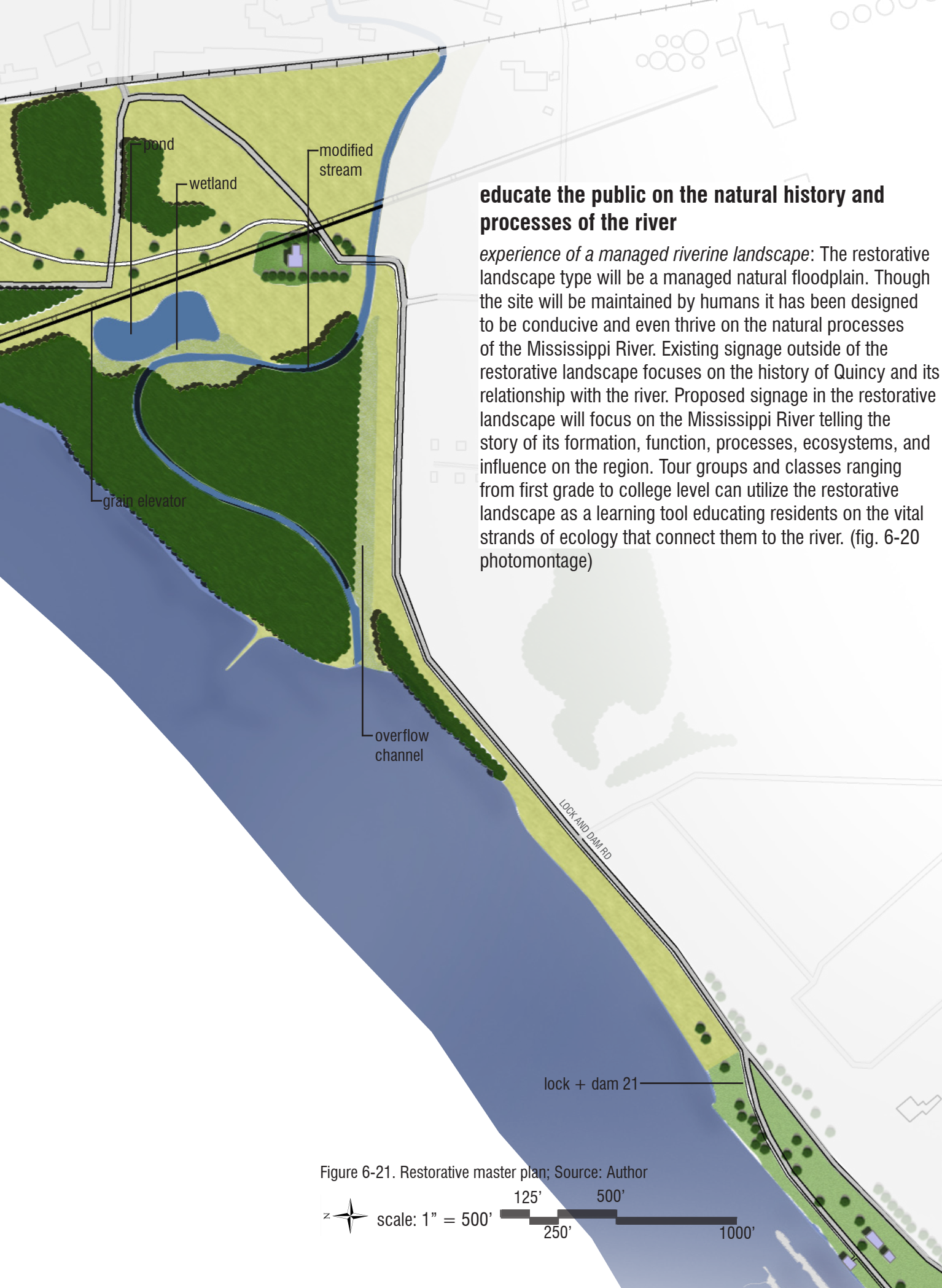


Figure 6-21. Restorative master plan; Source: Author

Riverbank Treatments

The riverbank treatments differ from other portions of riverfront by concentrating on the rivers access to the floodplain and not the pedestrians access to the river. During flood season the downstream movement of the water rises up the terraced natural slopes and spills over a wetland saddle in the topography into the pond (fig. 6-22). Before the settlement and channelization of the Mississippi River, wooded banks were important riverbank types that held the soil in place and the trees created increased roughness of the floodplain, slowing floodwaters. Figure 6-23 illustrates the profile of the existing wooded riverbank that is proposed to remain, however, the interior is altered to accommodate the modified stream.

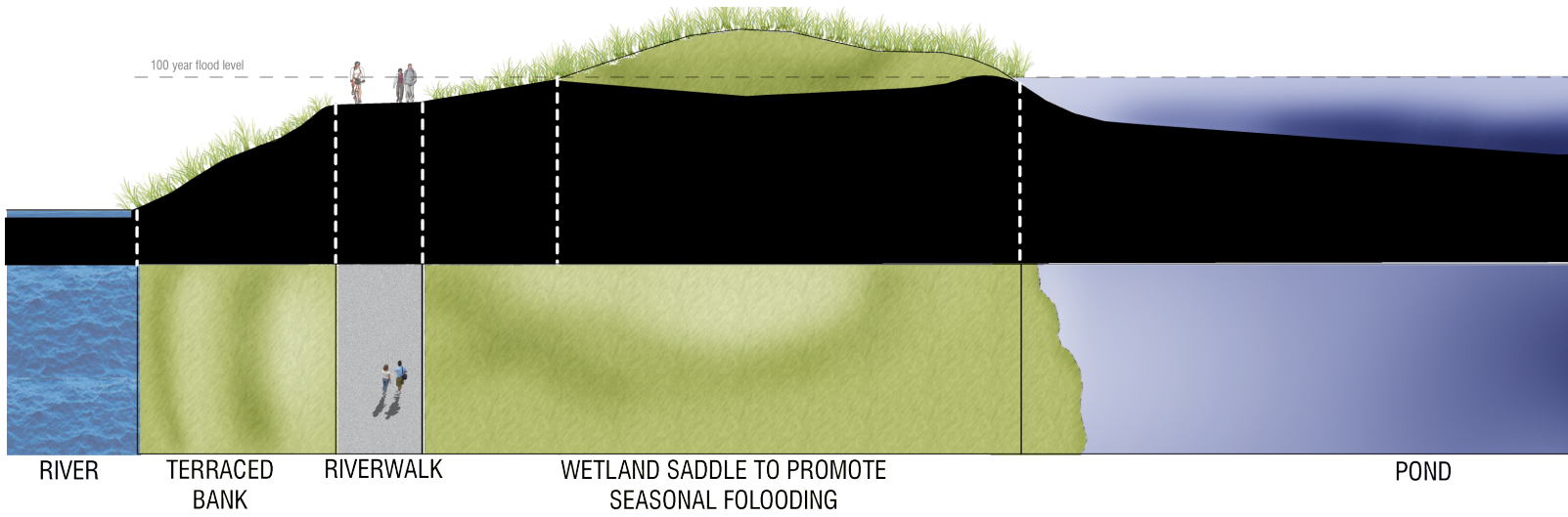


Figure 6-22. Riverbank naturalized with native grasses, NTS; Source: Author

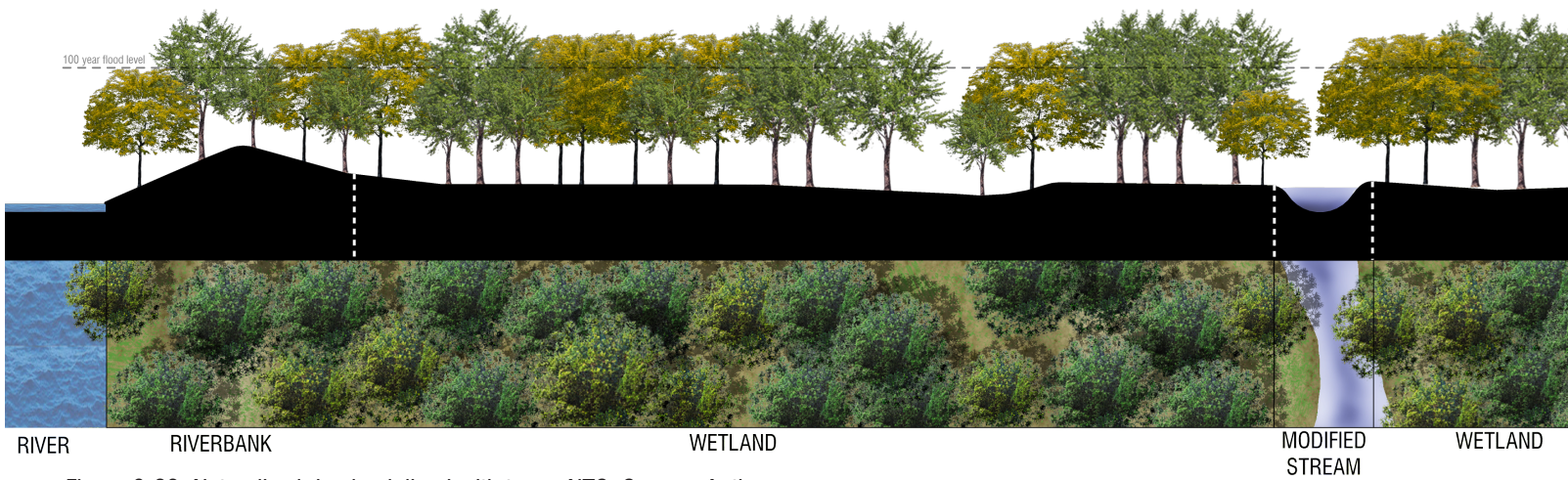


Figure 6-23. Naturalized riverbank lined with trees, NTS; Source: Author

Vegetation

Plant Selection

Riverfront Found does not detail species of plants however it should be noted that native vegetation is key in the restorative landscape. Local wildlife and ecosystems depend on various properties of native plants for food, shelter, soil holding capabilities, water retention, etc. Additionally, native plants will re-instill the floodplains ecological identity.

Phytoremediation

As was mention phytoremediation is a relatively new science with the potential to remove toxic compounds from a contaminated sites soil and groundwater. A benefit from an economic perspective is that phytoremediation cost on average, only 20% of conventional contaminate removal methods (Kirkwood, 2001). Drawbacks are due to the fact that phytoremediation is still very new and has many unknowns associated with it. Some identified shortcomings are: it only targets the rootzone, certain levels of contamination may be toxic to the plant, it is a longer process than conventional methods, and phytoremediation may transfer the toxic compound into the plant and into wildlife that feed upon it. Since I am unsure as to the existence or type of contaminants on the manufactured site I compiled a general list of plants as useful tools for extracting industrial pollutants from the soil.

