

East Valley Gateway FaB District

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A SENIOR CAPSTONE PROPOSAL

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Figure 1.01 - Menomonee Valley Redevelopment Project

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Figure 1.02 - Historic Office Building

ABSTRACT

The Menomonee River Valley is a three mile long industrial corridor encompassing nearly 1,200 acres located in the heart of the City of Milwaukee and has largely contributed to the economic prosperity of the region.

In 1999, with the help of a Federal EPA Grant the Menomonee Valley Partners, Inc. was created to help sustain and organize a redevelopment plan throughout the valley. Since being established MVP has attracted some 38 businesses and more than 5,000 jobs evolving a devastated rustbelt product into a national model for sustainable urban redevelopment.

The primary focus of the Menomonee Valley Partners is that of five catalytic projects including the East Valley Gateway Food and Beverage District. The proposed capstone vision seeks to build off the foundation of providing a thriving urban industrial district and explore how integrating this into a waterfront setting can provide a social experience equitable to all.



Figure 1.03 - Author Photo

THE AUTHOR

My drive and passion for the profession of landscape architecture stem from my interest in construction, problem solving, and my overwhelming enjoyment of the outdoors. Being exposed to having a mother as an interior designer and a father as a civil engineer it almost seems fitting that I would find something that incorporates qualities from both professions. Discovering my passion for landscape architecture has been an adventure to say the least, but those experiences are part of why I am here today striving and learning to be something I truly love to do.

Christopher J. Jansen
Department of **Landscape Architecture**

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INTRODUCTION



Figure 2.01 - Menomonee Valley Redevelopment Project



INTRODUCTION

To fulfill the requirements of the Senior Capstone Program in the Department of Landscape Architecture at the University of Wisconsin-Madison I will investigate how ideas of Landscape Urbanism may inform the design of an urban food and beverage manufacturing district helping facilitate the East Valley Gateway economic vitality. This investigation will be given context and focus by the concerns and goals of the Menomonee Valley Partners Inc., which will include the design and development of an advanced stormwater management plan along with riverfront restoration. The 40 acre former heavy industrial district site is located in the Milwaukee Menomonee River Valley along a stretch of West Canal Street that will be the site for this study.

Research Topic: Landscape Urbanism Theory

The research topic explored throughout this senior capstone project will be the study of landscape urbanism theory. Using the design process as a driver this project seeks to understand how our city landscapes can become the central focus of future economic prosperity in our urban environments.

Current urban ecosystems are poorly incorporated into our regional cityscapes creating a significant disconnect between the social and environmental interactions necessary to providing a healthy diverse cityscapes. As landscape architects, we intend to bridge the gap between urbanism and ecology through the creation of cohesive outdoor spaces that provides evidence these two systems are capable of promoting interaction. In "Landscape ecological urbanism: Origins and trajectories," the author Frederick Steiner was able to express that through landscape ecological urbanism we will then have the economic and social capacity to incorporate the opposing conditions between ecology and urbanism into our future cityscapes. cities.

Type of Project: Urban Food and Beverage Manufacturing District

Over the last 25 years the Menomonee River Valley has become an underutilized economic and natural commodity that now has the potential to become a central catalyst for future development in



Figure 2.02 - Downtown Milwaukee Skyline Panorama

the City of Milwaukee. The pieces have been put in place, in the past 10 years the city has seen 39 companies with more than 5,000 jobs through city redevelopment efforts move into the Menomonee Valley. With hundreds of organizations and individuals already providing valuable insight into the continuing growth of the valley, along with the recent development proposal of the Menomonee Valley 2.0 plan, the East Gateway Food and Beverage Manufacturing District project can become a case study of the positive impacts landscape urbanism theory can have on cities.

Professional Focus: Advanced Stormwater Management and Riverfront Restoration

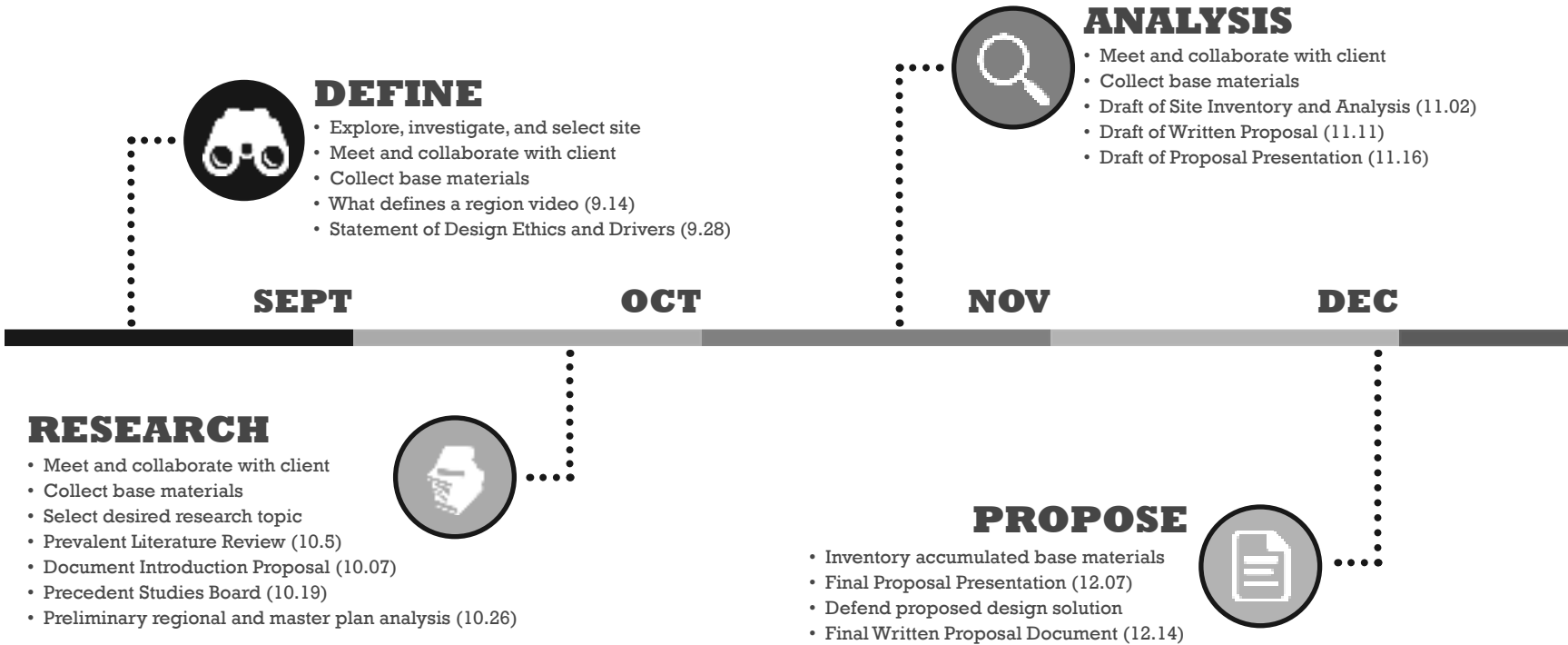
Combining the practice of stormwater management and riverfront restoration will allow for a thorough analysis on how to improve upon the key existing physical and environmental conditions of project site. Providing the Menomonee Valley Partners using the knowledge gained from these sustainable practices the negative environmental impacts of the surrounding infrastructure can be significantly reduced through various media. In order to address the

topic of riverfront restoration, innovative design solutions will be used to alleviate and restore the Menomonee Rivers natural ecosystem.

Design collaboration with the client as well as with peers and professors will provide an appropriate amount of insight that fulfills the client's goals and objectives.

Capstone Products

The products of this capstone will include a set of design documents and recommendations for the East Valley Gateway Food and Beverage Manufacturing district, which will be submitted to the Menomonee Valley Partners Inc., and a capstone document, which will be submitted to the Department of Landscape Architecture in partial fulfillment of the degree of Bachelor of Science in Landscape Architecture.



PROJECT WORKFLOW

The purpose of the project workflow diagram is to graphically illustrate the key estimated project components for the each semester. During the fall semester the design process focuses on developing a depth of physical, social, historical, cultural, and economic understanding of the site regions. Through research, analysis, and collaboration these elements are then organized into a preliminary design proposal for the client. The following spring semester the gained knowledge is channeled into the development of specific site designs. Following further stake holder input and critical deadlines the design process culminates to the synthesis of both semesters with the final project proposal.



DESIGN

- Meet and collaborate with client
- Proposal Literature Review
- Project Phasing development
- Conceptual Master Planning
- Design Site Scale Plan

FEB



FINALIZE

- Completion of Design Process
- Create Supportive Drawings
- Finish Graphic Visuals
- Practice Presentation

APR

MAY

REFINE

- Meet and collaborate with client
- Create Grading and Drainage Plans
- Design Planting Plan
- Site Specific Construction Details



SUBMIT

- Final Project Presentation
- Defend Proposal
- Final Comprehensive Report Document



Figure 2.03 - Workflow Diagram

With a population of 599,642 Milwaukee is the largest city in Wisconsin. Originally founded in the 1846 by Solomon Juneau and then later by Bryon Kilbourn and George Walker, later known as the founding fathers, the City of Milwaukee began to develop its place in history. Once the early 20th century rolled around Milwaukee had developed a national reputation of Germanism, Socialism, and beer. With the constant change in the global economic and social landscapes today Milwaukee still possess a unique community reflecting its cultural and diverse history.

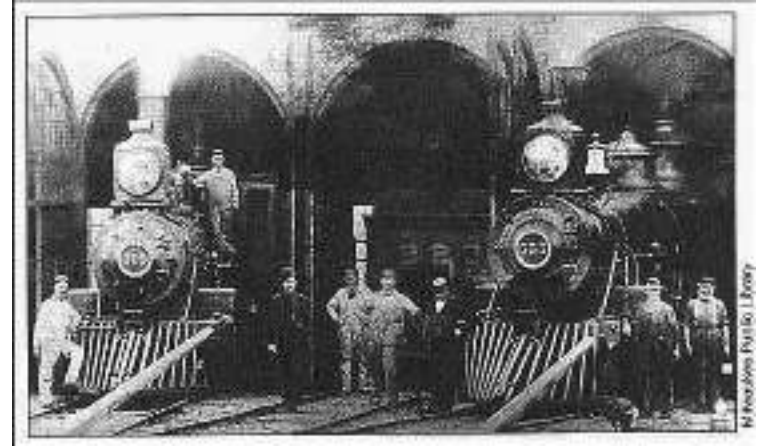


Figure 2.05 - Menomonee Valley Railroad Workers



Figure 2.06 - Historical Panorama of the City of Milwaukee, 1898

Menomonee Valley



Well before the first European settlement the Menomonee Valley was a wild rice marsh and home to American Indians. The word "Menomonee" is derived from the Algonquin "meno", (meaning good) and "min" (a term for grain or fruit). This wild rice called menomin flourished in the established native wetlands of the Menomonee River Valley. By the 1700s, the most significant tribe that resided in Southeastern Wisconsin region was the Potawatomi. Once European settlement had reached the Midwest region during the late 1800s the Valley provided a prime industrial corridor for the settlers. Large industrial entities like tanneries, breweries, stockyards, and railroad shops occupied the Valley by the end of the century. This transformation from a natural to industrial system illustrates the rapid growth of Milwaukee that displaced native peoples while introducing environmentally harmful industries.

By the end of the 19th century the Valley's bluffs were heavily occupied by some of Wisconsin's densest residential

Figure 2.07 - Native Americans in Menomonee Valley Wetlands

communities. With an accessible workforce and prosperous workflow, the Valley began developing into an industrial engine for the region. But, over the next half century, the Menomonee Valley witnessed a drastic decline in jobs going from 50,000 in the 20s, to around 20,000 during the mid-1970s, all the way down to a minimal 7,095 jobs in 1997. The loss of employment created a black hole of problems for the surrounding communities including a reduced tax base and pollution.

The 90s saw an emerging new desire for the Valley to be reconnected through amenities back into the community. With the implementation of projects like Marquette University's Valley Fields athletic complex, Potawatomi Bingo Casino, a new professional baseball stadium in Miller Park, and the completion of Hank Aaron State Trail this new connection started becoming a reality. While tremendous strides have been made in the redevelopment of the Menomonee Valley since the late 90s there is still room for improvement.



1937: With the automobile becoming a more stable means of transportation three north to south connections were constructed vital to the growth of Milwaukee.



1963: Even with the recent completion of Interstate 94 the primary focus of the Valley was still heavily on railroad and industrial manufacturing.



1980: While still maintaining a heavy reliance on rail and industrial manufacturing the rapid expansion of Interstate 94 has provided further accessibility via the automobile into the Valley.



2000: A newly implemented Hank Aaron State Trail runs along the Menomonee River, while in 1995 Marquette University completed the construction of its track & field complex along Canal Street.



2010: Since the start of the Valley's redevelopment projects the overall accessibility for both workers and visitors has greatly improved. With cohesive planning and development by the MVIC the Valley saw healthy growth during the latest recession.



2013: Recent attraction upgrades in the Harley Davidson Museum and Potawatomi Hotel and Casino the Valley is rebranding as an entertainment destination for people.

Figure 2.08 - Historical Context Photos

Vision and Goals



Stakeholders

The primary stakeholders involved in the project are the members of the Menomonee Valley Partners, Inc. (MVP), individuals from the Department of City Development, as well as those from the Menomonee Valley Business Improvement District. The combined mission of these two parties is to revitalize and sustain the Valley as a thriving urban industrial district for the greater good of the Milwaukee Community by advancing economically, ecologically, and socially. The individual stakeholders from these parties are as follows:

Corey Zetts

Executive Director
Menomonee Valley Partners, Inc.

Michelle Kramer

Director of Marketing & Business Recruitment
Menomonee Valley Partners, Inc.

Robert Harris

Department of City Development

Kurt Zimmerman

Zimmerman Architectural Studios

Stakeholder Vision

MVP's mission to revitalize and sustain the Menomonee Valley as a thriving urban industrial district that advances economical, ecological, and social equity for the benefit of the greater Milwaukee community.

We envision a thriving Valley with a well-balanced mix of industrial, recreational, and entertainment uses that strengthen Milwaukee economically, with strong companies and jobs near workers' homes; ecologically, with sustainable development and environmental stewardship; geographically, with renewed ties to surrounding neighborhoods; and equitably, with opportunities for all.

The plan for the East Valley is to create an urban food and beverage (FaB) manufacturing cluster, similar to the east end Menomonee Valley Industrial Center in size and scope - if not in contiguous acreage and ownership, and integrated into a waterfront setting with complimentary uses and amenities.



Figure 2.09 - Existing Conditions Site Photo

Client Goals

- Incorporate the cultural significance of the Valleys industrial past in the development of a modern manufacturing district.
- Develop an interconnected network of paths, trails, and bridges to create a linear greenway connecting into downtown.
- Provide public spaces for businesses that enhances social entertainment in combination with production of industrial products.
- Utilize the vacant space under Interstate 94 in developing a public space incorporating best management stormwater practices.
- Begin rezoning Heavy Industrial districts in the East Gateway to accommodate more light industrial land uses.
- Create a personal connection to the Menomonee River by integrating a public Riverwalk in coordination with a public recreational marina.
- Improve the natural aesthetic quality using native vegetation to help spur ecological growth

Personal Goals

- Maintain an active client relationship in order to accurately address their goals and concerns into the final site design.
- Examine numerous innovative design solutions using knowledge gained from research and analysis stage.
- Appropriately integrate personal design ethics in with clients desires to produce a successful refined final product.
- Effectively communicate the final design proposal utilizing multiple forms of graphic media tools.

Research Topic

Topic: Landscape Urbanism Theory

Landscape ecological urbanism: Origins and Trajectories

Steiner, Frederick. "Landscape ecological urbanism: Origins and trajectories." *Landscape and Urban Planning* 100.4 (2011): 333-337. Print

"New ideas about city design and planning are necessary because urbanization poses significant social and environmental challenges. As the number of people in the world increases in this first urban century, the percentage of those dwelling in large city-regions is also expected to increase. The consequences of continuing to develop as we have in the past are clear: energy use and greenhouse gas production for buildings and transportation systems increase; water and air pollution spreads; valuable habitat and prime farmland are lost; social issues, such as crime and poverty, are exacerbated."

I felt as though the article "Landscape ecological urbanism: Origins and trajectories" touches on key processes in how to use design to

allow for a more cohesive behavioral relationship between ecology and urbanism. Projects like the New York High Line and Toronto's Waterfront illustrate how using nature as a design tool can help enrich the quality of life for all city inhabitants. Landscape ecological urbanism is an approach discussed "that has the capacity to incorporate the inherent conflictual conditions between ecology and urbanism." Addressing and further understanding the processes generating the gap between these two landscapes will allow today's society to be educated and prepare future generations. The idea to fuse our urban ecosystems with our cityscapes will provide vital insight in order to propose a successful design solution for my Capstone Site.