(Table 6-1)

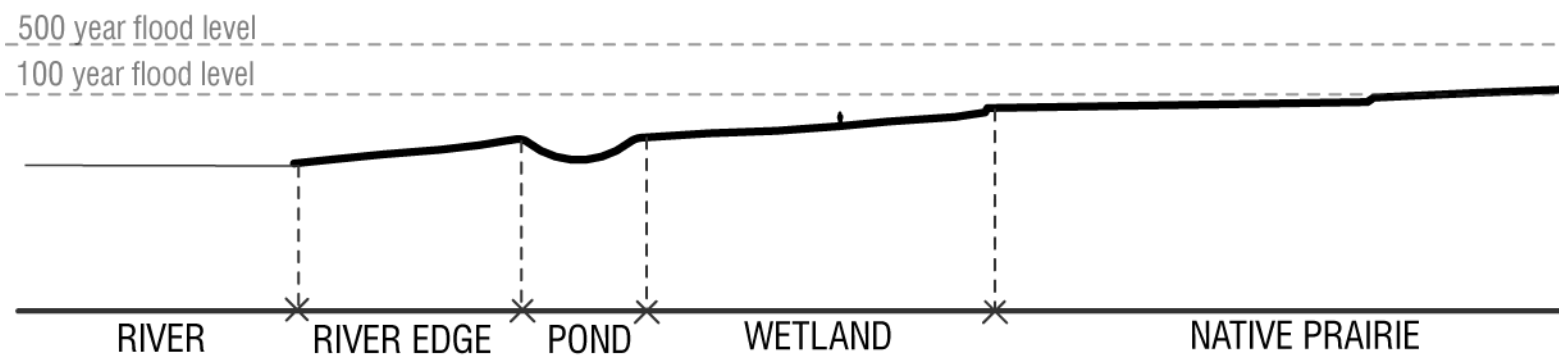
Plant	Contaminant	Targeted Medium
Hybrid Poplar	Trichloroethylene	Groundwater
Poplar	Carbon tetrachloride	Groundwater
Cottonwood Tree	Trichloroethylene	Groundwater
Hybrid Willow	Diesel Range Organics	Soil/Groundwater
Alfalfa	Petroleum products	Soil/Groundwater
Juniper	Petroleum products	Soil/Groundwater
Fescue	Petroleum products	Soil/Groundwater
Clover	Petroleum	Soil
Annual Rye Grass	Creosote	Soil
Sunflowers	Heavy Metals	Soil
Indian Mustard Plant	Heavy Metals	Soil

Table 6-1. List of plants known to have cleansing properties on brownfield sites; Source: Author, adapted from Kirkwood, 2001 & Russ, 2000

Restorative Site & Trail Sections

In the southern reaches of the site the tree line has been pulled back for better visibility. Figure 6-24 illustrates natural grasses are mowed thirty feet on either side of the trail to promote an image of maintenance and security. Views of the grain elevator remind the user of the sites integration of industrial and ecological needs.

Figure 6-25, below, is a general section through the restorative landscape type. The section highlights the proposed figural landform and succession of ecosystems as a user would move from the native prairie uplands, to the wetland, interior pond, the rivers edge, and finally the Mississippi River.



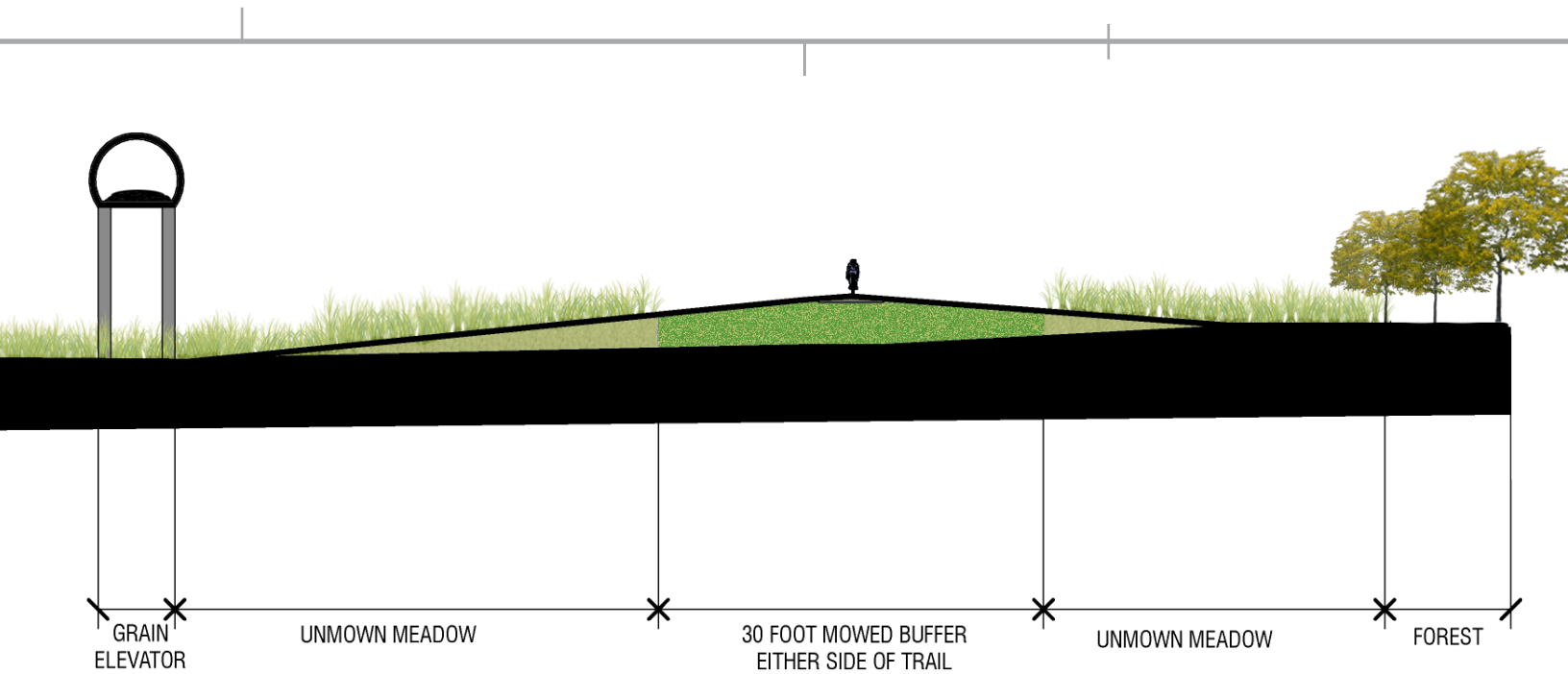


Figure 6-24. Section of trail in riparian woodland; Source: Author

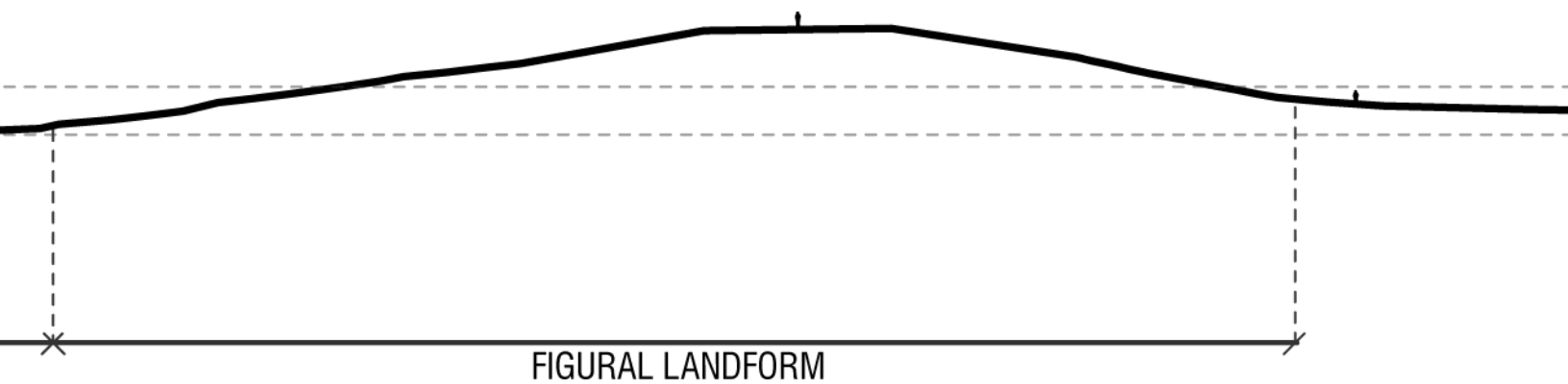


Figure 6-25. General section of the restorative landscape type, flood levels are approximate; Source: Author



In figure 6-26 prairie grasses and wildflowers dominate the landscape with the Mississippi River to the right and proposed figural landform in the distance.



Figure 6-26. Perspective from the restorative portion of the riverwalk; Source: Author



Industrial remnants provide aesthetic landscape elements and an important clue to the sites past. While portions of Quincy's riverfront have been programmed for a vibrancy of human activity, some locations aim to provide a sense of solitude and reflection. (fig. 6-27)



Figure 6-27. Perspective of remnant smokestack; Source: Author

Conclusions

07

Conclusions

Chapter 7 reexamines the design guidelines of Riverfront Found, identifying where the project successfully achieved them. Issues regarding implementation will be discussed including phasing and potential future study that would aid in the success of Riverfront Found and finally, my parting thoughts on the Mississippi River, Quincy, and Quincy's riverfront.



Achievement of Design Guidelines

Assessment of Riverfront Found's design guidelines is critical to concluding the success of the project. Following are the established design guidelines and bulleted points describing how each was accomplished.

Linear movement along the riverfront is key. The proposed riverwalk should not be a destination itself, but be the common link to destinations.

- *The Quincy Riverwalk ties together the riverfront as a means of being a connection to destinations.*

Mississippi River is a powerful force of nature that is at constant odds with human development patterns. Designs should work with the river through an understanding of its behavior, ecology, and issues threatening its stability.

- *Reduced existing development and minimized proposed buildings in the 100 yr. floodplain;*
- *Encouraged a return of natural river processes throughout the site*

Embrace the riverfronts cultural and natural history which can offer forms and design solutions familiar to the site, city, and region

- *Injection of native prairie 'fingers' to fill voids in the urban fabric*

- *Recreation of historic topography within the restorative landscape*

- *Proposed river recreation area awakes the cultural bond with the river*

- *Riverfront greenspace offers the opportunity to celebrate*

- *Quincy's heritage while creating a space that can be more conducive to flooding*

- *Preservation of industrial remnants as landscape features and clues to the sites past*

Recognize Quincy's unique qualities and convey the city's history and message through the site design.

- *Design of Refuge Memorial Park*

- *Riverwalk featured as a journey of Quincy's history*

- *Proposed materials unify and speak to the riverfronts historic character*

- *Retention of historic and industrial structures*

- *Urban riverfront mingles the traditional with the modern*

Identify and protect vulnerable natural areas encouraging preservation and education of these locations.

- *Swaths of native prairie planted on steep bluff slopes*
- *Enhancement of riparian flood zone to encourage use and education while maintaining function*
- *Restraining development in the floodplain*
- *Pull back the layers of the riverbank to reveal the natural character of the river*

Look to provide a landmark of the riverfront that will be remembered by visitors.

- *Bold figural landform in restorative area*

Create and strengthen the pedestrian environment.

- *Widen walkways to handle larger pedestrian capacities*
- *Creation of a pedestrian zone using street trees, parking, and buildings as spatial definition*
- *Pedestrian amenities such as appropriately scaled lighting, benches, informative signage*
- *Proposed large shade trees for better ground plain visibility, increased perception of safety, buffer noise from bridges, and comfort*

Do not lose focus of the star player, the Mississippi River.

- *Peeled back the layers of industry and development to reenergize the character of the Mississippi River*
- *Proposed development embraces the river as amenity not nuisance*

Implementation

Potential Future Study

Successful implementation of Riverfront Found requires additional information and future study. Following are identified potential future study topics that could aid in the success of revitalizing Quincy's riverfront.

- Further investigation of possible soil contaminants and low-cost remedies involving phytoremediation
- Potential connections to a regional river greenway trail system
- Community roundtable sessions to gain public insight on development options
- Applicability of Riverfront Found to other river towns
- Structural analysis and proposed restoration/retrofit possibilities of historic buildings
- Wildlife habitat assessment
- An economic impact survey
- Investigation into the need for changes to the zoning code/request for zoning variances

Phasing

Riverfront projects can be massive undertakings. Phased implementation can demonstrate early success to the general public and allow civic bodies to begin immediate action versus delaying decisions. Following are phasing benchmarks for Riverfront Found. This is a general list, which will likely require the development of an entire framework to execute the proposed master plan.

2015

- establish an appropriate approach for funding, Tax Increment Financing (TIF), private donors, etc...
- redevelopment of the Front Street corridor and entertainment district
- begin acquisition and development of parcels within the riverfront greenspace landscape type
- begin contaminate removal from any identified brownfields via phytoremediation
- redevelopment of river recreation area near the Pier restaurant
- open up residential zoned area to private developers and contractors for construction of town houses

2020

- construction of a multi-modal transit hub and train platform
- relocation of city water works
- begin construction of mixed-use district
- finish development of riverfront greenspace

2030

- Year of completion

A Note on Management



Figure 7-1. Precedent of controlled burns performed in Manhattan, Kansas directly adjacent to a residential subdivision (Author, 2010)

With my bachelors degree in the field of horticulture I feel it is important to acknowledge the maintenance needs of the proposed riverfront design. Cost is the key issue, especially when dealing with long term public projects. Yes, the proposed design shall require an increase in municipal funds going toward the city maintenance and parks departments, however, it is my hope that construction of the proposed greenspace and amenities will be a catalyst to spur economic growth in the downtown. Quincy will see increased sales tax revenue, property tax, and utility fees as businesses and residents move into the downtown.

The proposed swaths of native plantings, especially the proposed native prairie 'fingers' injected into the urban fabric, may seem like a daunting maintenance task. Yet, incorporating native prairie plants serves multiple social and ecological roles. From a social standpoint, incorporating native prairie into Quincy's urban fabric will enhance the city's identity and character. The wild prairie may be long gone from the Illinois landscape and the minds of those who now live in Quincy, but as the eyes of residents and visitors drift across sweeping arms of native prairie it will evoke thoughts of a historic landscape that has nearly been snuffed out. Ecologically, the grasses perform a multitude of roles including slowing down stormwater runoff, returning organic matter and fertility to the soils, wildlife habitat and forage, and reducing the need for conventional landscape maintenance methods.

Seasonal burns of prairies have been practiced in the Mid-West for millennia and are accepted as the ideal method of management for stands of native prairie plants. The thought of setting portions of prairie stands near downtown Quincy ablaze is a fearful concept for most and most assuredly illegal in the city limits, however, there are municipalities that practice controlled burns in or near their city limits and developed areas. (fig 7-1) Precedents can be found in the Great Plains states where large and small areas of prairie are still burned seasonally. On site, southern portions of proposed prairie within the restorative landscape type are well-situated for burning with very little surrounding development and the railroad acting as a firebreak. Mowing is another method for management, but is not as effective at targeting invasive species.

Parting Thoughts

Native Americans saw the Mississippi River as a lifeblood for their tribes, bringing sustenance, trade, and access to the hinterland. Arriving European settlers followed the same belief but had a different approach to living with Old Man River. Conquering of this natural feature seemed certain after the nine-foot channel project, yet, today we are faced with a new set of problems as we attempt to regulate a river whose floods swell for miles beyond its banks with a ferocity that reminds humans of the transcendent character of the Mississippi. The diverse riverine ecosystems that took millennia to build have become more simplified over the past 200 years. What will the river look like in the future? It is not an easy question to answer, however, author Calvin Fremling (2005) predicts that much of the Mississippi will look much the same as it did before the nine-foot channel project with pool levels elevated to the height of the dam. He also believes that the bluff tops and face will be plastered with development ruining the character of the Upper Mississippi. Simply put Fremling states, “The future river will be a bit less diverse, a bit more monotonous, and a bit grayer, but it will still be here” (Fremling, 2005). In geologic time, the river has humans beat as our attempt at controlling the Mississippi will seem like a pestering gnat brushed away by a giant.

However, this fact should not be thought of as a doomsday prophesy that excuses our actions, instead it is an understanding that humans have the opportunity to experience a natural phenomenon that will transcend our lifetimes, the river was here before us and it will be here longer after we are gone. We should be honored to be a part of the Mississippi’s story. River towns like Quincy, Illinois are an important part of the story and they have the responsibility of telling it. Riverfront Found seeks to bring the story of the Mississippi and the city together on Quincy’s riverfront. Quincy’s heritage stems from the Mississippi River and perseveres in its residents, city, countryside, but most importantly, its riverfront. The successful design of Quincy’s riverfront hinges upon the integration of social and ecological concerns that take into account the needs of the human and the river. Retracing Quincy’s history along the riverwalk, we can identify the vital strands that connect the city to the river, which are identifiable in the locally based landscape types that define Quincy’s riverfront. Quincy is a town rich in history. With a lost riverfront now found through a development of social needs and the river’s ecology, Quincy has the opportunity to honor its history while looking to the future.

appendices

18

Appendix A: Design Process

Personal Philosophy Origins

Understanding the intricacies of nature has and will continue to shape the story of humankind. It seems that it is a deep relationship with nature that attracts many landscape architects to the profession in the first place. Nature has perfected her sense of design through the evolution of life and her presence is evident in all scales of size and time. Whether we speak of biotic or abiotic objects and processes, what can be a seemingly complex structure or system is based on a very simple form, the golden ratio (or section). (fig. 8-1) The golden ratio is found to be aesthetically pleasing in both a qualitative and quantitative way as it has been a fascination and tool of mathematicians, architects, biologists, artists, musicians, philosophers, and psychologists for over 2,000 years.

The golden ratio inspires my design philosophy through its direct relationship with the Fibonacci sequence and fractal geometry to uncover a universal law of completeness and balance in nature. Perhaps the most poignant example of the golden ratio transcending scale is to look at the formation of our own Milky Way Galaxy and the pattern of growth in a simple sunflower on Earth. Adolf Zeising a mathematician and philosopher in the middle 19th century summarizes the universal law of the golden ration in which “is contained the ground-principal of all formative striving for beauty and completeness in the realms of both nature and art, and which permeates, as a paramount spiritual ideal, all structures, forms, and proportions, whether cosmic or individual, organic or inorganic, acoustic or optical.”

The golden ratio helps me to see my site for its natural aesthetic qualities and functions, but to be mindful of the larger and smaller scales as I learn to think universally. To me the golden ratio speaks of the relationships between a dynamic environment and urban form, a relationship that seeks balance and completeness. (figures 8-2 through 5)

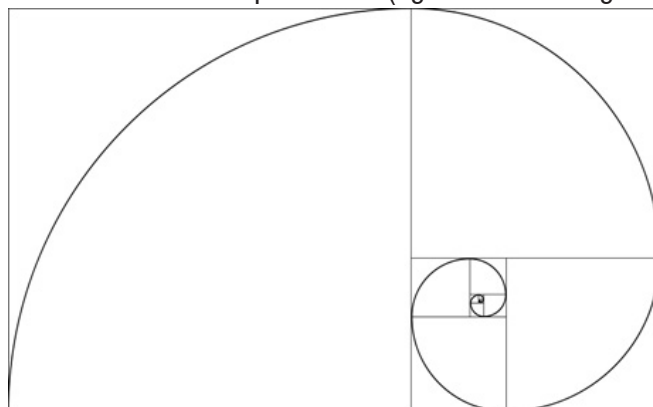


Figure 8-1. the golden section diagram illustrating the successive golden rectangles and spiral

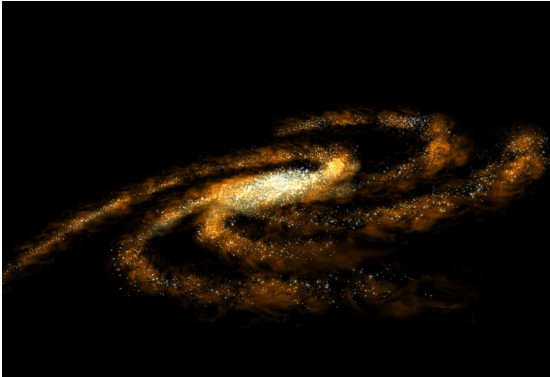


Figure 8-3. Looking to one of the largest spiral shapes conforming to the golden ratio, our galaxy