Wasted and Reclaimed Landscapes - Rethinking and Redesigning the Urban Landscape

Bernardo, Secchi. "Section 1: Wasted and Reclaimed Landscapes – Rethinking and Redesigning the Urban Landscape." *Places* 19.1 (2007): 6-11. Print

"As human activities have spread over territories of unusual dimension, huge industrial zones, former military installations, and



Figure 2.10 - Harley Davidson Museum

outdated infrastructure—the sites of nineteenth- and twentieth-century modernity—are suddenly empty. The change has been particularly acute with regard to sites of industry. Many small factories within old areas of dense urban fabric have been abandoned, their activities spread to more peripheral areas or relocated outside Europe. Today many quarries, harbors, railways and canals—much of the infrastructural network accumulated over more than two centuries—have fallen into disuse. Such abandonment has had important impacts on employment, demographic growth, and the social, functional and symbolic geography of the city.”

This article “Wasted and Reclaimed Landscapes – Rethinking and redesigning the Urban Landscapes” talks about key issues regarding the physical and social environments of previously industrialized cities in Europe. Although far from my Capstone site the similarities in infrastructural abandonment with the City of Milwaukee, a once powerhouse manufacturing city, are analogous. With my site being in the heart of the once bustling manufacturing district the strategies and guidelines discussed in the article can provide valuable information in the development of innovative design solutions

Recovering Sustainable Water from Wastewater: Society no longer has the luxury of using water only once

Asano, Takashi and Levine, Audrey D. “Recovering Sustainable Water from Wastewater: Society no longer has the luxury of using water only once.” *Environmental Science & Technology* 38.11 (2004): 201A-208A. Web

“For water supplies to be sustainable, the rate at which water is withdrawn from water sources needs to be in balance with the rate of renewal or replenishment. At the same time, water quality must also be sustainable or recoverable. In nature, precipitation

replenishes surface water supplies and recharges groundwater. However, urbanization, agriculture, dams and reservoirs, and other shifts in land-use patterns are altering the rate, extent, and spatial distribution of freshwater consumption and replenishment. Therefore, water withdrawn for societal needs must also be considered a source in the sustainability equation.”

The article “Recovering Sustainable Water from Wastewater: Society no longer has the luxury of using water only once” discusses a key concern associated with my Capstone project. This idea that we need to start viewing water as a reusable resource is not only a necessity, but a wake-up call, because until recently water has commonly been viewed as something you flush down a drain. We have now been exposed to a world where we can no longer afford to not think of water as a commodity and a privilege. By having a major regional water resource border my project site, this ideology will provide an avenue to innovative and resourceful design solutions.

Project Context

Located in the heart of Milwaukee the Menomonee River Valley has largely contributed to the economic prosperity of the region. The Valley spans roughly 3 miles east to west and ½ mile north to south, encompassing a 1,200-acre area. The Valley is bordered on all sides by historic, cultural, and economic districts that have all made the Menomonee River Valley significant to the City of Milwaukee. Notable places include the campus of Marquette University to the north, the Silver City and Walker's Point neighborhoods to the south, iconic Miller Park (home to the Milwaukee Brewers) to the west, and finally the magnificent Lake Michigan to the east.

In helping sustain an organized development plan the Menomonee Valley Partners, Inc. (MVP) were created in 1999 from a \$200,000 US Federal EPA Grant. Over the next 15 years the organization worked alongside public and private sectors to implement the set forth plan. From this plan resulted 38 businesses moving or expanding in the Valley, with more than 5,000 new jobs created, 1,000,000 sq. ft. of sustainably designed buildings were constructed, and finally more than 60 acres of new trails and park space were developed.

Through the persistent work of MVP the Menomonee Valley is developing into a national model for sustainable urban redevelopment, and the East Valley Food & Beverage District will be the next catalytic project in the revitalization of the Valley.



**Potawatomi
Hotel & Casino**



**Harley Davidson
Musuem**



**Marquette
University**

Figure 2.11 - Project Context Photos





Marquette University

Downtown Milwaukee

Intermodal Train Station

Project Site Boundary

**Harley Davidson
Museum**

**WE Energies
Power Plant**

Figure 2.12 - Project Context Graphic

The Region



Figure 3.01 - Regional Context Graphic

REGIONAL CONTEXT

Milwaukee is the third largest city in the region with Chicago being the largest followed by Minneapolis. This however does not restrict Milwaukee from being a regional culture and industry hub.



MINNEAPOLIS, MN



MILWAUKEE, WI



CHICAGO, IL

Figure 3.02 - Regional Travel Time Graphic and Context Photos

SOUTHEAST WISCONSIN TRANSPORTATION HUB

The City of Milwaukee is the largest city in the state of Wisconsin and is located in the southeastern region of the state. It also has some of the busiest interstates running right through it, those being I-94, I-43, and I-41. These are the main blood lines to the heart of the city and back out into the suburbs where the majority of downtown users permanently reside. Providing appropriate connectivity and accessibility from these roadway arteries will be primary focus moving forward.

INTERSTATE 94



Figure 3.03 - Interstate 94 Site Photo

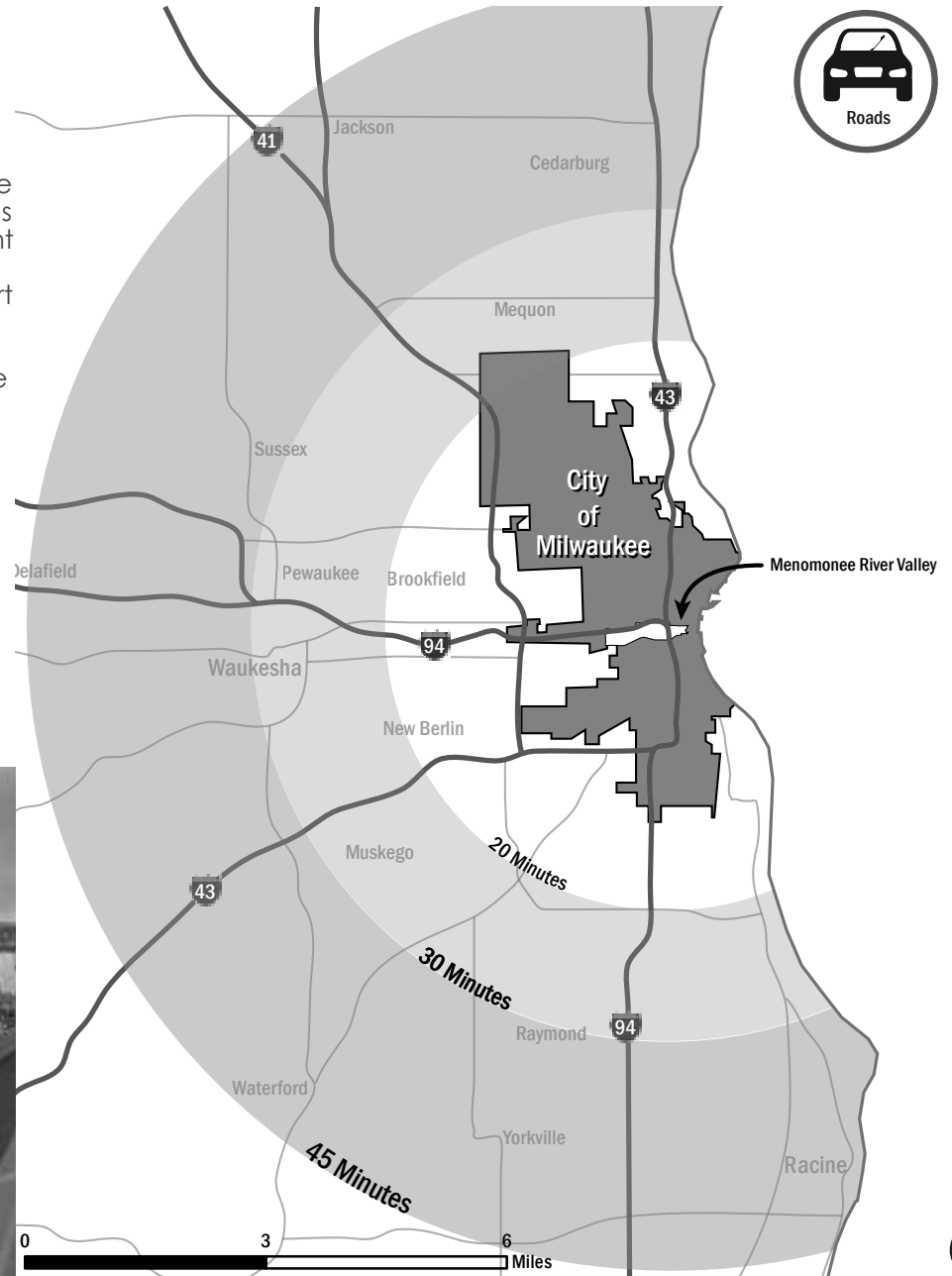


Figure 3.04 - Regional Roadway Map

MILWAUKEE COUNTY BIKE TRAILS

Milwaukee County's Bike network consists of a relatively fluid system with some major misconnections when it comes to within the downtown area. The primary accessible path resides along the lakeshore and other environmental corridors within the city limits. In the last decade the Hank Aaron state trail was implemented in the Menomonee River Valley and remains today as the only heavily urban designated bike trail. To improve on the lack of connectivity in the Valley via bike paths it will be a precedent to enhance this transportation mode greatly.

HANK AARON STATE TRAIL



Figure 3.05 - Hank Aaron State Trail Site Photo

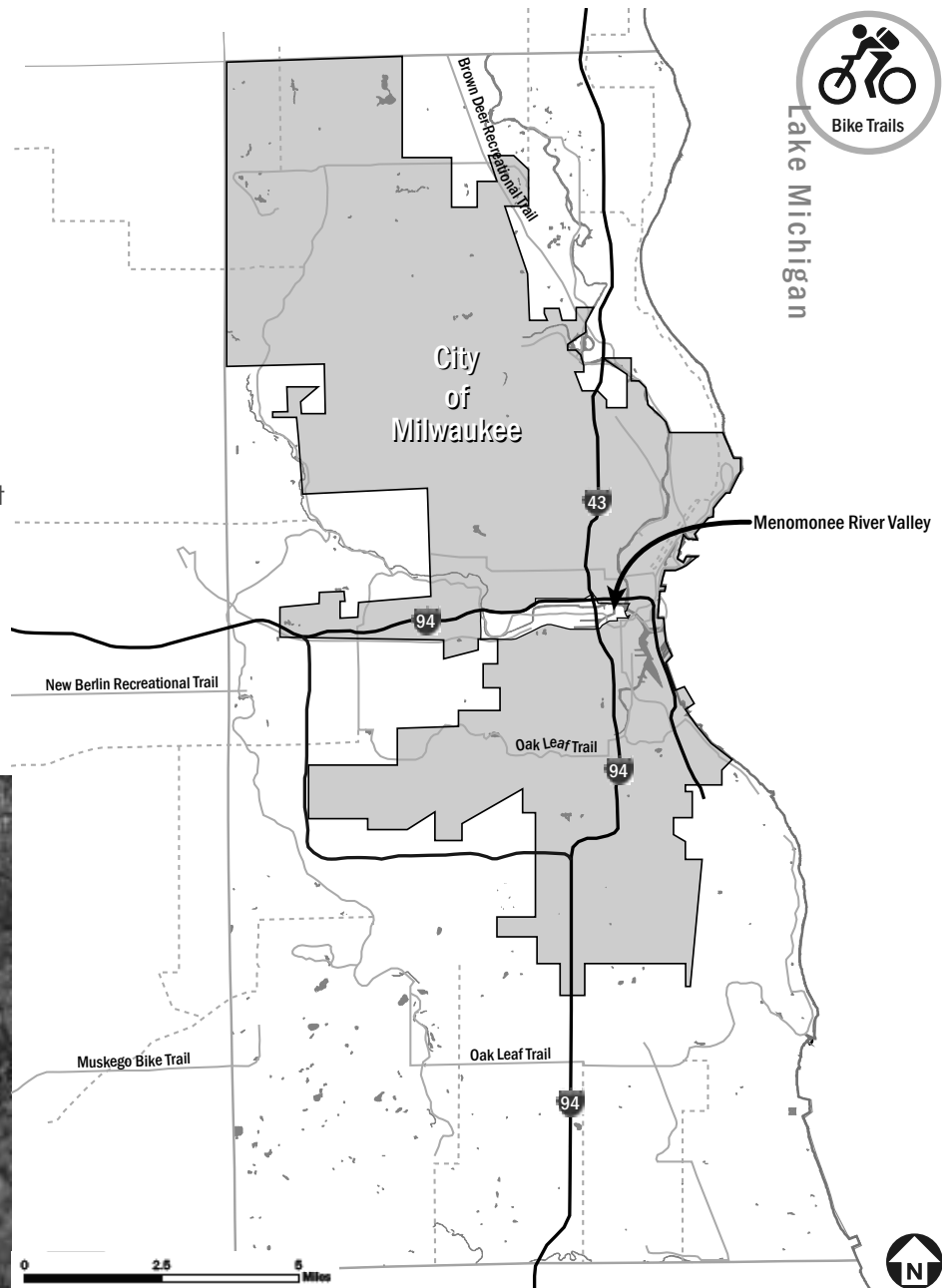


Figure 3.06 - Regional Bike Trail Map

MILWAUKEE COUNTY PARK SYSTEM

The county park system draws a very similar parallel to that of the bike trail network with in Milwaukee County. The vast extent of the county parks are located adjacent to major waterways taking advantage of the ability to engage with our natural habitats. Shifting focus to the downtown core there are next to no public green spaces, especially in the historic Menomonee Valley other than the newly constructed Three Bridges Park on the west end of the valley. Having a significant amount inadequate green space currently present can help develop future framework in shifting toward more landscape centric development.

THREE BRIDGES PARK



Figure 3.07 - Three Bridges Park Site Photo

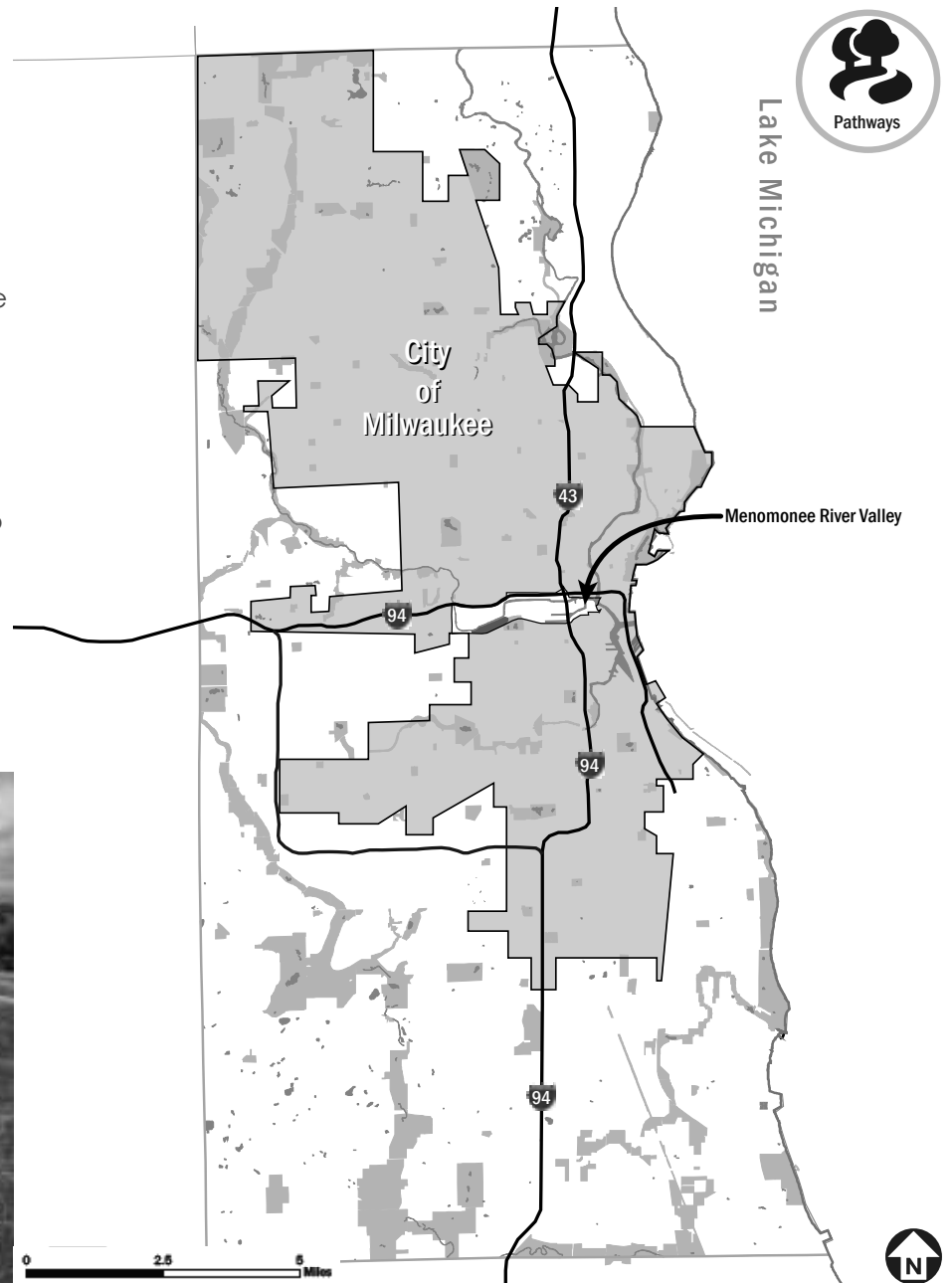


Figure 3.08 - Regional Parks Map

MILWAUKEE URBAN WATER TRAIL

The Urban Water Trail presents a unique way for the residents of Milwaukee and its adjacent communities to explore the waterways intersecting through the downtown region. Local establishments along the river provide accessible stop locations for those who care to explore the local food and culture of the city. Having the primary stopping locations in central part of downtown limits the connectivity and discourages individuals from utilizing other important waterways, like the Menomonee River. Expanding this dimension of travel and recreation west into the Menomonee Valley in correlation with further economic development will be key in providing a successful design.



Figure 3.09 - Three Bridges Park River Launch Site Photo

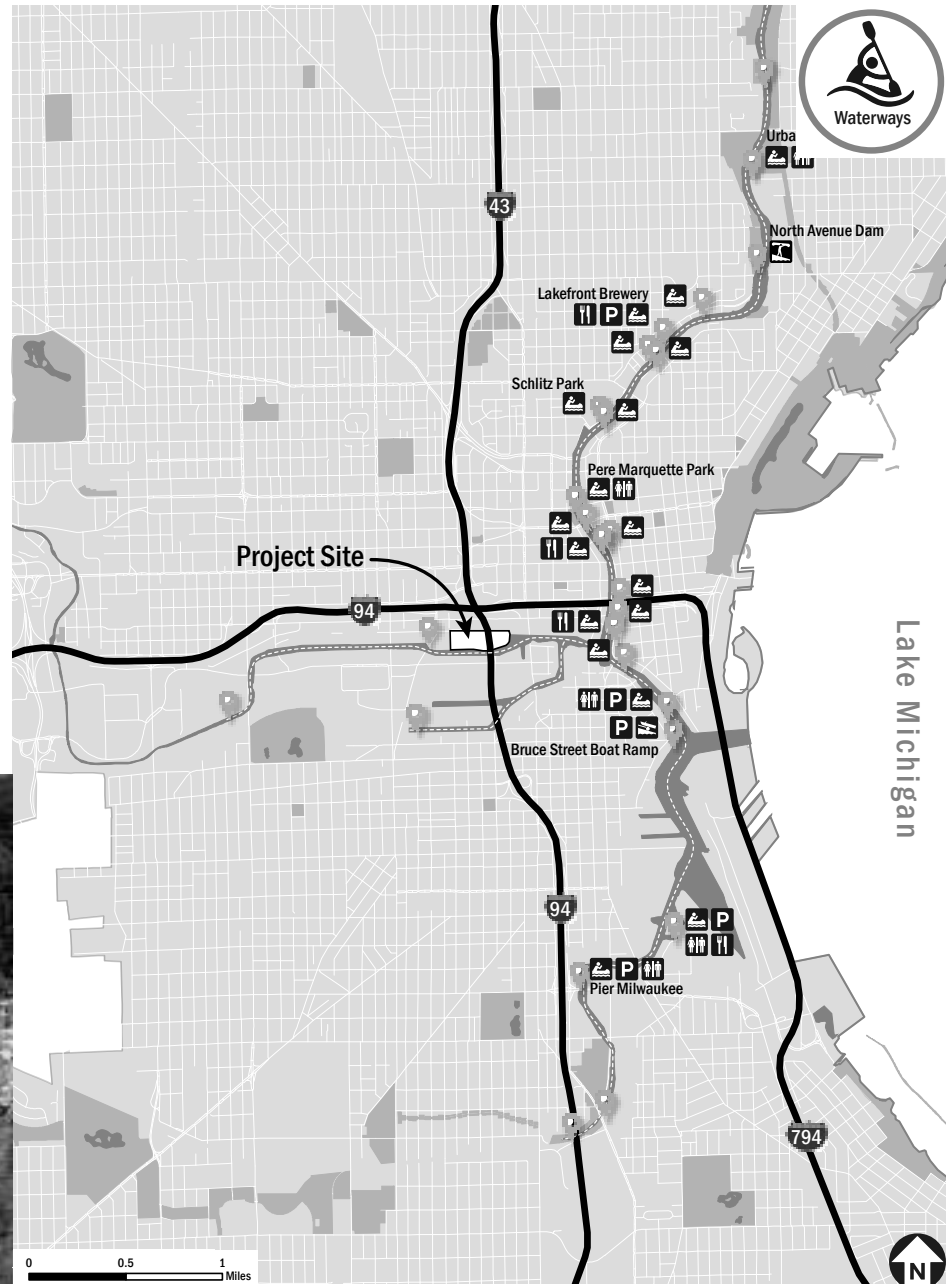


Figure 3.10 - Regional Urban Water Trail Map

MILWAUKEE COUNTY PUBLIC TRANSIT

Public Transportation is something that cities across the world struggle with to provide the most efficient and effective system possible. Milwaukee's public transit system currently provides adequate connectivity between the numerous communities encompassed in the city, but with a growing city comes change and that includes the public transit system. Overall the last couple decades there has not been any desire or need for one to go into the Menomonee Valley leading to where now there are minimal transit spots hindering the overall accessibility. Rethinking how we can strategically propose a more cohesive and flexible transportation system is something this project looks to build upon.

NORTH 16TH STREET



Figure 3.11 - North 16th Street Site Photo



Figure 3.12 - Regional Public Transit Map

The Community



Figure 4.01 - Menomonee River Valley Eastend

EXISTING LANDUSE

Due to the valley's history as a major manufacturing district the valley is currently in a state of identifying itself again in the age of modern technology. Having said that with rail corridors and manufacturing industries still prevalent the valley is maintaining its original core values as a manufacturing engine for the region. Because of this heavy dependence on manufacturing and the crippling of the economy over the years there has become a significant amount of unused land which is the current state of the project site. Future design strategies should look to develop a master plan utilizing urban open space as the primary driver.

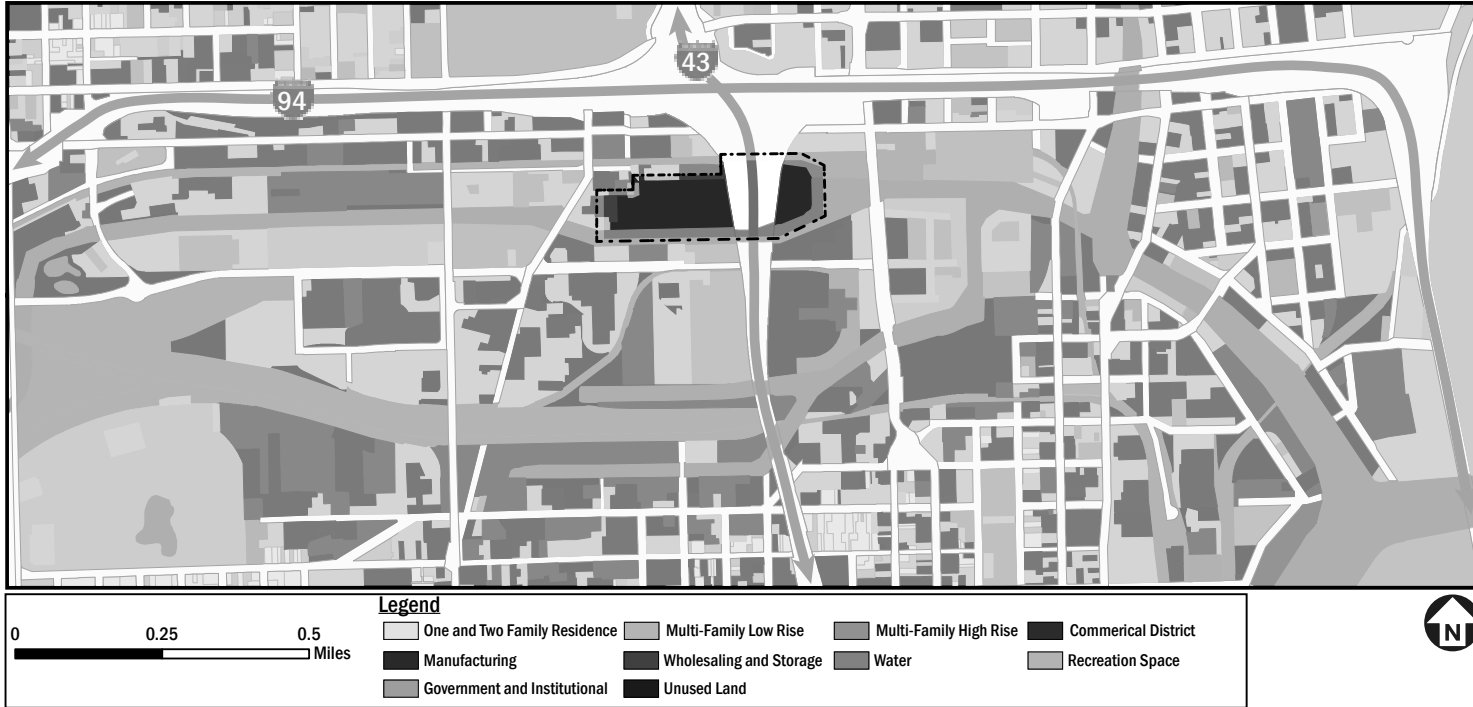
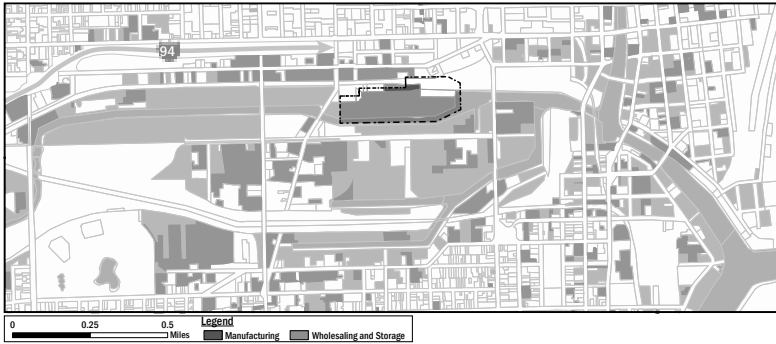


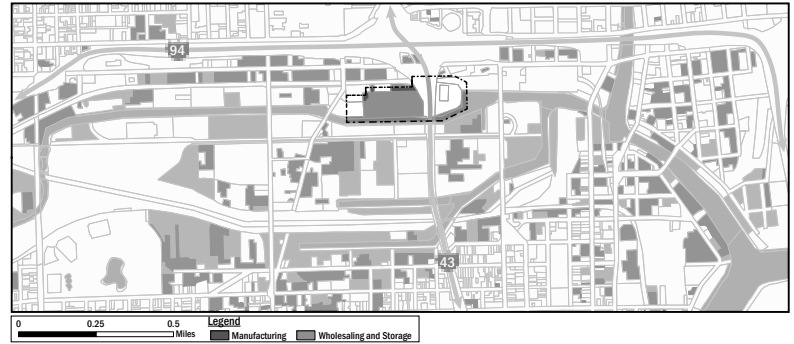
Figure 4.02 - Existing Landuse Map and Project Site Photo

MANUFACTURING LANDUSE

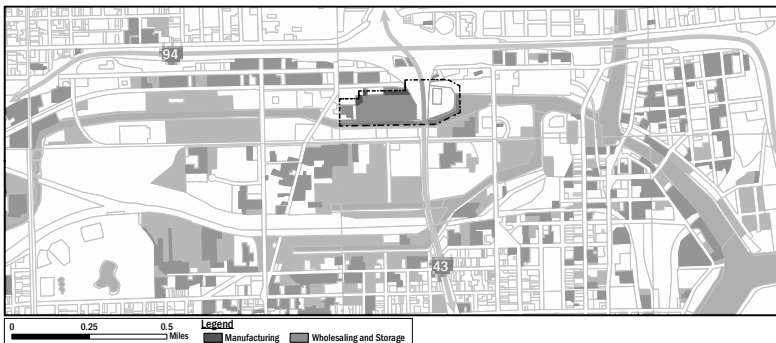
The City of Milwaukee was built on the foundation of industrial manufacturing and because of the complete investment into industrial sector it has held the successfulness of the surrounding communities in the palm of its hand for a century. Displayed in the maps below is the gradual decline over the last half century of manufacturing and storage facilities on the east end of the Menomonee Valley.



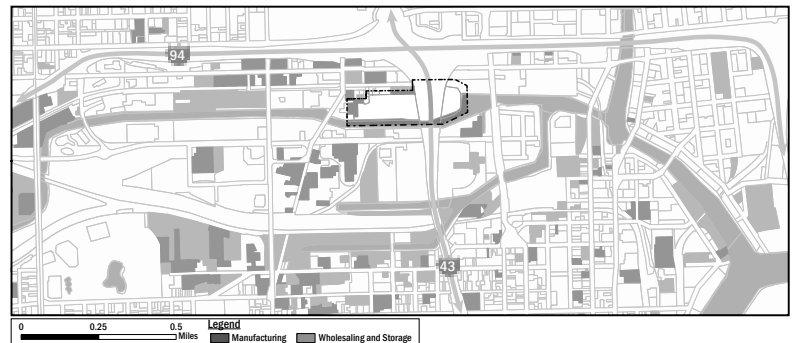
1963



1980



1990



2010

Figure 4.03 - Manufacturing Landuse Maps

MEDIAN HOUSEHOLD INCOME

The map below is displaying the median household income in communities adjacent to the east side of the valley. It is shown that the Menomonee Valley is acting as a socio-economic divider between communities of drastically different incomes. Neighborhoods such as Juneau Town and the Historic Third Ward present a much higher economic status than those residing in the Avenue West or Walker's Point neighborhoods. It can be concluded from this that the valley is setup perfectly to develop into the connection needed to bridge the gap between them.



Figure 4.04 - Median Household Income Map

RACIAL DIVERSITY

Building off this idea that the Menomonee Valley acts as a socio-economic divider between communities, the map below showing the racial diversity in the adjacent areas only reinforces it. The City of Milwaukee is constantly ranked as one of if not the most racially segregated cities in the nation and it is displayed in full here in this map. The key moving forward into the design development stage will be promoting strategies in order to allow for these communities to be brought together.