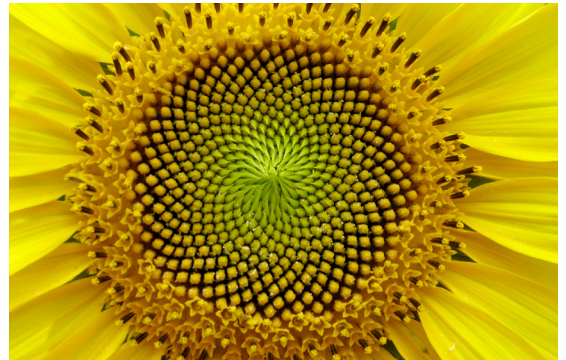


Figure 8-2. As we look to our own planet we see the spiral repeated to the smallest of scales

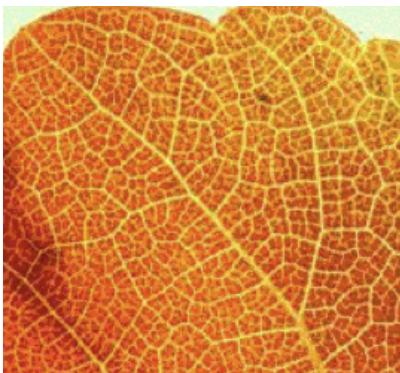


Figure 8-4. The intricacies of leaf venation on a tree



Figure 8-5. The pattern repeated in the hydrologic system

Project Philosophy + Path

The geometry of my philosophy and path diagram is proportioned according to the golden ratio. (fig. 8-6) Each circle represents a step in the process as I ascend to the final product in the spring of 2010. The arrows indicate the cyclical movement of each step as ideas and concepts are weighed, decisions are made, and previous work is altered or refined. My path is illustrated as the red line beginning on the outer fringes slowly encircling up to the final product and is representative of the spiral shape repeated throughout nature.

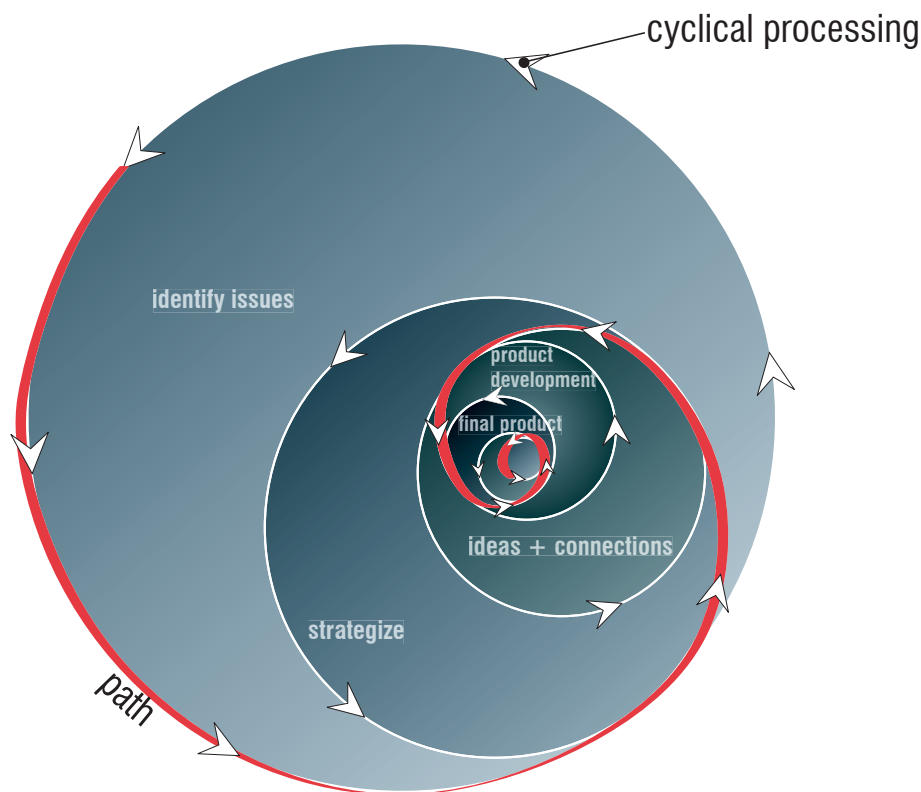


Figure 8-6. Design process diagram; Source: Author

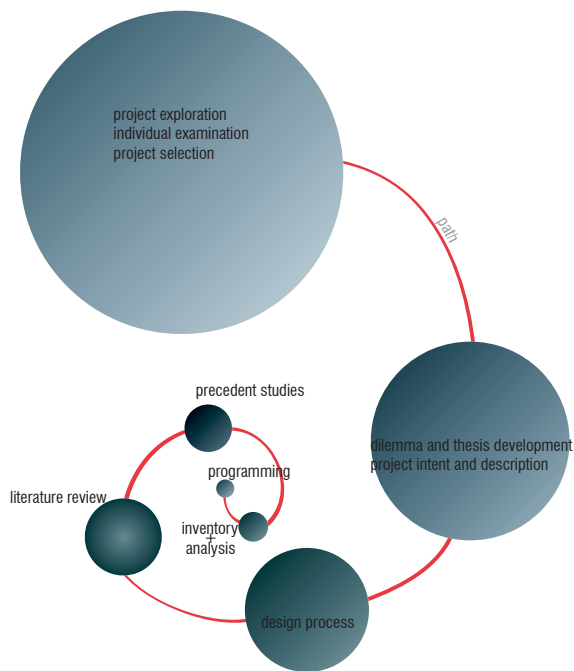


Figure 8-7. Source: Author

Fall Semester

Abstraction is key to an overall design process so as to not limit its ability to be applied to multiple projects of differing scales. However, if I disassemble my design process into individual pieces this aids me in visually understanding where major tasks will fit into the process. (fig. 8-7) While time is not as clearly represented in the original design process diagram, the figure above clearly illustrates the temporal relationships of each major task required for this specific project. The red line defines my inward path as time progresses.

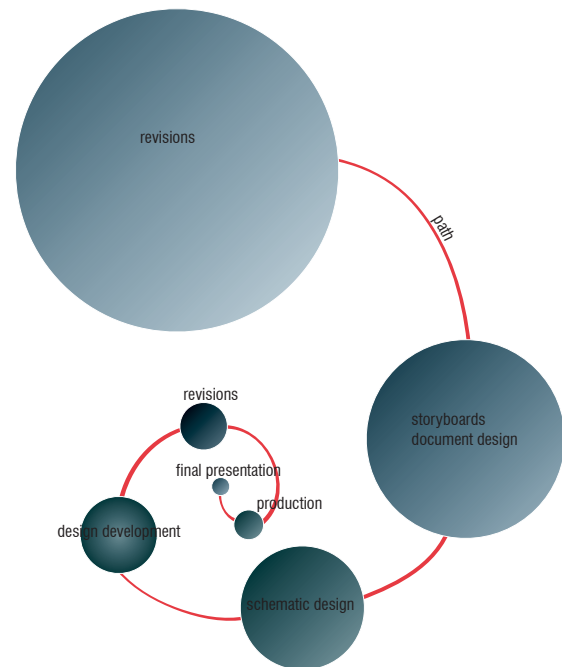
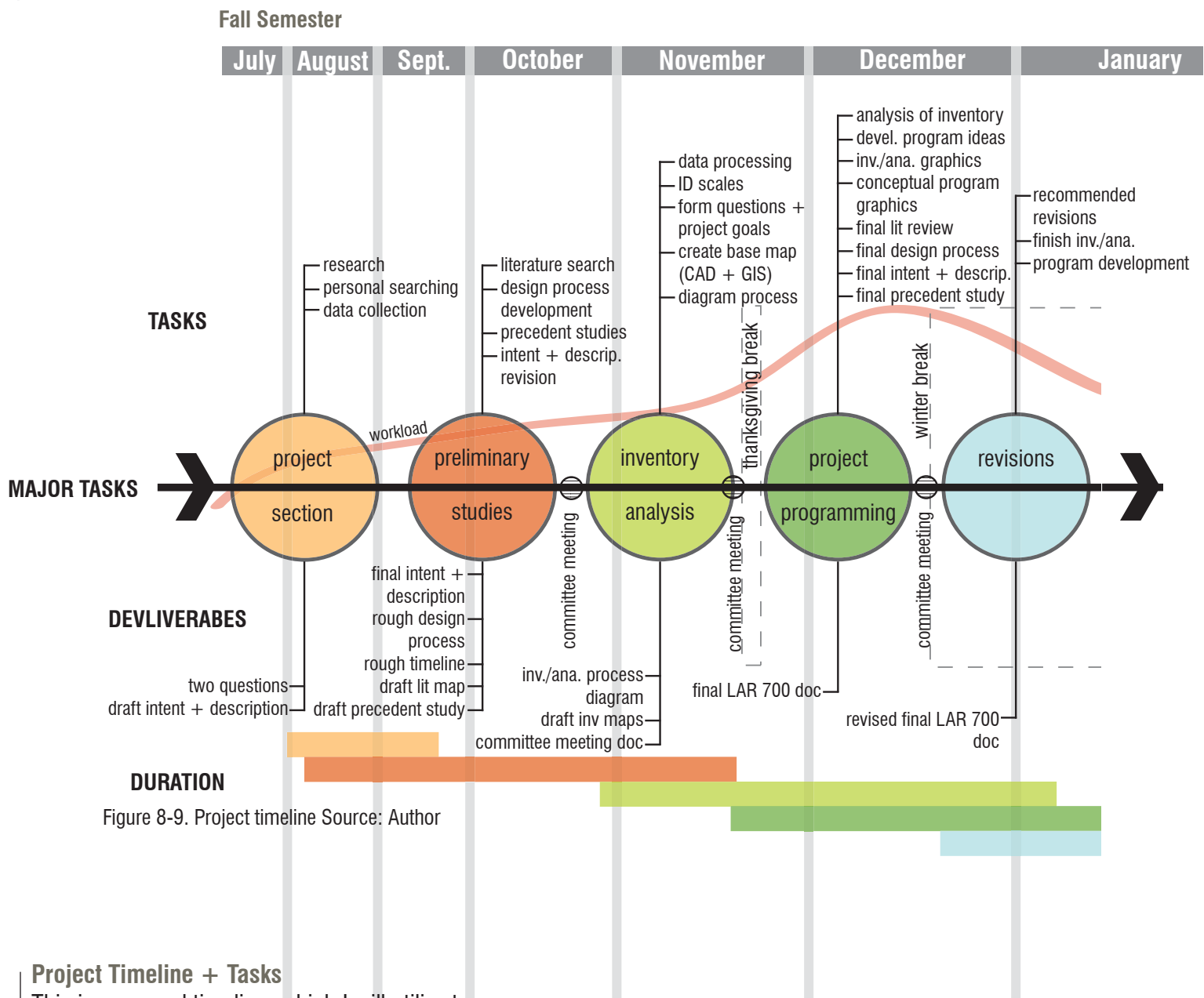