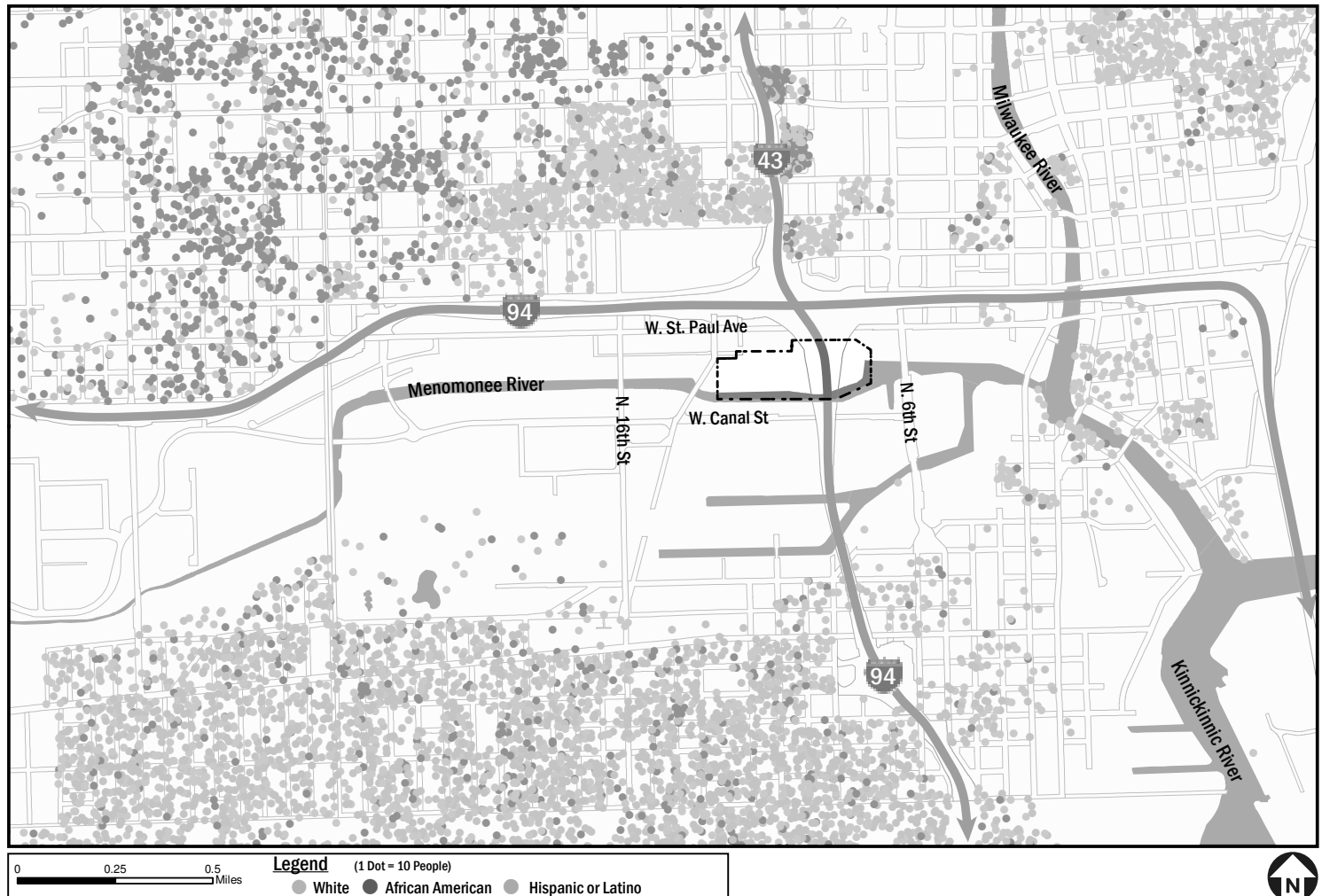


Figure 4.05 - Racial Diversity Map

The Site



Figure 5.01 - Three Bridges Park

SITE CIRCULATION MAP

The site is in close proximity to a variety of vehicular, bike, rail, and waterway corridors with a separation in accessibility and connectivity between each of these systems. It begins with St. Paul, North 6th, and Canal St all being main arterial roadways, but because of the lack of connecting streets and a major rail corridor the site is detached from these roads. Some other notable corridors are the Hank Aaron State Trail which runs the entire length of the valley, and the Amtrak Rail Line along the northern boundary of the site connecting to the Intermodal Train Station to the west. With these systems comes conflicts and the first being the lack of accessibility from both Mt. Vernon Ave and North 6th, followed by the non-existent buffer zone between the rail corridor and the site boundary. Improving the connectivity and accessibility of these corridors promotes the potential for becoming a destination at all levels.

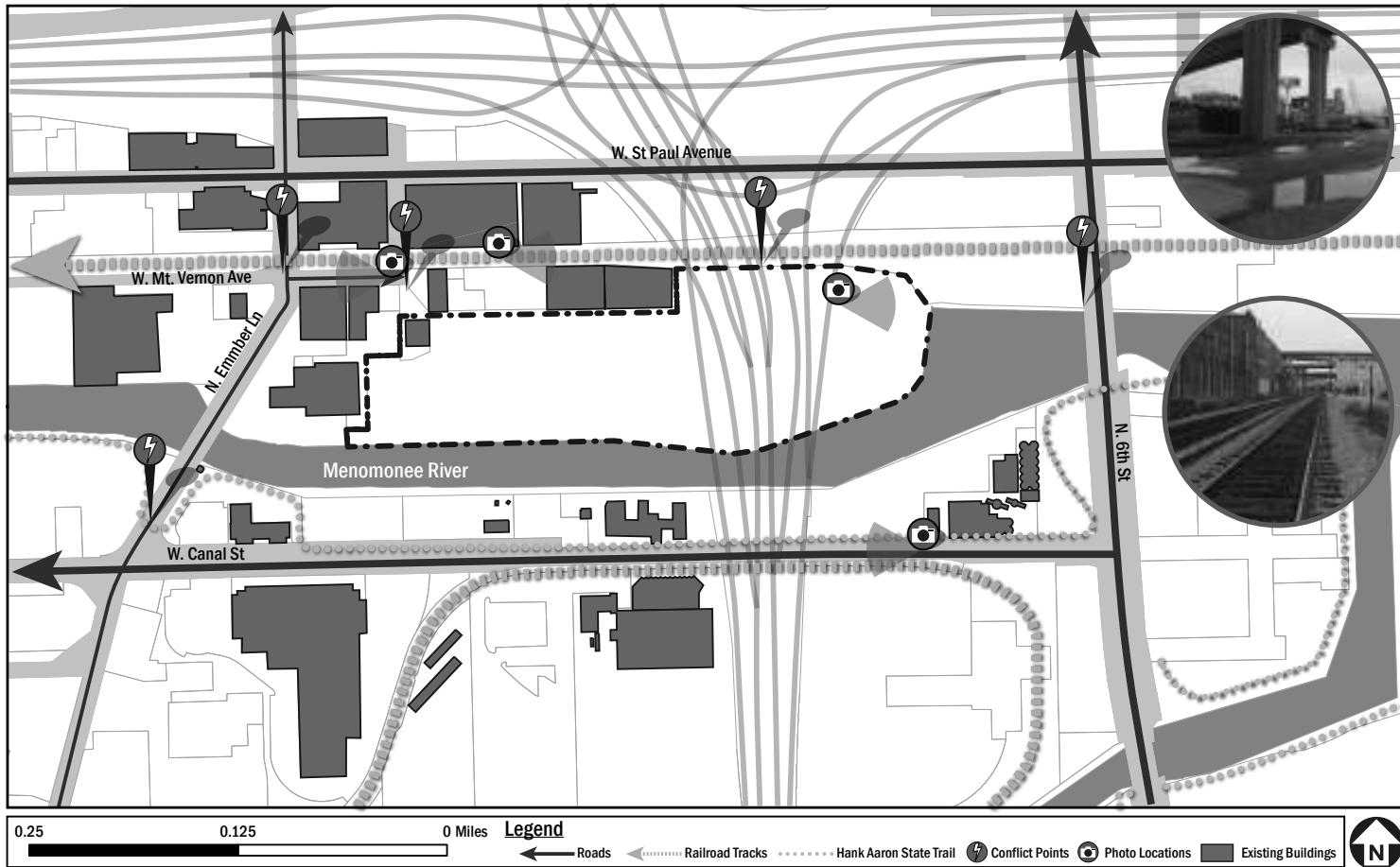


Figure 5.02 - Circulation Site Photos

Figure 5.03 - Site Circulation Analysis Map

EXISTING TOPOGRAPHY

A large portion of the site is consisting of some significant changes in topography. To the west, as seen in the section drawing, there is a large raise area with a relatively flat surface a top. Then on the east end of the site there is a considerable amount of grade change, presumably being leftover fill material from the Interstate 94 project in the previous years. Having an surplus amount of fill material on site presents an opportunity in creating designed landforms in helping shape the potential opens spaces of the site. These two hills are intersected by a flat open space under enough I-94 setting up for potential green space going forward into design strategies.



Figure 5.04 - Topography Site Photos

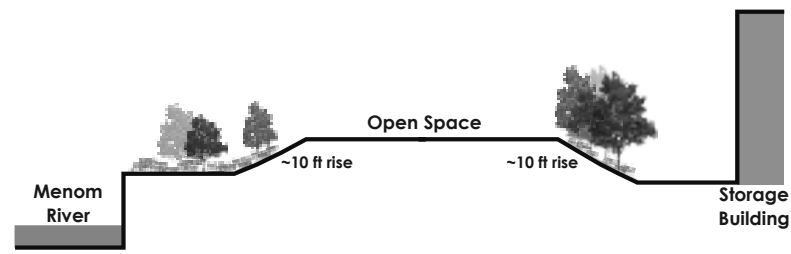
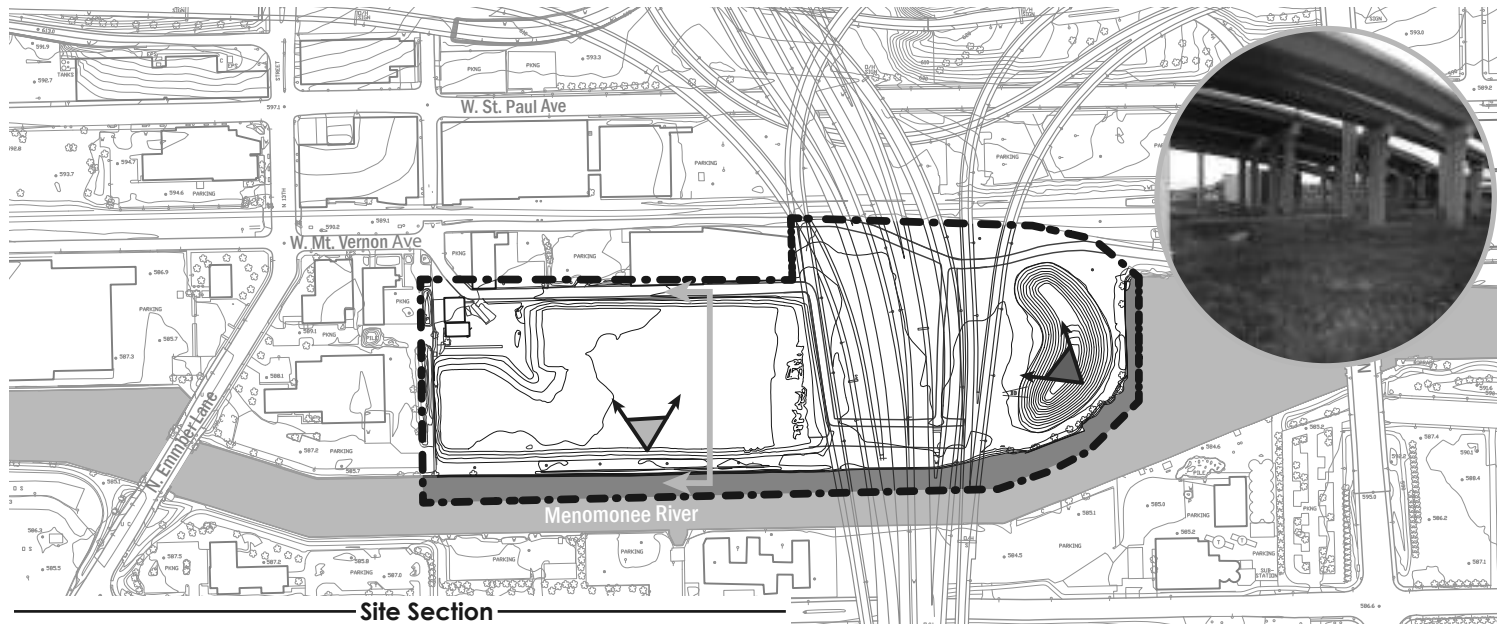


Figure 5.05 - Topography Section Graphic

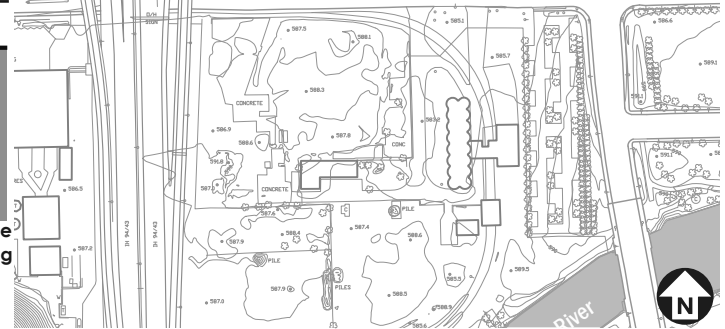


Figure 5.06 - Topography Analysis Map

FLOODPLAIN ANALYSIS

Current existing conditions may suggest that flooding occurs on the site and adjacent properties, but after analyzing the designated floodplain levels along the river corridor is in little to no risk of any level of flooding occurring. Displayed below in the map is the floodplain, 100-year flood, 500-year flood, along with site photos to provide more context on the existing conditions of the river. The little risk that does present itself to the site is immediately east and with this understanding can hopefully open up potential naturalization design strategy opportunities looking ahead in the design process.

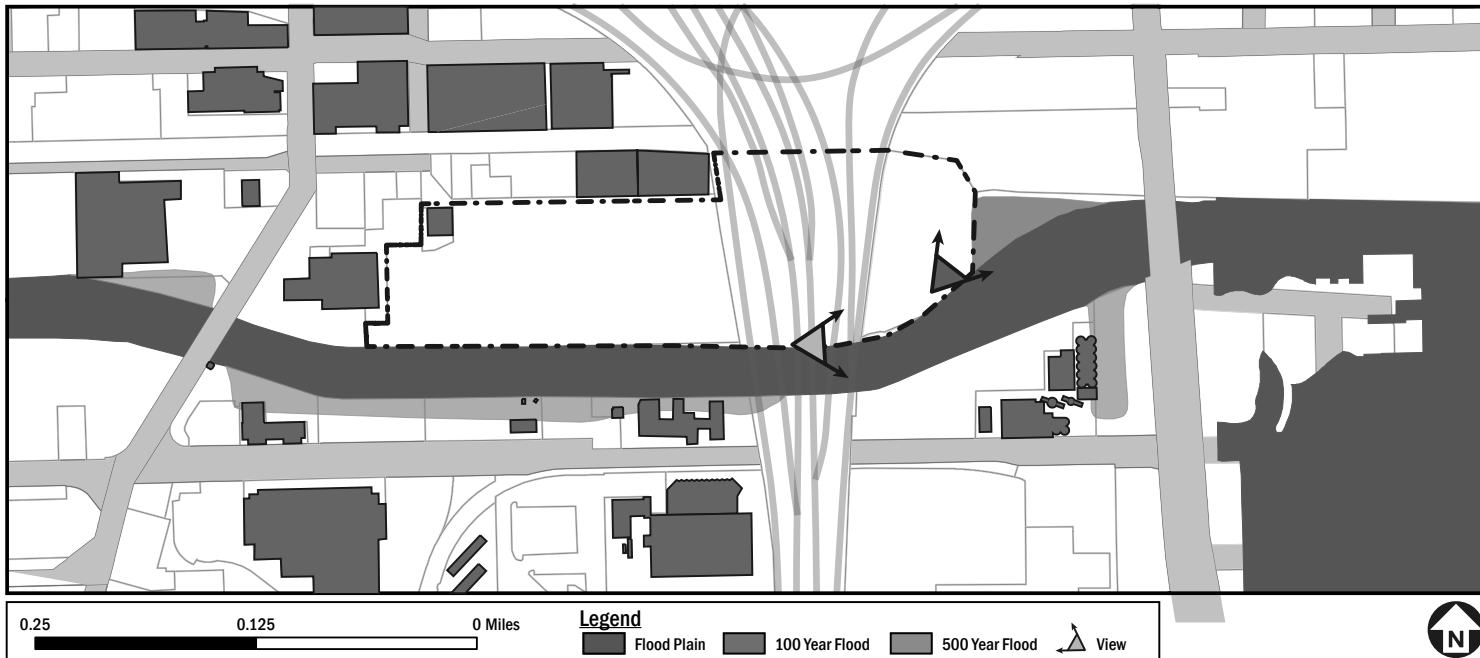


Figure 5.07 - Floodplain Analysis Site Photos

Figure 5.08 - Floodplain Analysis Map

SITE HYDROLOGY ANALYSIS

The existing hydrology process on the site presents some challenges but at the same provides opportunities for solutions moving forward in the design process. As talked about in the topography map there are two considerable raised areas of the site on opposite ends creating a slight natural swale between them leading out to the river's edge. As seen in the graphic below, after a rainfall the water then flows down into stormwater drains, but because of Milwaukee's combined sewer system this can lead to overflows into our bodies of water causing serious environmental problems. As presumed the high points reside on top of this hills while the low points are located along the river to the south and to the northwest. With the northwest corner potentially developing into a main entrance point minimizing water flow to this area will be essential to providing a functional design. An opportunity that presents itself is the ability to collect stormwater along the river's edge and reduce the impact of runoff from the site.

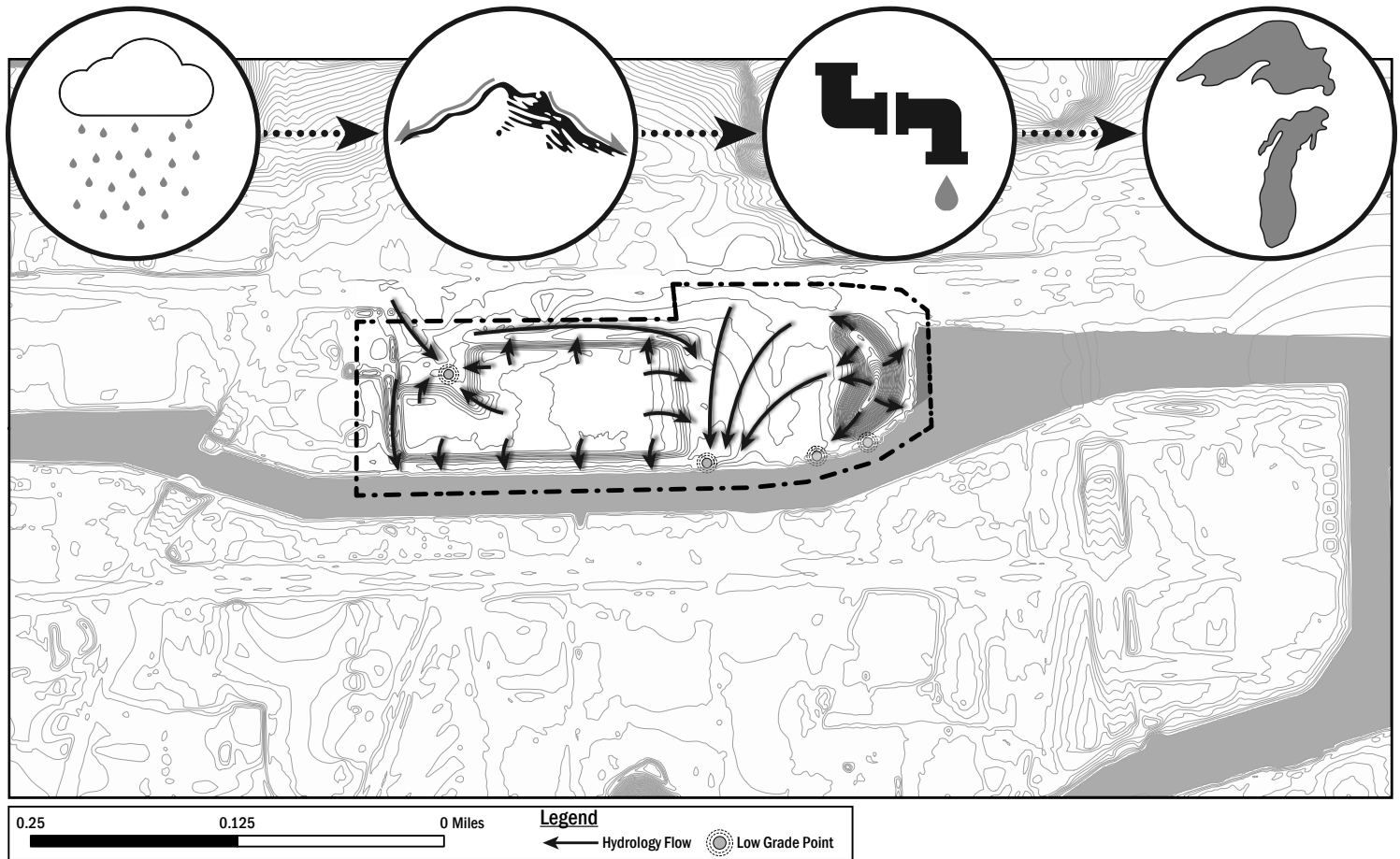


Figure 5.09 - Existing Hydrology Graphic

Figure 5.10 - Hydrology Analysis Map

HABITAT IMPROVEMENT ZONE

Due to the river's past history it has been engineered for optimal functionality and efficiency while throwing its natural appeal to the wayside. This has resulted in large portions of the Menomonee River becoming long linear waterways and reducing the positive ecological impact these ecosystems have on our natural habitats. Represented in the circled area below are those in need of improvement and as you can the entire river corridor bordering my site and then some is in need of heavy habitat improvements. Looking ahead efforts should be made to revitalize the naturalization of the river corridor, using floating wetlands and native plantings, in hopes to provide appropriate habitats promoting ecological biodiversity.

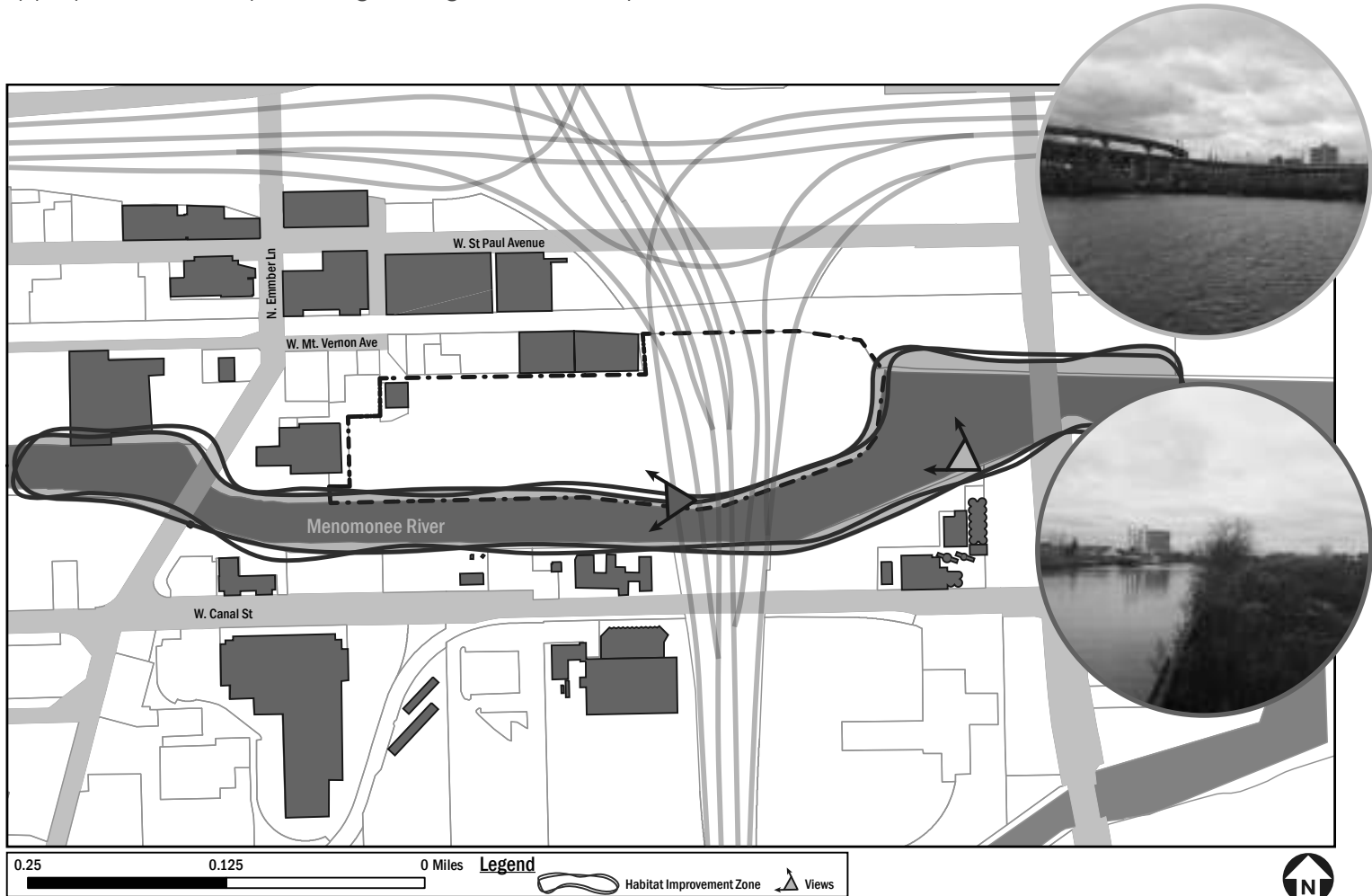
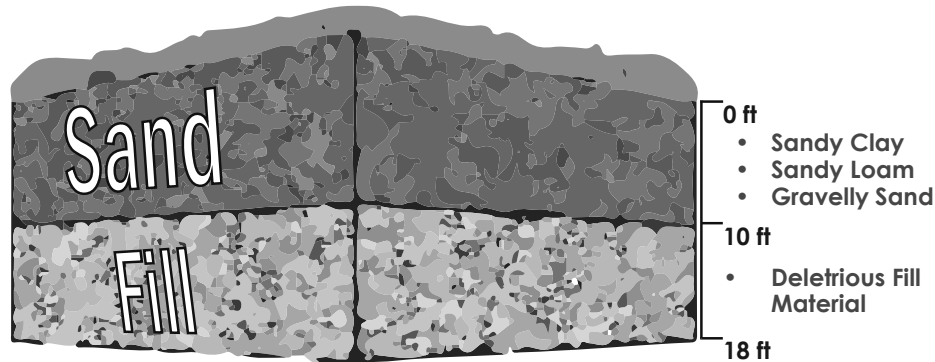


Figure 5.11 - Habitat Improvement Site Photo

Figure 5.12 - Habitat Improvement Analysis Map

SOIL SUITABILITY ANALYSIS

The soil suitability of the site is critical in determine facility locations during the design process, and because of a lack in properly gathering information on soil data in the Menomonee Valley a challenges arises in determining the soils present on the site. After obtaining a geotechnical report of a nearby site a rough estimate of the soil types was made with a large portion consisting of sandy soils while the other half was referenced to as "deleterious fill material". These findings lead to the conclusion that the existing soils may not be suitable for all types of facilities, and only meet two of the qualities observed during the analysis process. However, there are site preparations that can be made in order to appropriately stabilize the soil material to allow for future site design strategies.



Site Soil Qualities



Infiltration



Structure



Compaction



Moisture Content



Drainage



Organic Material



Figure 5.13 - Soils Site Photos

Figure 5.14 - Soil Suitability Graphic

Design Strategy



Figure 6.01 - People Kayaking Menomonee River

Precedent Studies

REED STREET YARDS

Project Name: Reed Street Yards

Location: Milwaukee, Wisconsin

Firm Name: Kahler Slater Architects and Sigma Engineers

Size: 17 acres

Built: 2015

Excerpt from Abstract:

The Reed Street Yards is an evolving eco-industrial zone, balancing natural resources and economic development. Key features include a system of urban bio-swales and rain gardens, a “purple pipe” for grey water recapture, demonstration and educational projects integrated with the Menomonee River, historic brownfield reclamation, and high expectations for green building achievement.

Capstone Connection:

The development of Milwaukee's Water Research and Manufacturing Hub sets an essential precedent for stormwater management practices, commercial construction, and economic improvement. Although the size and scope of the project exceeds that of my capstone master plan vision for the Menomonee River Fab District it helps construct a case that commercial infrastructure can impose a positive impact on the surrounding environment all while promoting future economic growth.

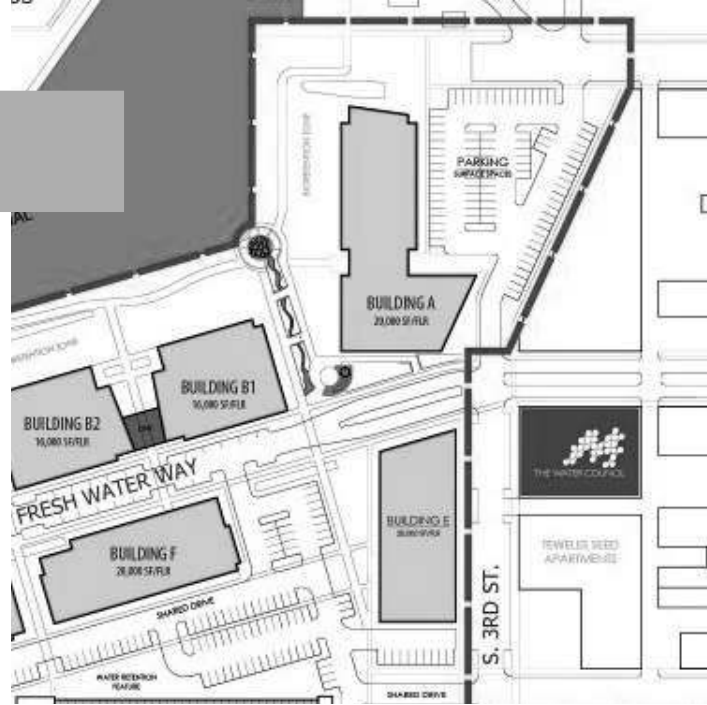




Figure 6.02 - Reed Street Yards Precedent Photos

Precedent Studies

JOHN WHITTON BRIDGE

Project Name: John Whitton Bridge Open Space

Location: Rhodes, Sydney, NSW

Firm Name: OCULUS

Size: Unknown

Built: 2013

Excerpt from Abstract:

Located on the shores of the Parramatta River at the northern end of the Rhodes Peninsula John Whitton Bridge Open Space provides a contemporary multi-functional open space under the historic John Whitton and Meadowbank pedestrian and rail bridges that links between the east and west sides of Rhodes. The design of the public open space for the John Whitton Bridge project creates a simple spatial structure which seeks to provide maximum community benefit and cater for a wide range of recreational opportunity and flexibility.

Capstone Connection:

OCULUS's approach of public open spaces displays a critical precedent in finding the balance between integrating urban public open space into a historically culture rich community. This will provide key insight for open space development under Interstate 94 when referencing back during the design phase. With this site residing so close to a waterway it's important to understand the procedures taken to minimize the ecological impact on the river.





Figure 6.03 - John Whitton Bridged Precedent Photos

Precedent Studies

MILL RIVER PARK AND GREENWAY

Project Name: Mill River Park and Greenway

Location: Stamford, Connecticut

Firm Name: OLIN Partnership

Size: 28 acre park and 3 mile greenway

Built: 2013

Excerpt from Abstract:

Formerly a polluted, derelict riverfront, Mill River Park and Greenway is now a verdant, animated civic space that mends the ecological and social fabric of downtown Stamford, Connecticut. Working closely with engineers and ecologists, the team conceived of a landscape designed to revitalize aquatic and terrestrial habitats and reduce flooding by restoring the channelized river's edge and introducing hundreds of new native plants. The transformative effect of this park builds on ecological sustainability into social sustainability and social justice. The design provides much needed park space for active and passive recreation and a flexible "Great Lawn and Overlook" for large programmed events. A model for redefining active urban life, the park is a catalyst for residential, corporate and commercial growth and economic sustainability.

Capstone Connection:

OLIN's restoration and redesign of the Mill River establishes a vital precedent for river habitat restoration, open space design, and public health. The overall extent of this project, although complex in nature, provides a simplistic design strategy appropriate for those in the surrounding communities. Not only did this project act as an ecological habitat catalyst but equally has an economic one providing a strong correlation to the set vision and goals to the Menomonee River Fab District master plan.