Figure 8-8. Source: Author

Spring Semester

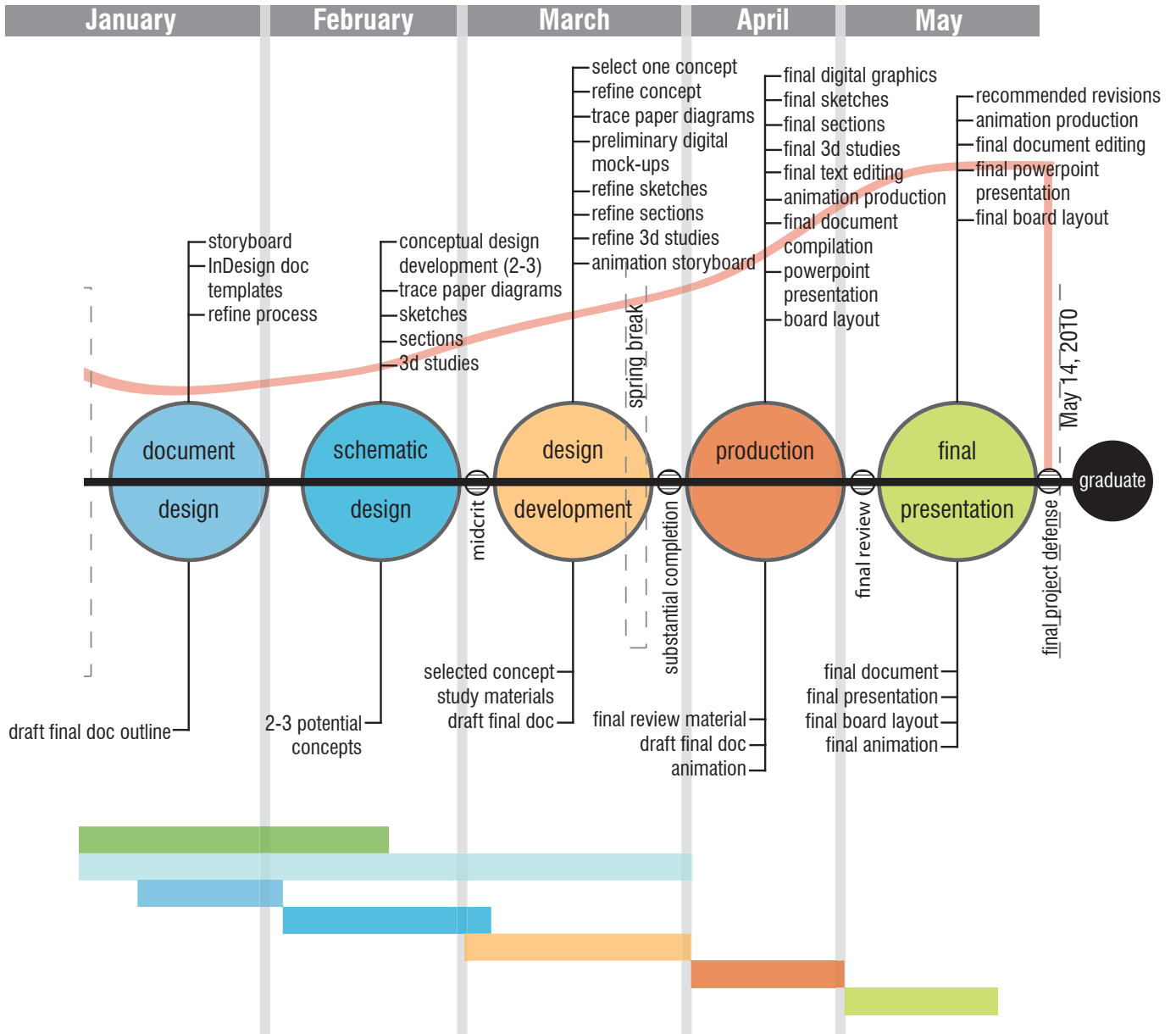
Through the use of the golden ratio and fractal geometry we can change scales or zoom in to find a continuation of my path into the spring semester. (fig. 8-8) This is final cycle of the design process as I approach the final document.



Project Timeline + Tasks

This is a general timeline, which I will utilize to track my progress through the masters project process. (fig. 8-9) The project timeline begins in the summer of 2009 and outlines all the major tasks and sub-tasks through to May of 2010. A red line representing workload predicts a peak in production near the end of the fall and spring semesters.

Spring Semester



Appendix B: Literature Review

Personal References

Following are a few influential literature titles I have read that are directly related to landscape architecture. A brief description of each book indicates how these titles have shaped my views of landscape architecture, design, and our natural and built environments.

A Sand County Almanac (1949)

Aldo Leopold's collection of essays seems to poetize the argument for the early conservation movement. Sand County Almanac describes a sense of urgency to begin learning and protecting our shrinking area of wild landscapes, which is shocking to me due to the fact his essays were written nearly seventy years ago. Unlike Leopold, I am not a hunter and I have not explored the American West on horseback as he did, but I can still relate greatly to what he describes. My own explorations of the woods back home during winter as I would find a game trail and then hunker down to spot a deer or perhaps a coyote. Growing older I have witnessed changing natural processes influenced more by man than nature. As more subdivisions breach the city limits the coyote have disappeared and the deer have increased bringing with them voracious appetites, disappearing understory vegetation, and highly eroded slopes.

Design with Nature (1995)

Ian McHarg's classic book was a key stepping stone to bringing the work of landscape architects beyond that of pure landscape design in the mid Twentieth century. For me, Design with Nature has opened my world into seeing the layers within layers composing a landscape and natural processes. Processes that not only benefit wildlife, they protect, nourish, and intrigue us.

Geography of Nowhere (1993)

In his book Geography of Nowhere James Kunstler lashes out at the suburban movement and the big-box mentality of commerce. He speaks of a vanishing American landscape which is being consumed by developers, big business, and false dreams. Geography of Nowhere can come off as a book filled with accusations with very little suggestion for remedies; however, I find that Kunstler does adequately present the issues of today's sprawling cities and a vanishing American landscape vernacular.

Suburban Nation (2000)

Suburban Nation, like Geography of Nowhere, argues against the suburban model of single family single-use developments and advocates for utilizing historic growth models of mixed-use and celebrated architecture. Authors Duany, Plater-Zyberk, and Speck offer cases for solutions generated from their own planning and design firm, one project most notably being the city of Seaside in Florida. Their argument for mixed-use follows the principles of New Urbanism and details issues regarding planning, design, economics, social conflicts, and policy. For me these are good examples as I have begun to understand the positives and negatives to the principles of mixed-use design and movements like New Urbanism.

The Landscape Urbanism Reader (2006)

Charles Waldheim who is credited with coining the term 'landscape urbanism' is the editor of a collection of essays that define his manifesto toward a new school of thought in the field of landscape architecture. Specifically, this text has helped me address issues in a project when the ideals of New Urbanism fall short. Landscape urbanism, I believe, is an answer to the inadequacies of New Urbanism.

Project References

This next set of literature titles are works recently discovered by myself, researched primarily for use within this project. The literature selected spans a wide spectrum in terms of ecology, urban design, brownfield development, and the Mississippi River. Each title is briefly summarized along with key points that will be useful for my project.

Designing Small Parks: A Manual for Addressing Social and Ecological Concerns (2005)

Ann Forsyth and Laura Musacchio's manual serves to inform my site analysis through their integration of ecological values into the design of parks. The criteria Forsyth and Musacchio use in the design of parks pertain to both the social and ecological elements in the landscape. *Designing Small Parks* studies how public parks can be formed and shaped by natural systems. For instance a water feature that has been tied into the hydrology of the site can provide function (runoff detention), pleasure (watching wildlife), and comfort (temperature moderation). This manual goes beyond the concept of a conventionally designed urban park that may simply provide a pleasant environment. Forsyth and Musacchio offer a strategy that employs aesthetic design with a response to an ecological need. The results are small parks that provide natural and social benefits. Key ideas I will utilize to form my own framework for ecological analysis include air quality, development type, tree cover type, and hydrology.

Downtowns: Revitalizing the Centers of Small Urban Communities (2001)

Editor Michael A. Burayidi brings together several essays on the revitalization of downtown areas. The book is made up of four parts that all have played a role thus far informing my project. Part Three Waterfront and Brownfields Redevelopment speaks more to my project than any of the others. The first essay of this section, Waterfront Planning as a Strategic Incentive to Downtown Enhancement and Livability by Zenia Kotval and John R. Mullin describes the politics of policy and downtown revitalization through redeveloping an under-utilized waterfront. The second essay is a case study concerning brownfield redevelopment in the Fox River Valley cities in Wisconsin. Because there is little text actually describing design theory, processes, and solutions, this book

is best suited informing the planning aspect of my project.

Ecological Design and Planning (1997)

A compilation of essays from many prominent landscape architects have been brought together by editors George F. Thompson and Fredrick R. Steiner. These essays deal with the deployment of ecology varying from rural and urban settings. Essays by Elizabeth K. Meyers, James Corner, and Ian McHarg, just to name a few, look to explore ecology in terms of retrospect, prospect, and respect. The editors consider that for too long design and planning has viewed nature and culture as one dominating the other. The essays within *Ecological Design and Planning* reflect upon geographies and landscape histories to identify both nature and culture as inseparable. Further, the editors believe that by embracing cohesion between nature and culture we can begin to "heal and improve the landscapes and places of everyday existence-urban, rural, and wild-in environmental and aesthetic terms." (Thompson & Steiner, xii)

Many of the essays differ from one to the other; some find aesthetics through the choreographed chaos of nature while others identify aesthetics through a simple design movement, conveying inner meaning to the user. Essentially, some authors find landscape architecture to be more based in art than science and vice versa. Some essays go beyond the debate of art and science and argue for the exploration of environmental ethics within our economy, such as Clair Reiniger's work *Bioregional Planning and Ecosystem Protection*. In her article Clair states 'Our economies are embedded within larger ecosystems.' (Thompson & Steiner, 188) This statement echoes throughout Quincy's history as an economy dependent upon the Mississippi River and seconds as an argument for a design that is considerate of river ecology. Additionally, Joan Hirschman Woodward's article *Signature-based Landscape Design* describes how to identify patterns within the landscape. These patterns are derived by three categories of processes: ecological, cultural, and economic. Joan asserts that once patterns are identified we are supplied with a 'wellspring' of regional, familiar forms "from which to draw design inspiration." (Thompson & Steiner, 213) The collection of works found in *Ecological Design and Planning* will be effective in developing my design theory as I contend with ecology of the landscape and the urban fabric of the city.