Figure 6.04 - Mill River Park and Greenway Precedent Photos

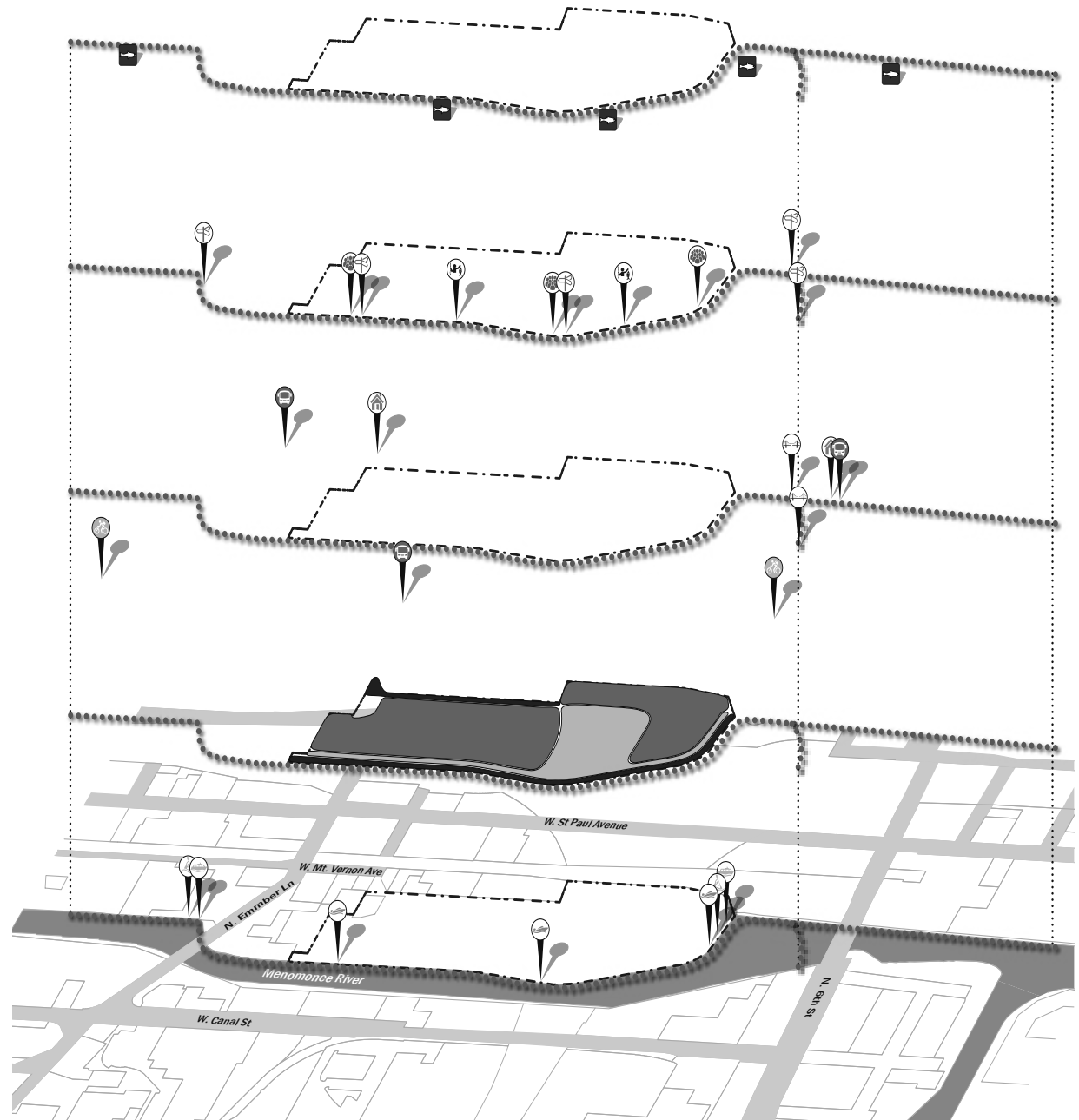
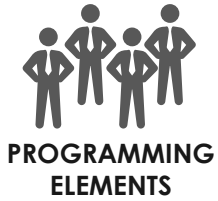


Figure 1.01 shows the 5 phase design strategy for the Menomonee River FaB District and their relationship with one another.

Figure 6.05 - Program Development Isometric Graphic

HABITAT IMPROVEMENT

The primary revitalization strategy for the river focuses on enhancing existing conditions and then establishing more opportunities for habitat biodiversity. In order to encourage future habitat growth, the steel plates lining the river will be enriched with native planting species. As far as strategies to improve the river habitat quality such things like floating wetlands will be constructed.

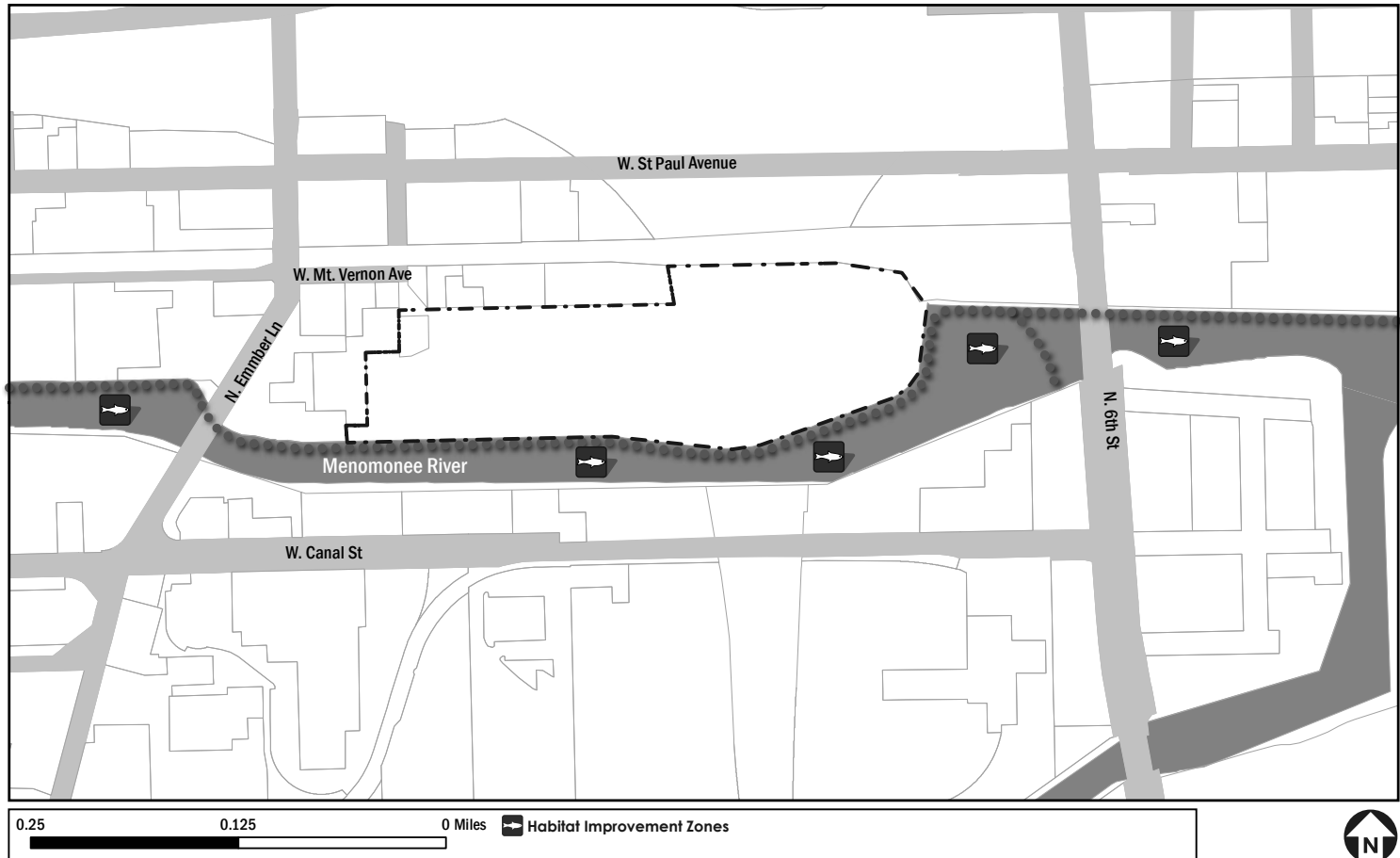


Figure 6.06 - Habitat Improvement Map

PROGRAMMING ELEMENTS

Programming strategies focus on the ability to provide an active riverfront friendly to all users. Public gathering spaces and signage allow for the interaction of a diverse community base and increase the ability to understand the intend use of the space. The addition of public fishing access will progress and educate the public on the importance of our urban river ecosystems. Developing such programming will no longer exist as a public afterthought and in turn grow into a prominent social corridor for entertainment.

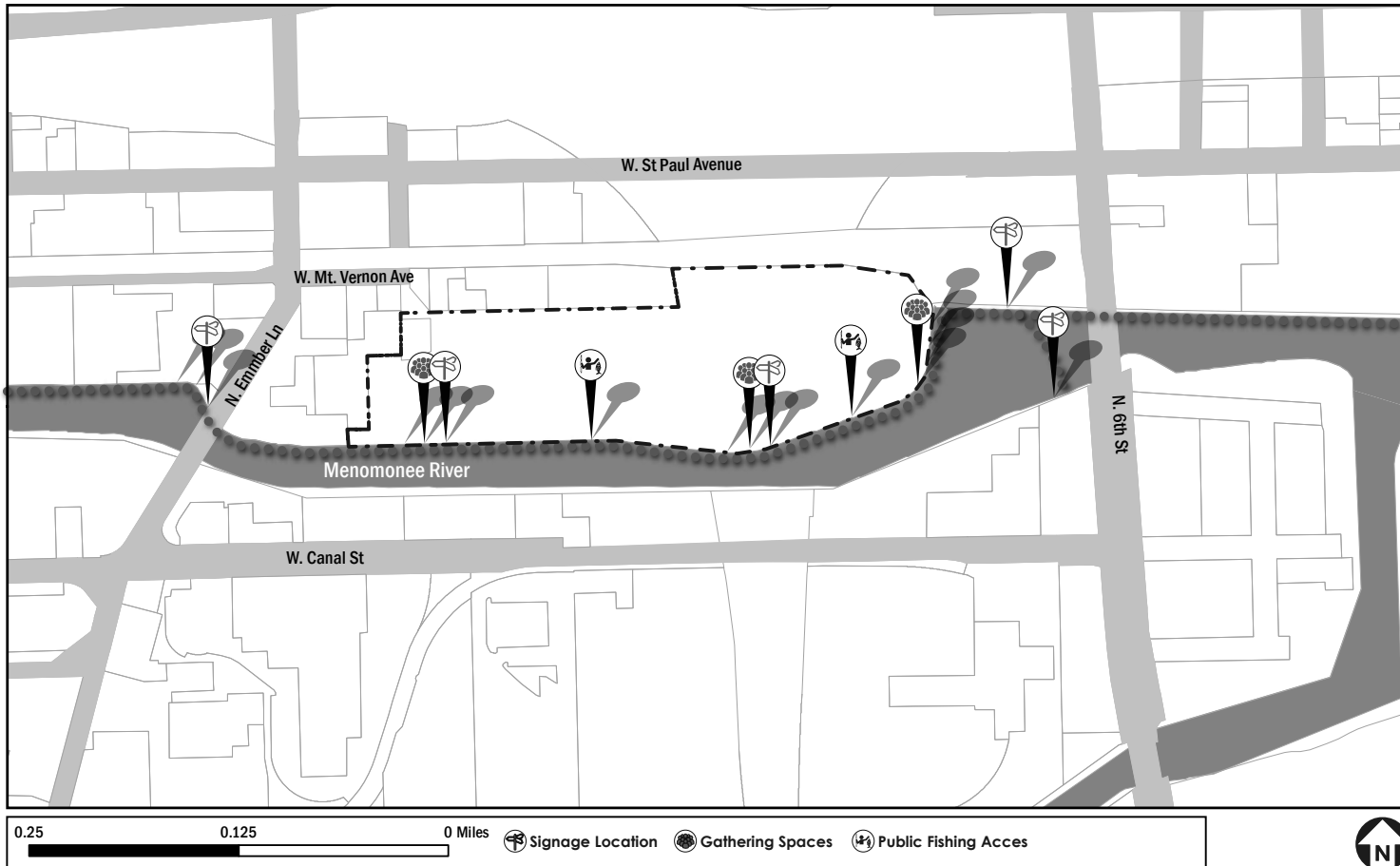


Figure 6.07 - Programming Elements Map

SITE ACCESSIBILITY

Enhancing the avenues in which people are able to access the site can help bridge the gap between different communities and spark new experiences for those residents. With the increased amount of public transportation, like bus stops and bike paths, present in the area with activate a more user friendly setting. Developing a more fluid movement through the site with the addition of new entrances will increase the ability of the site to impact as many users as possible.

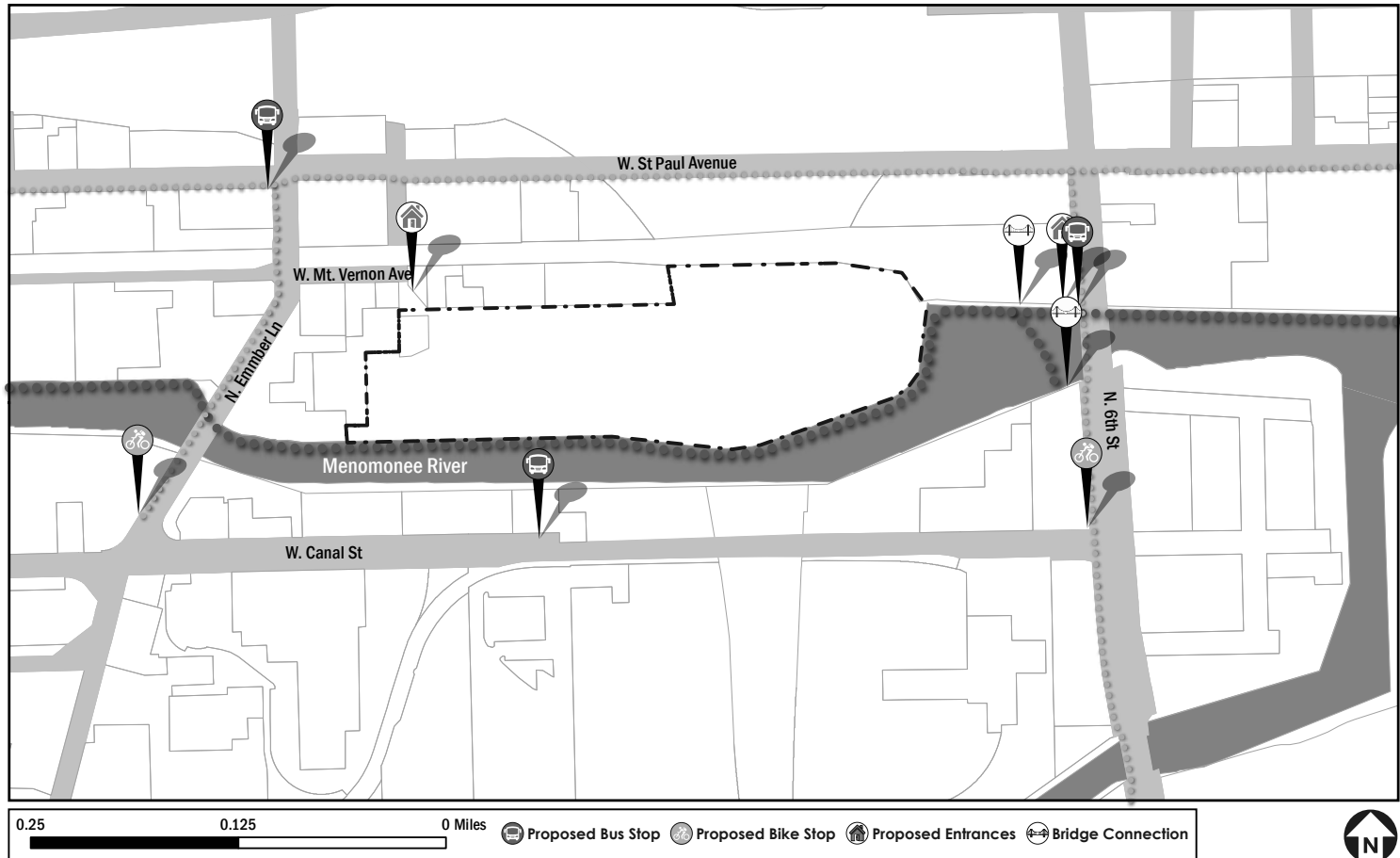


Figure 6.08 - Site Accessibility Map

SITE DEVELOPMENT

By stimulating the site and developing it into a prevalent social amenity, the adjacent riverfront will in turn start to progressing into an ecological and economical asset to the surrounding community. Based on the vision and goals three strategies were developed in hopes to achieve such an entertainment destination. These consist of a multi-use commercial development, a vast interconnecting network of urban public open space, and lastly an extensive stormwater management system utilizing the riverfront to provided relief.