Image of the City (1960)

Kevin Lynch's classic, explores the social aspects of the city and how it's residents perceive such aspects. Lynch's key terms node, district, landmark, pathway, and edges are crucial in my exploration of precedents project and my analysis of Quincy's riverfront. A Lynch study of the Davenport riverfront provides a comparison to Quincy's riverfront. Additionally, Lynch's terms will form the basis of the social component of my analytic framework.

Immortal River (2005)

Calvin R. Fremling's text *Immortal River* served as my primary source on the Upper Mississippi River. As he chronicles the spatial and temporal scope of the river from ancient to modern times Fremling looks at the formation of the river valley, Native American influences, conflicts of early settlers, reshaping the river by the Corps of Engineers, and the Mississippi Rivers ecological response to these natural and man-made changes. Fremling's text is supplemented by illustrations, photographs, and interesting facts and short stories that influenced the Upper Mississippi.

Manufactured Sites: Rethinking the Post-Industrial Landscape (2001)

Manufactured Sites is a compilation of articles presented at a 1998 conference and exhibition entitled "Manufactured Sites, A Landscape Conference on Site Technologies for Contemporary Practice." Both the conference and this book were organized by landscape architect Niall Kirkwood. *Manufactured Sites* seeks a collaborative approach to derelict or brownfield sites. Collaboration includes professions involved with environmental, economic, legal, policy, and design fields, which will work together to restore the site to "environmental health" and reintegrate the place into the "economic and social life of the city." For my project *Manufactured Sites* can serve as a model for the collaborative work between various science and design professions when dealing with the post-industrial landscape. The articles in this book defend the development of derelict industrial areas as a way to combat pressures on undeveloped land, which is an issue that I mention in my dilemma. One problem I have been presented with is that there are no sites specifically classified as brownfields within the project area, instead these sites are described as having "known environmental issues". The scope of my project

does not involve myself physically testing for contaminants in a search for brownfields; therefore, I have utilized much of Kirkwood's language, concepts, and themes to address my "known environmental issues". Site visits have confirmed that a handful of places do contribute to environmental and aesthetic degradation as a result of a post-industrial landscape. These degraded areas have been classified as derelict or manufactured sites. Other key components of the text include preservation of existing architecture such as older brick warehouses that can preserve the history of a place. Recovery of a site through phytoremediation is expanded upon as a method for removing a sites social, economic, and environmental blight. All of the remediation techniques mentioned can be utilized within my project.

Redeveloping Brownfields (2000)

Written by landscape architect Thomas H. Russ, *Redeveloping Brownfields* seeks to introduce the site designer to site issues involving contaminated conditions, known as brownfields. Traditionally, brownfield remediation and site design have been two entirely isolated processes, but with an ever increasing need for brownfield redevelopment this topic has become an emerging area of practice. Russ seeks to blend these two processes to foster communication between the site designer and environmental professional which will inevitably result in a more cohesive and environmentally stable design.

Historically, the majority of my site has been used for the purpose of heavy industry, potentially leaving an area with contamination. To address any possible environmental contamination issues I need a basic comprehension of brownfield development.

Redeveloping Brownfields presents a broad look at the process of working with contaminated sites, ideal for my purposes. Russ explains the law and policy decisions that have historically played a role in brownfield development. Policy such as the Clean Water Act or Toxic Substances Control Act and regulations associated with NPDES programs are important topics to be aware of when dealing with brownfields. Further, *Redeveloping Brownfields* explains the process of site assessment, should environmental contamination be identified. Other topics that will be utilized for my project are chapters of storm water management and remediation practices, specifically phytoremediation.

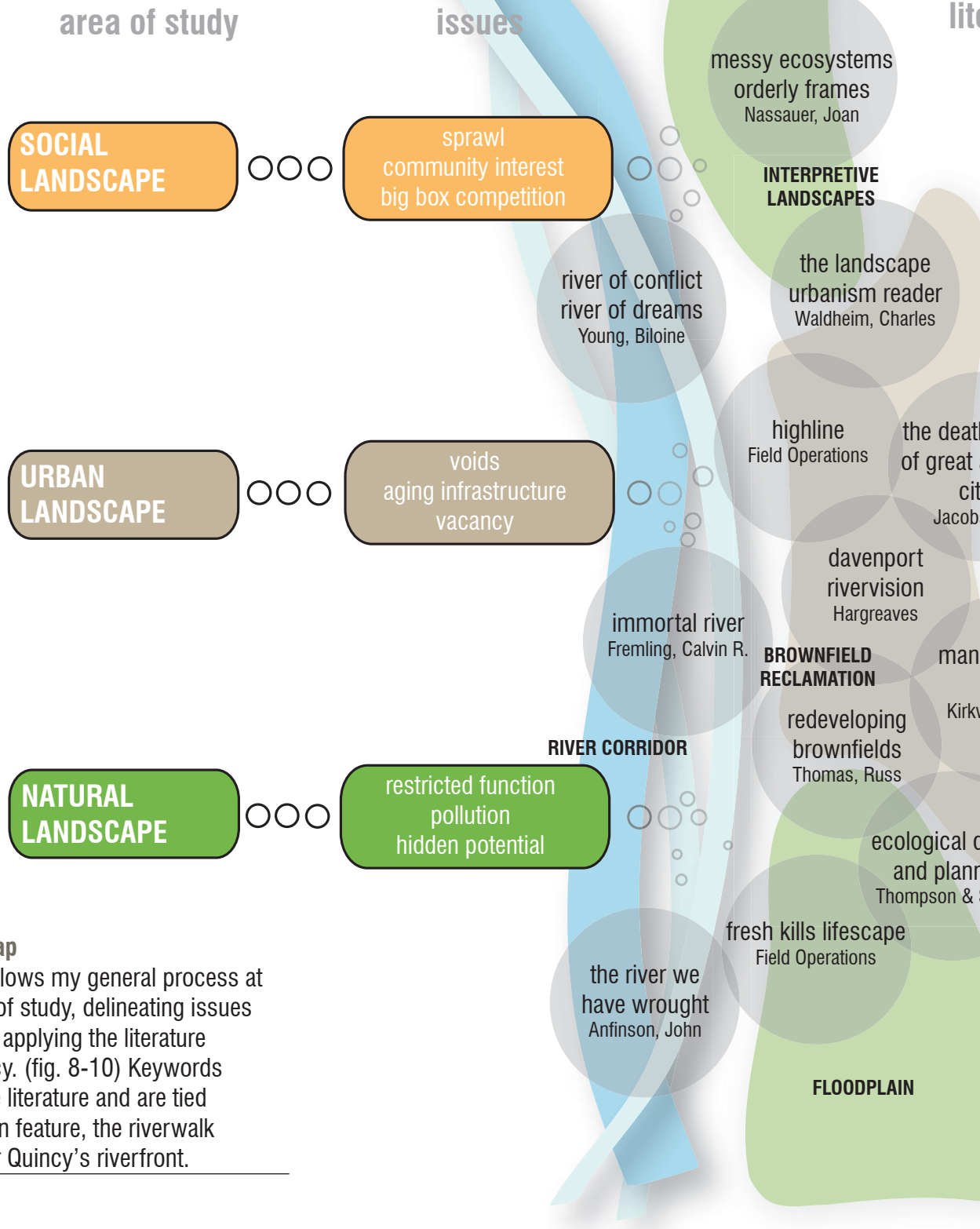
River of Conflict River of Dreams (2004)

Bilaine Young explores three hundred years on the Upper Mississippi beginning around when the first European settlers arrived. *River of Conflict, River of Dreams* explores mainly the social and cultural spheres shaped by the Upper Mississippi as the river valley was settled by early Americans and as an economy reliant on the river prospered, nearly vanished, and today prospers again.

The River We have Wrought (2003)

The River We have Wrought contains information that coincides with the preceding text *Immortal River*. However, John Afton's book does lend itself well as a supplemental source to Fremling's work.

Literature Map



Project Literature Map

This literature map follows my general process at identifying key areas of study, delineating issues within each area, and applying the literature to the site by relevancy. (fig. 8-10) Keywords are identified from the literature and are tied together by a common feature, the riverwalk which is proposed for Quincy's riverfront.