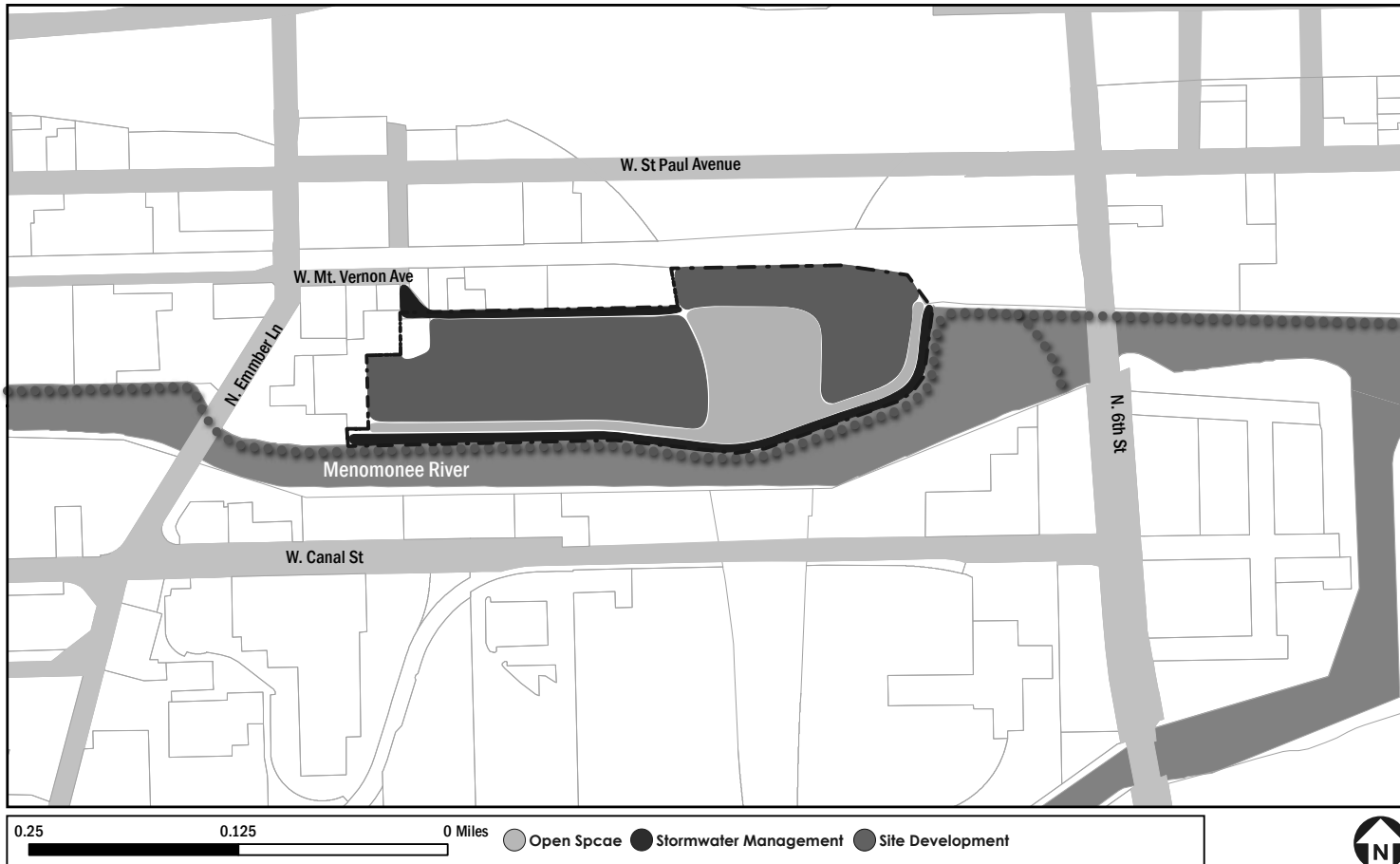


Figure 6.09 - Site Development Map

RIVERFRONT EXPERIENCE

Building off the development of a social amenity the riverfront strategies focus on enabling that direct contact with the river while creating an active social corridor. Water recreation launches and public boat docks promote the usability of the river educating its users about the importance of preserving our river ecosystems and the wildlife as an amenity. Adding another dimension to the rivers social experience is the implementation of a water taxi system utilizing our urban waterways as a functioning mobility tool in efforts to further promote the ecological significance of these systems.

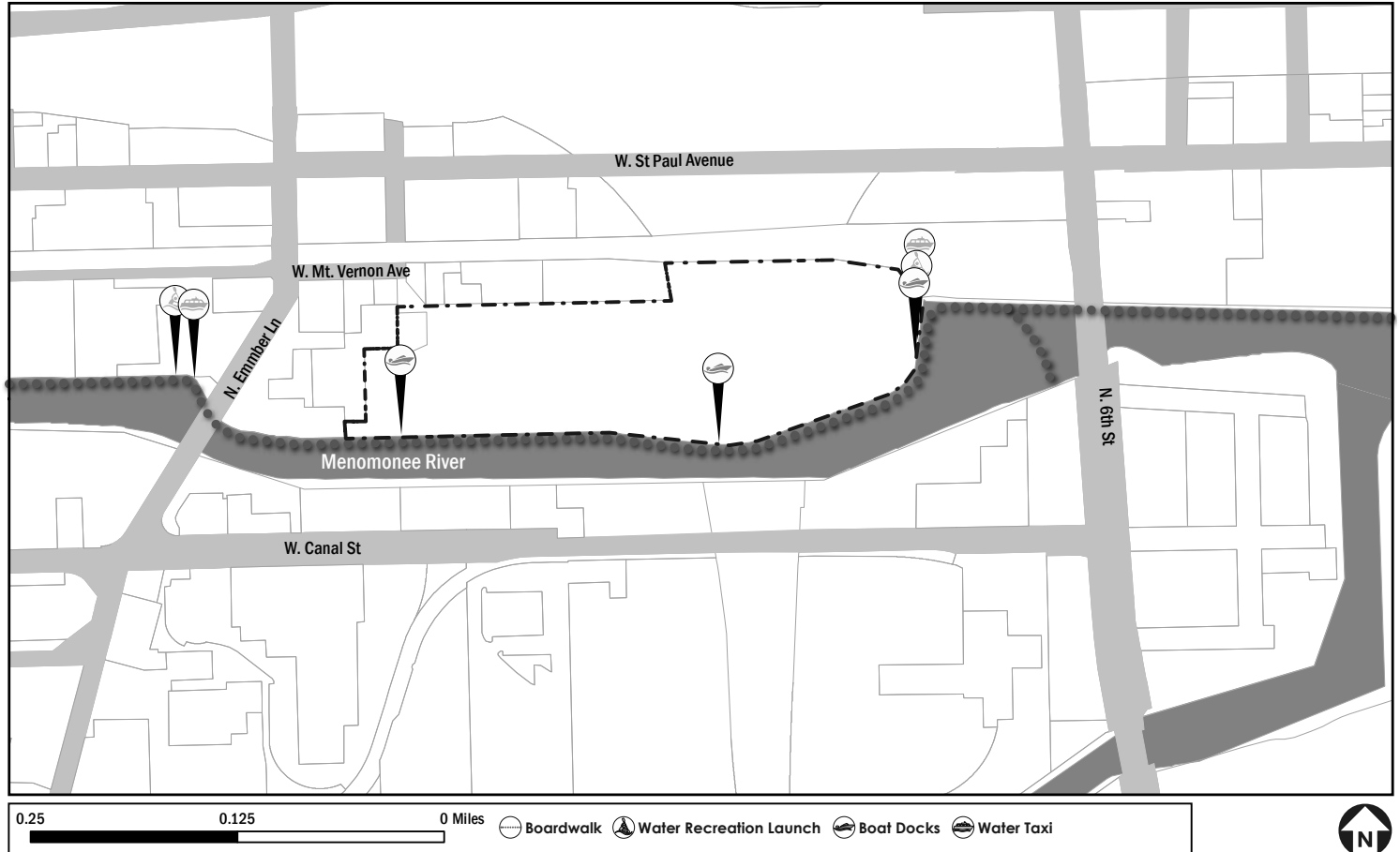


Figure 6.10 - River Experience Map

EVALUATION CRITERIA

Social: Develop a diverse connected linear greenway system that will trigger community interest and interaction.

Goal

- Sustain the health, safety, and welfare of the public
- Make available universal access to the greenway system
- Enhance public education and interaction with the river

Design Strategy

- Provide those of different communities equal opportunities to successfully access the river
- Develop an elaborate series of program elements along the river foster community interaction

Metrics

- Increase social programming by 100%
- Improve the bike accessibility by 50%

Economic: Promote the FaB redevelopment as an economic catalyst for future economic growth opportunities

Goal

- Advertise multi-use commercial buildings as a daily entertainment destination
- Employ sustainable construction practices with the inclusion of low impact building materials

Design Strategy

- Combine multi-use commercial buildings and landscape urbanism to activate the usability of the site

Metrics

- Draw 1,000 people per weekday and 5,000 per weekend

Environmental: Restore the native river ecosystem using recreational opportunities as educational tool

Goal

- Stimulate ecological biodiversity within and along the river
- Provide recreational programming along the river enabling personal connectivity to the river.
- Restore water quality back to an appropriate level.
- Minimize storm water runoff into the river from project site and adjacent properties

Design Strategy

- Encourage the use of green infrastructure for site development to reduce the impact from storm water runoff.
- Implement native planting habitats and remove all invasive species present
- Develop user friendly recreational opportunities accessible to all

Metrics

- Create 5 habitat improvement zones in river
- Provide 5 public recreation spaces along the river
- Reduce storm water runoff by 50%

ESSAY ON PROFESSIONAL DESIGN ETHICS

Providing a consistent set of design ethics is a crucial point in the beginning of any design process. Ethics are not only the drivers behind our everyday life decisions but also the foundation of design solutions within a scope of a project. It is our duty as designers to apply these ethics appropriately and hold ourselves accountable for our decisions.

My design ethics focus around creating an accessible and functional place that promotes underlying sustainable design approaches while providing a steady connection with the surrounding communities. Having a strong emphasis on accessibility into a space enhances the lasting connection it will provide for all types of users. Besides being accessible a design must also provide avenues of functionality. Meaning it must provide appropriate opportunities for work, play, and social interaction by those who intend to use the space. Sometimes deemed as a difficult task for designers, but while designating legibility to each of these opportunities leaving a sense of mystery and flexibility is necessary in order to give users the ability to fulfill their own desires.

In order for a design to truly have a positive impact on the surrounding physical environment appropriate steps must be taken to ensure useful sustainability approaches are used

throughout the design process. Providing best management practices in the forms of stormwater treatment, native plantings, and low impact construction materials are essential design elements in order to achieve sustainable design alternatives. Ensuring that these practices are fulfilled comes at the hand of a designers personal and professional accountability.

Pursuing a site that in the end offers an accessible, functional, sustainable design solution is of all importance, but enabling a site that strongly and directly connects to the surrounding communities through various media is of greater importance. The health, safety, and welfare is of an utmost priority with any design and crafting such an intricate connected community will guarantee the success of these. Increasing the connectivity opens up avenues to exhibit cultural references through various design elements and display the enthusiasm such community's demonstration.

In conclusion, these simple ethical principles provide a strong foundation for design. As landscape architects it is our professional duty to uphold a strong code of ethics in combination with producing effective landscapes encouraging the health, safety and welfare of the public.



Figure 6.11 - Rowing Team on Menomonee River

Master Plan



Figure 7.01 - Historical Menomonee River



Figure 7.02 – Menomonee Valley Aerial Photo

Existing Site vs. Proposed Site

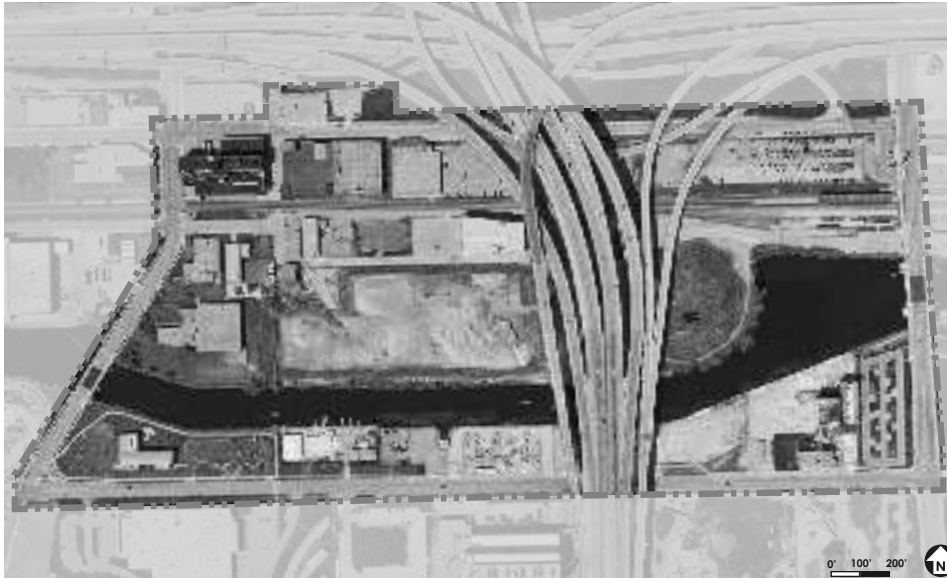


Figure 7.03 – Master Plan Existing Site

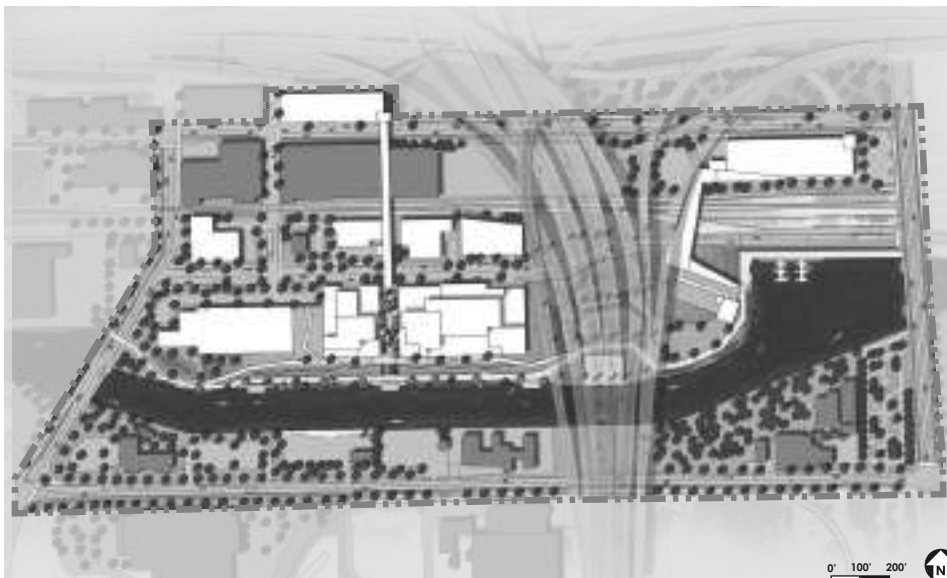


Figure 7.04 – Master Plan Proposed Site

Site Accessibility

- City Bus Stop will help provide an affordable transportation option for users
- Buffered Bike Lanes encourages community members to engage in an active, healthy, safe neighborhood
- New vehicle entrances enhance the ability for future economic development
- Multi-Use Boardwalk allows for constant activity to the space