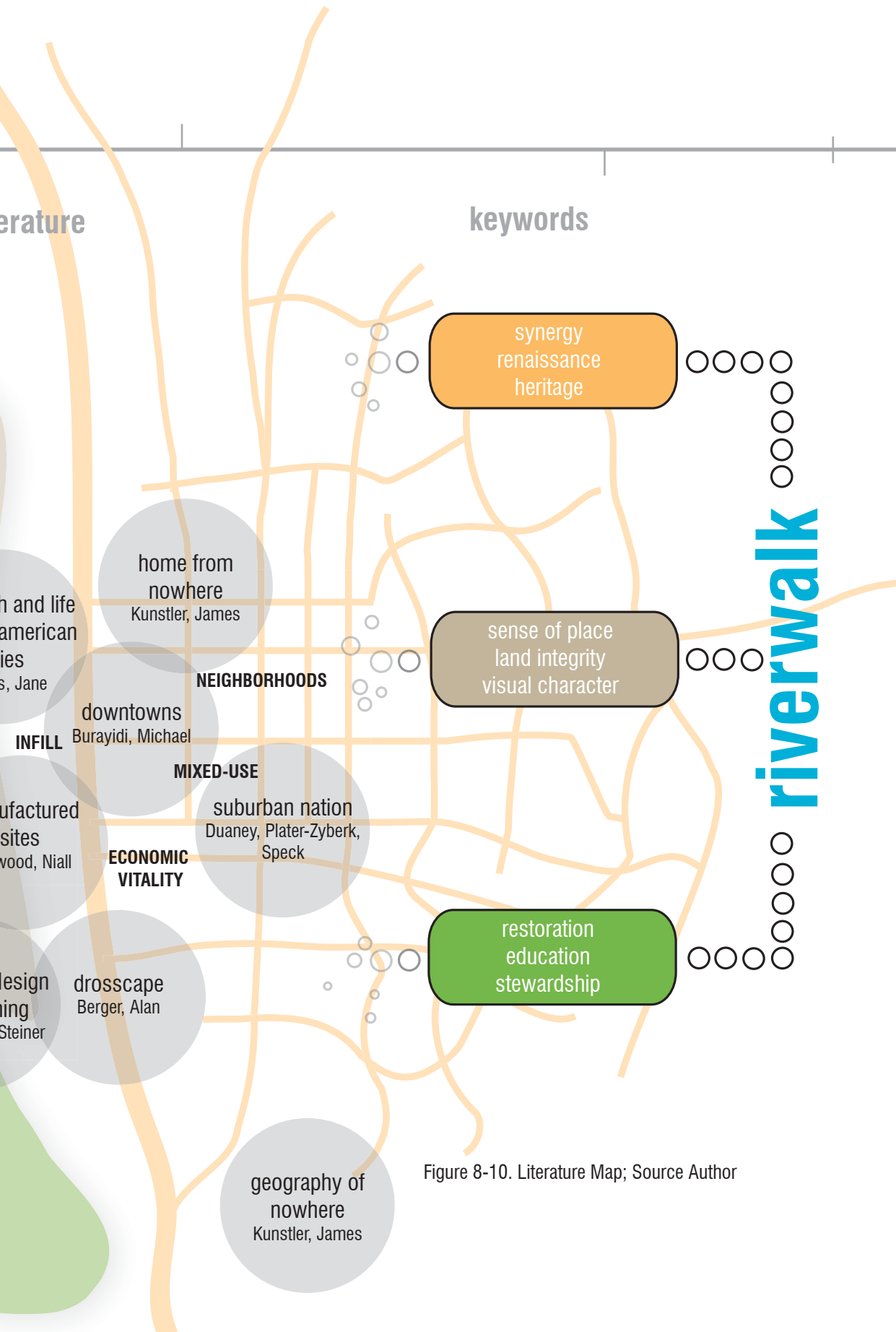


Figure 8-10. Literature Map; Source Author

Glossary

Barge- An important component of the river scene and movement of goods up and down a waterway. Barges are multipurpose with an enormous capacity. For example, a standard grain barge can carry fifteen hundred tons of soybeans. With cleaning a standard barge can interchange gasoline, oil, diesel fuel, coal, grains, and fertilizer. Petroleum and molasses products must be shipped in separate petroleum barges. A standard barge is 195 long and 35 feet wide while a petroleum barge is 300 feet long and 52 feet wide. A fifteen barge tow is equivalent to a 225-car freight train or nine hundred semi-trucks. (Fremling, 2005)

Brownfield- abandoned or underused industrial or commercial sites where redevelopment is complicated by real or perceived contamination; land with immediate potential for redevelopment. (Kirkwood, 2001)

Lock and Dam- Designed for navigation purposes. Twenty-nine lock and dams were constructed on the Upper Mississippi from St. Louis up to St. Anthony Falls in Minnesota as part of the nine-foot channel project begun in 1931 and ending in 1939. A dam is typically composed of a series of gates spanning midriver. An earthen dam then completes the distance across the river. The purpose of the lock is for moving cargo and boaters from one navigation pool to the next which rest at separate elevations. (Fremling, 2005) (fig. 8-11)



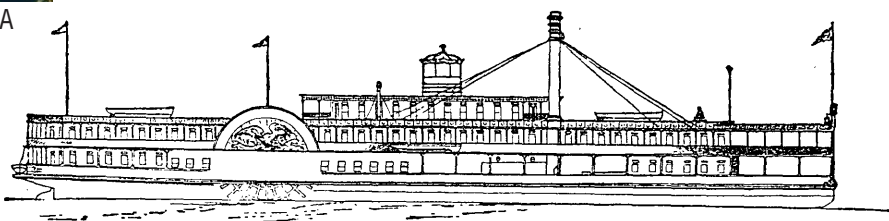
Figure 8-11. Lock and Dam 18 at Burlington, IA
Source: ACE

Navigation Pool- Pools created from the nine-foot channel project. This effectively allows tow transit up and down the Upper Mississippi, but has led to significant ecological damage in many of the backwater areas of the Mississippi resulting from flooding and dredging of the pools. (Fremling, 2005)

Steamboat- Historically known as passenger steamers or freight steamers. Steamboats were constructed of pine wood and designed to be light so that the flat bottomed hull would slide over the water and not plow through it; a necessary feature in the shallower, debris choked western rivers. Steamboats were powered by dangerous wood burning engines and later coal burning engines that turn a large wheel located to the aft, named the paddlewheel. Some boats were constructed with side wheels for easier maneuvering. Much care was made to shave off every bit of excess weight to allow for more cargo and faster travel, yet some steamboats provided luxurious accommodations for passengers traveling up or down the river. Steel constructed boats began appearing on the river after the Civil War but remained the minority until after the turn of the century. (Fremling, 2005) (fig. 8-12)

Tow- A tow is made up of a tow boat and its barges. (Fremling, 2005) (fig. 8-13)

Towboat- In response to large shipment capacities the steamboat evolved into the towboat. Typical Upper Mississippi River towboats are powered by two eighteen-cylinder diesel engines, producing 2,150 horsepower each. Two wheels (propellers) with a nine foot diameter move the ship up and down river. Lower Mississippi towboats must generate more horsepower due to the highly channelized river conditions. (Fremling, 2005) (fig. 8-14)



Side Elevation of Passenger Steamer.

Figure 8-12. Source: Quincy Public Library

Upper Mississippi River- In the early years of Americas history, access to the frontier was gained by traveling down the Ohio River to where it opened up into the Mississippi River near Cairo, Illinois. At this junction travelers had a choice of boating downstream to New Orleans or heading upstream to make the move out west. Thus both the Upper and Lower Mississippi River are precisely defined geographically and have been for more than 150 years. Some argue that the stretch of river between St. Louis, Mo and Cairo should be called the Mid-Mississippi River as the lack of locks and dams make it ecologically and physically different than either the Upper or Lower regions. (Fremling, 2005; Afinson, 2003)

Wing Dam- The purpose of a wing dam is to constrict the area through which the river flows while it is below flood stage, thus forcing it to scour the river channel deeper. Wing dams are constructed of readily available material which differs depending on where the wing dam is located. In the Upper Mississippi wing dams were typically constructed in layers of willow bundles weighted down with rock. (Fremling, 2005)



Figure 8-13. Tow complete with towboat and barges;
Source: Flickr



Figure 8-14. Towboat; Source: ACE

Appendix C: Additional Precedent Studies

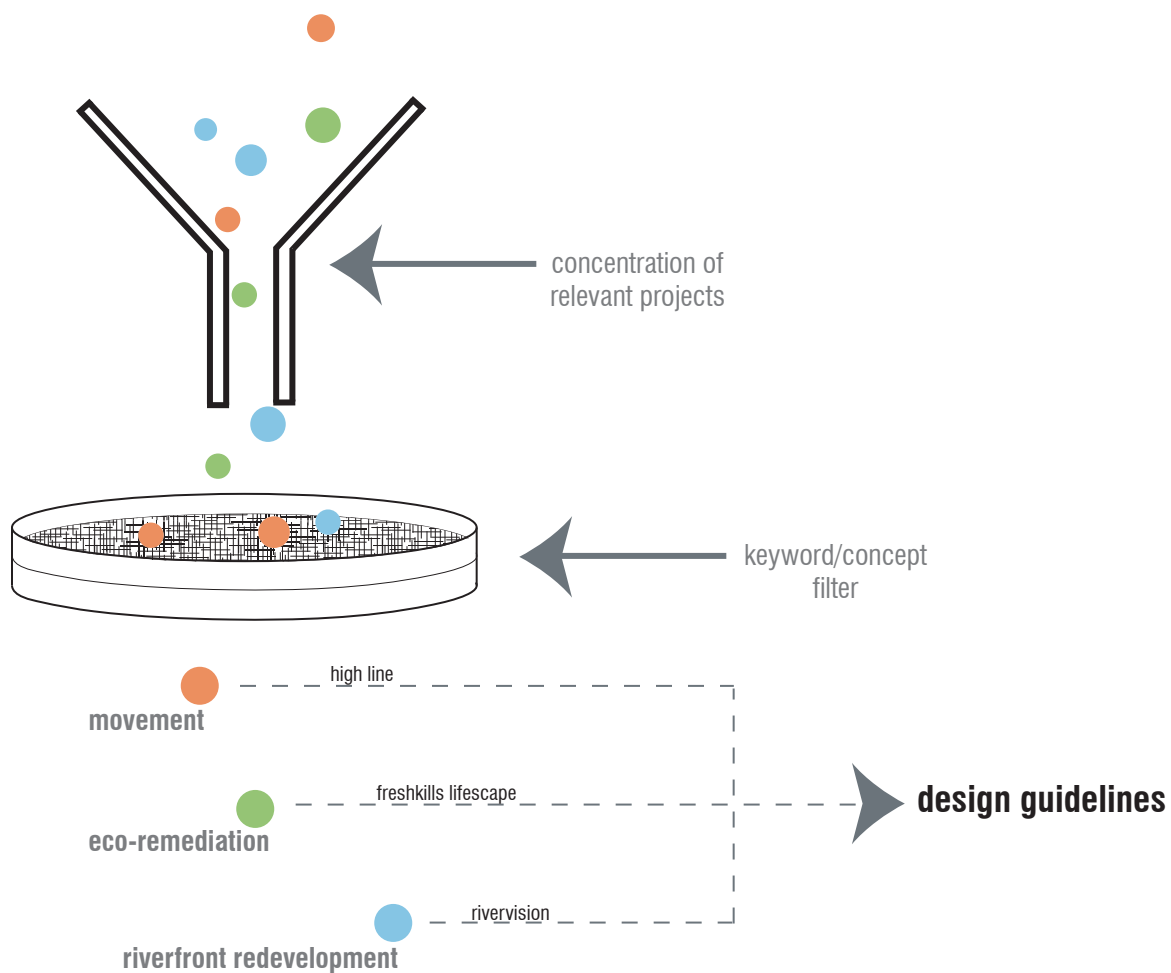


Figure 8-15. Precedent process diagram; Source Author

Rationale - The High Line

An aspect of riverfronts that requires study is how they promote linear movement through the landscape. (fig. 8-15 precedent process) The Mississippi River creates a defined edge, one that in many rivertowns is typically paralleled by walking paths, roads, rail lines, parks, historic downtown areas, or industry corridors. By promoting linear movement along the Mississippi, Quincy's riverfront can reinforce the rivers edge, allow users to experience different areas along the river, and move people from destination to destination. New York City's High Line, though not along a river, does serve as an exemplary case study in terms of linear movement through the landscape. (fig. 8-16 before and after)



Figure 8-16. Photos provided by Friends of the High Line.



Figure 8-17. Source: Field Operations.

Name: New York City High Line

Location: New York City, New York

Date Designed: Section 1 - April 2005 to June 2008 / Section 2 - presently under construction

Date Opened: Section 1 - June 2009 / Section 2 - projected 2010

Size: Approximately 1.45 miles in length / sixty foot width at its widest / 18 to 30 high

Selected Design Team: James Corner Field Operations
Diller Scofidio + Renfro
many experts of other disciplines

Client: Friends of the High Line / City of New York



Figure 8-18. Source: Field Operations



Figure 8-19. Source: Friends of the High Line.

Context: Located on Manhattan, NY's West Side, the entire High Line runs from Gansevoort Street in the Meatpacking District to 34th Street, between 10th and 11th Avenues. Section 1 runs from Gansevoort Street to 20th Street. (fig. 8-17 through 20)



Figure 8-20. Source: Friends of the High Line.

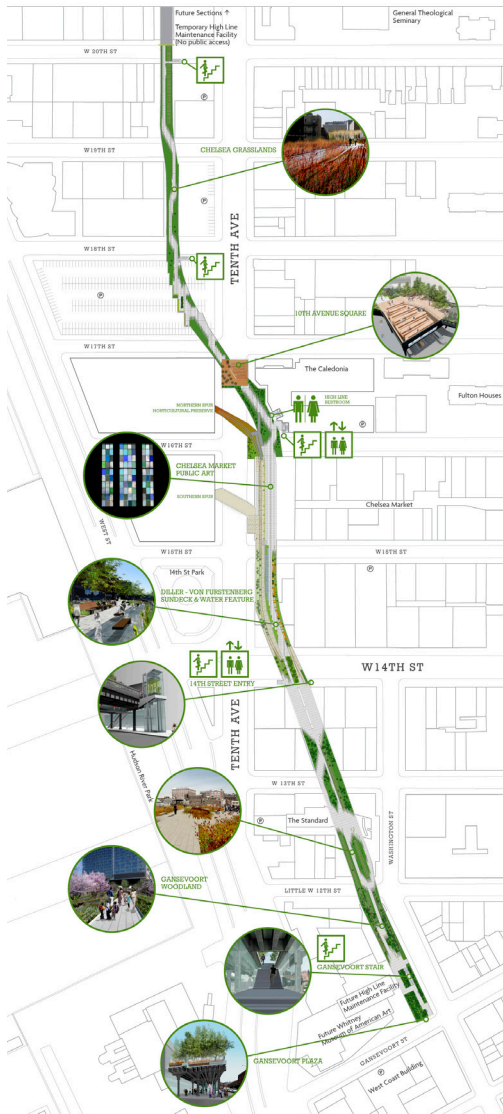


Figure 8-21. Source: Field Operations

Background: Built in the 1930s the High Line was meant to lift dangerous freight traffic into the air away from the streets in Manhattan's industrial district. The elevated railway ran for fifty years ceasing operations in 1980 and soon fell into disrepair as the tracks became a haven for plant life and graffiti artists. In 2004 Friends of the High Line held a contest to select a design team to restore and preserve the High Line. The selected team consisted of James Corner Field Operations (project lead landscape architect), Diller Scofidio + Renfro (architecture), and other various experts. The original proposal from the project team was 'Keep It' and in following with this concept the design of the High Line blended the wild native plant life with the cultivated. Echoes of its former use as a railway are evident in nearly every component of the design. To combat the rapid movement that can be associated with a narrow linear space the design team provided slowness by distraction through the presentation of other-worldliness which aids in preserving the distinct character of the High Line. Many users of this new open space are amazed to discover that just above a chaotic street it is remarkably peaceful and quiet. Many vendor locations are opening up along the High Line in conjunction with other retail businesses and residential developments. (fig. 8-21) Essentially, the High Line is a conveyance for linear movement as users travel from destination to destination above the hustle of the Manhattan streets. Figure 8-21 illustrates how the High Line is specifically designed to convey users from one destination to another. (fig. 8-22)



Figure 8-22. Source: Friends of the High Line.

Significance: The High Line is an example of an elaborate yet simple redevelopment project whose success was only possible through adamant public support and a design that examined the movement of the users through space. (fig. 8-23 interpretive program elements)

Sources:

Friends of the High Line

website - <http://www.thehighline.org>

address - 529 West 20th Street, Suite 8W · New York, NY 10011

phone - 212.206.9922

James Corner Field Operations

website - <http://www.fieldoperations.net/>

address - 475 tenth Avenue, 10th Floor · New York, NY 10018

phone - 212.433.1450 ext. 221



Figure 8-23. Source: Field Operations.

Rationale - Fresh Kills Lifescape

A key component in riverfront design deals with the ecological aspect of the river itself. The Mississippi River can be described as the dominating component in an expansive system of natural process which range from the river channel itself to the upper reaches of the Rockies and Appalachians. Throughout 19th and 20th centuries European settlers have been altering the Mississippi River and its subsystems to achieve control of flooding and channel depth to aid in the transportation of goods and disposal of waste. Other factors outside of the main channel include the 'reclamation' of floodplains for agricultural and industrial use, which are locked in a continual struggle with the Mississippi as the river attempts to adapt its flow. Many riverfronts have become blighted from industrial use and ill-managed landscapes which in several circumstances has lead to contaminated conditions of the land and river. Fresh Kills is a severely contaminated site with a strong ecological presence and will serve as a study of ecological adaptation and interpretive design of a dominate natural landscape.



Figure 8-24. Source: City of New York.



Figure 8-26. Source: Field Operations

Name: Fresh Kills Lifescape

Location: Staten Island, New York

Date Designed: Section 1 - June 2003 to Present

Date Opened: Under Construction

Size: Approximately 2,200 acres

Selected Design Team: James Corner Field Operations

Client: New York City and the Department of City Planning

Context: Located on the western shore of Staten Island, Fresh Kills Landfill is composed of four mounds ranging in height from 90 to 225 feet. The mounds are primarily the result of fifty years of household waste. The site is bounded to the west by Arthur Kill River to the north by manufacturing and to the south and east by residential, commercial, and parks. (fig. 8-24 through 26)

TODAY

mound-scape
engineering ground



3 YEARS

field-scape
manufacturing soil
and habitat



6 YEARS

open-scape
initiating access
and activity



10 YEARS

place-scape
building spaces



20 YEARS

event-scape
diversifying ecologies
and uses



30 YEARS

lifescape
growing new life



Figure 8-25. Source: Field Operations.

Background: Originally the dominant ecology of the Fresh Kills Landfill site was an intertidal marsh with small farms dispersed throughout the area. Fresh Kills began receiving waste in 1948 which continued until March 2001 and was also the final resting place for the debris and remains of the World Trade Center Towers and victims of 9/11. Over fifty years of waste from some of the fastest growing counties in the United States accumulated into four massive mounds, with highest estimated at 225 feet. Even during it peak operation in 1986-87 the natural processes of Fresh Kills were evident as systems, plant, and animal life adapted to the disturbed and contaminated environment. Presently, though not wholly natural, the site has adapted to form its own ecology of both tidal and freshwater wetlands, meadows, and forests. (fig. 8-27, 28)



Figure 8-27. Source: Field Operations

LAYERS OF FRESH KILLS lifecycle

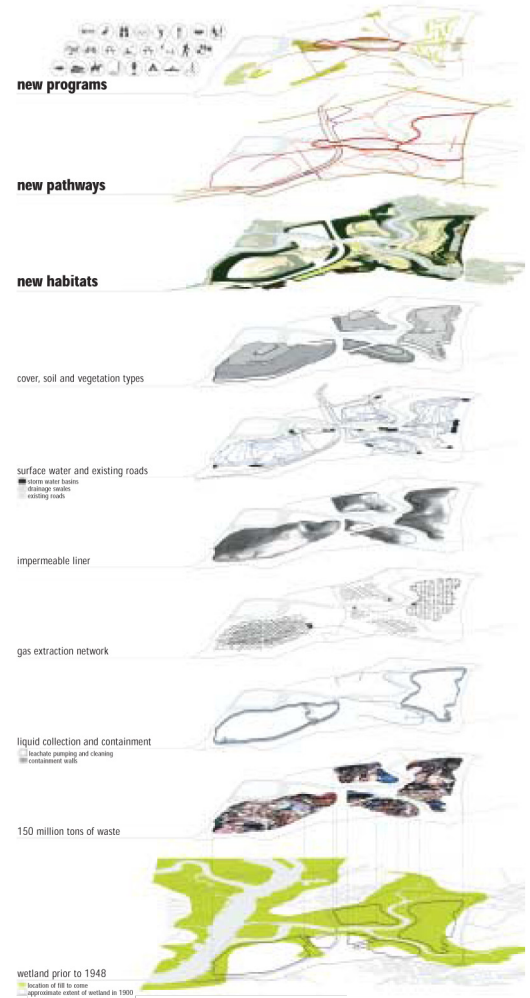


Figure 8-28. Source: Field Operations



Figure 8-29. Source: City of New York.

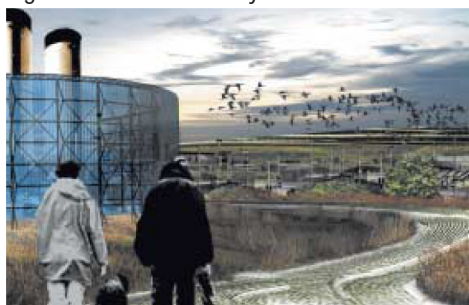


Figure 8-30. Source: City of New York



Figure 8-31. Source: City of New York

Significance: The design of Fresh Kills Landfill into a lifescape is a remarkable transformation of an adaptive ecological system integrating culturally diverse uses for the interaction of humans with the landscape in the form of activity, leisure, or reflection. (fig. 8-29 through 32)

Sources:

New York City Department of City Planning
website - <http://www.nyc.gov/html/dcp/html/fkl/fkl3.shtml>
address - 22 Reade Street · New York, NY 10007
phone - 212.720.3300

James Corner Field Operations
website - <http://www.fieldoperations.net/>
address - 475 tenth Avenue, 10th Floor · New York, NY 10018
phone - 212.433.1450 ext. 221



Figure 8-32 Source City of New York

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