Ecological Improvements

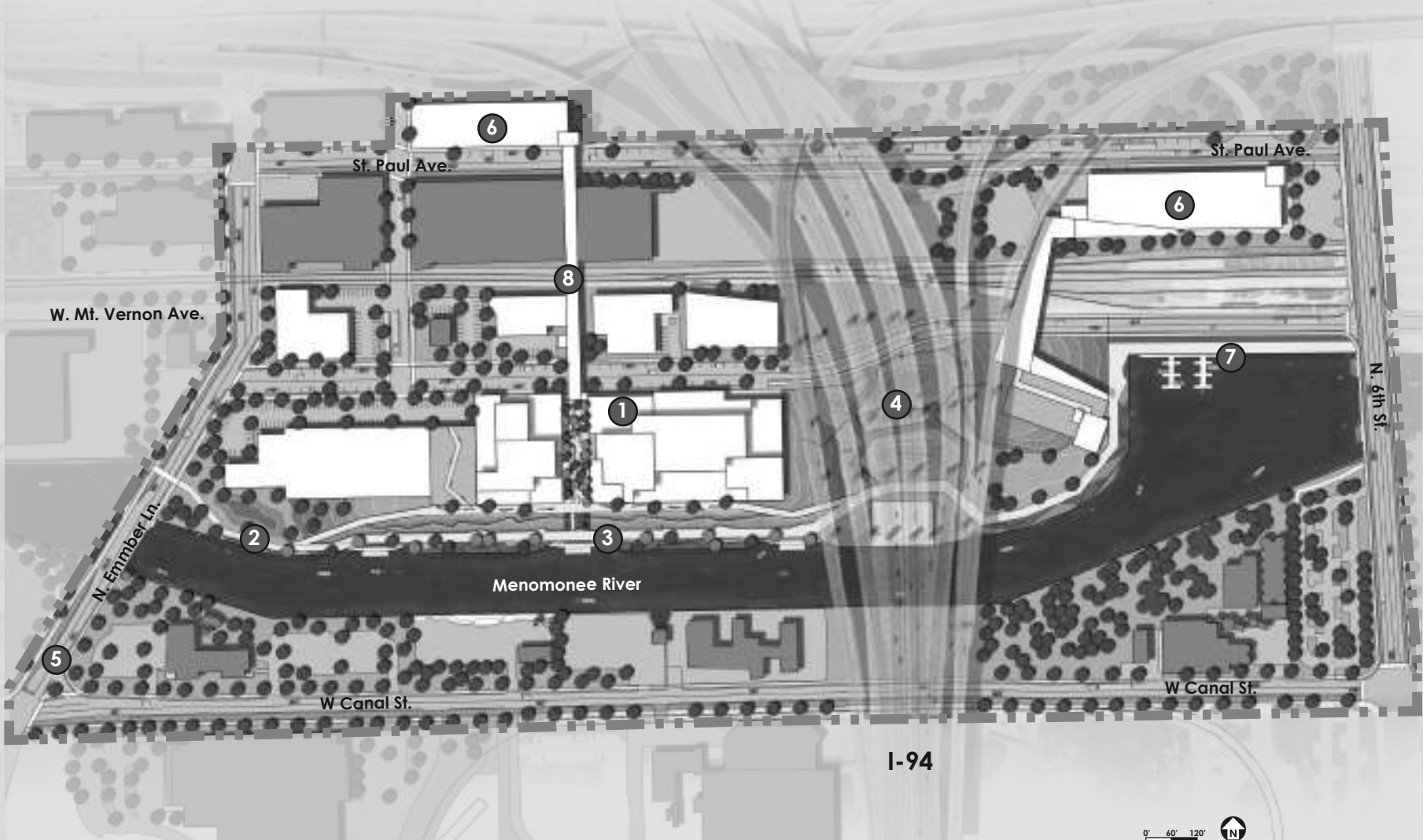
- Street Swales infiltrate storm water
- Floating Wetlands help promote future river habitat
- Stormwater Park infiltrates runoff from highway overhead
- Greenroofs allows for maximum open space

Improved Land Use

- Mixed use buildings provide a diverse economic community
- Building setbacks soften architectural character
- Parking structures decrease surface parking

Improved Community Connectivity

- Connection to Hank Aaron State Trail allows for a cohesive bike infrastructure
- Downtown connection encourages a diverse demographic direct access to site
- Providing ease of access to Marquette University provides students a diverse social atmosphere

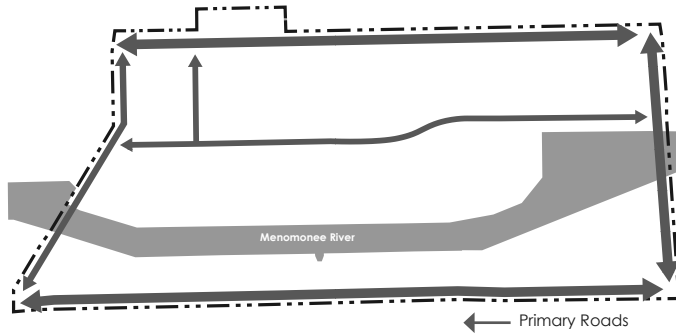


Program Elements

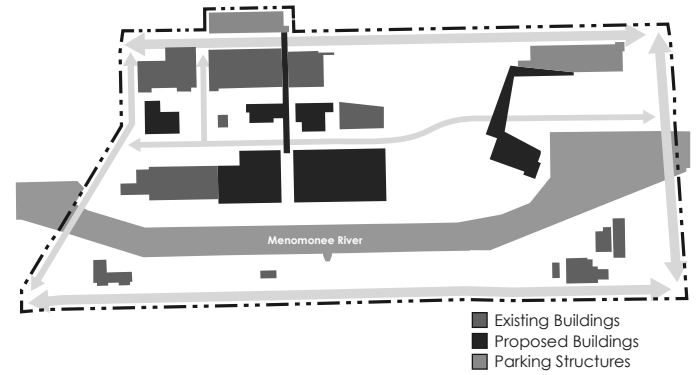
- | | | | |
|--|------------------------------------|--|---------------------------------------|
| 1 Mixed-Use Commercial Buildings | 2 Multi-Use Boardwalk | 3 Public Gathering Space | 4 Stormwater Management Park |
| 5 Hank Aaron State Trail Connection | 6 Public Parking Structures | 7 Public Water Recreation Docks | 8 Elevated Pedestrian Corridor |

Figure 7.05 – Master Plan Program Elements

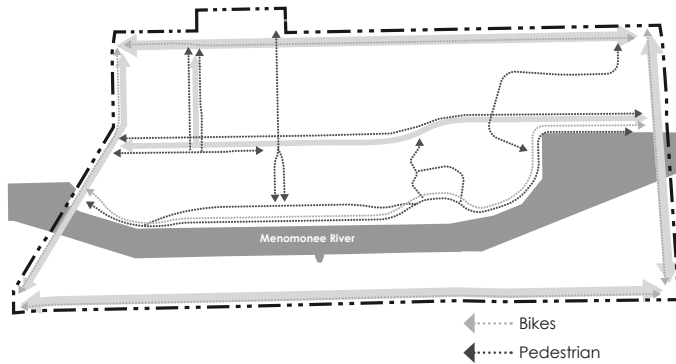
Vehicle Circulation



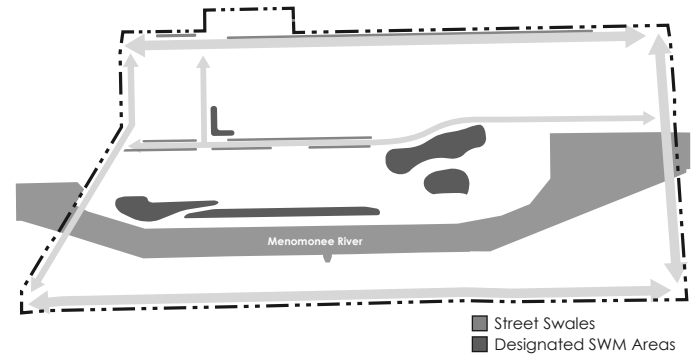
Land Use



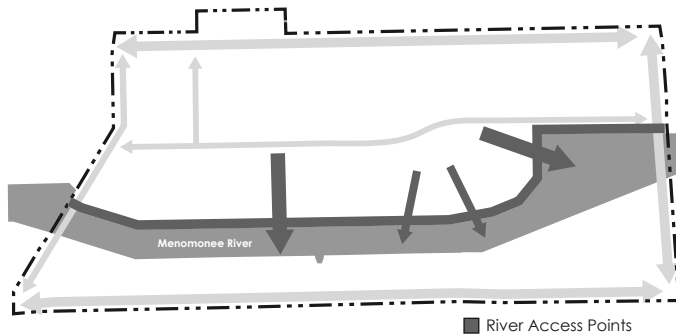
Pedestrian/ Bike Circulation



Stormwater Management



Riverfront Accessibility



Open Space Network

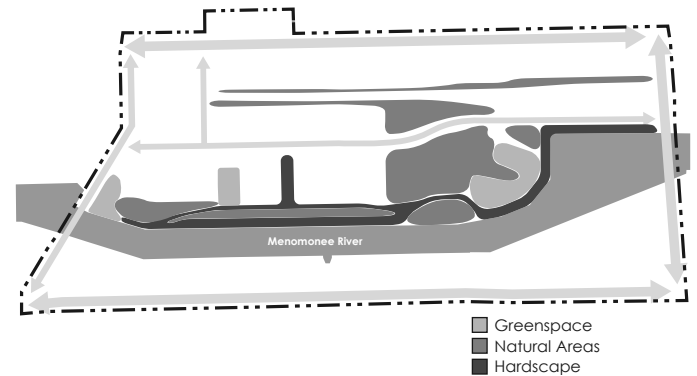
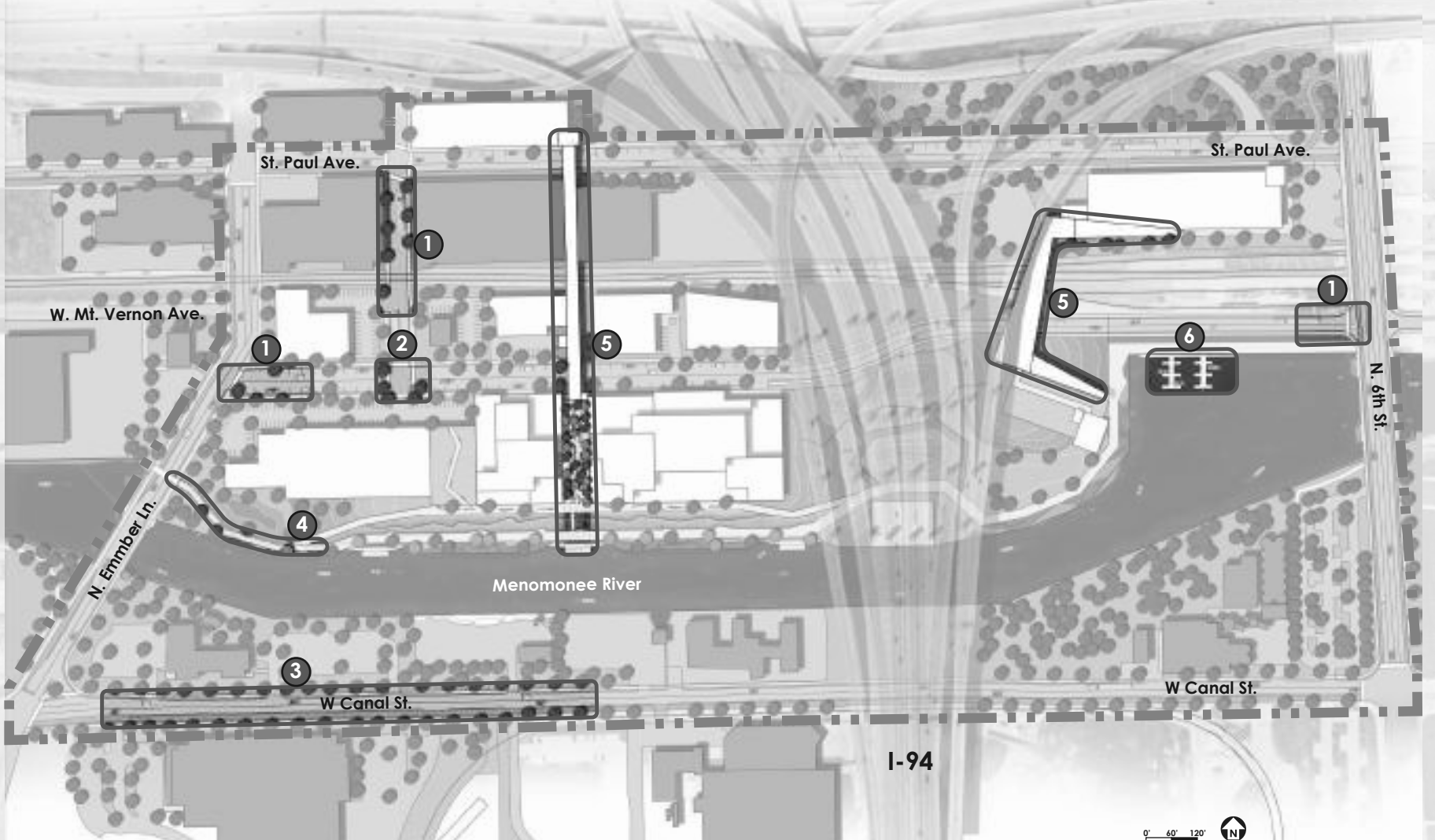


Figure 7.06 – Master Plan Design Diagrams



Site Accessibility Improvements

- 1** Vehicle Entrance Roads
- 2** City Bus Stops
- 3** Buffered Bike Lanes
- 4** Multi-Use Boardwalk
- 5** Elevated Pedestrian Corridor
- 6** Public Water Recreation Docks

Figure 7.06 – Master Plan Site Accessibility Improvements



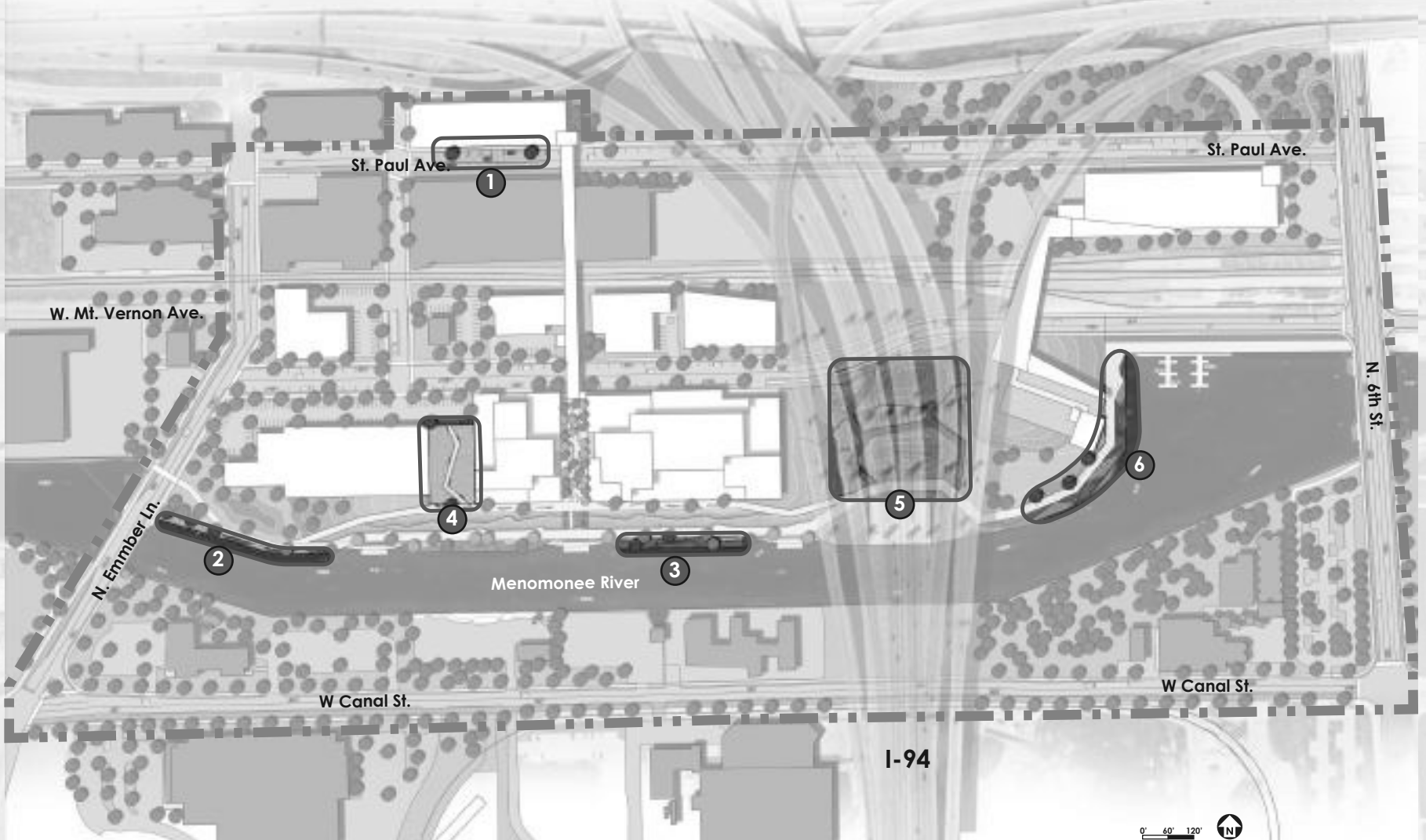
After analyzing circulation patterns throughout the site it was determined that there were significant connectivity barriers preventing any sort of diverse useable space. With minimal amount of pedestrian and vehicle friendly corridors a primary goal was to design a diverse infrastructure system to promote a more useable space for all.

One of the primary focuses was providing adequate vehicle circulation to allow for this modern industrial district to maximize its economic potential. The proposed west end entrance and the east end bridge entrance provide a fluid east-west connection. Another north entrance was also design to help reduce the dependency of the main thorofare and provide a secondary outlet from the

district. The addition of two main elevated walkways gives way to connecting two main districts in the community, while providing a pedestrian friendly corridor enhancing the diversity of the site.

Equitable to all is another important goal that this master plan looks to accomplish. The Menomonee Valley plays host to a variety of individuals and connecting them through various affordable transportation systems is essential. This is done with the introduction of a city bus stop in the heart of the district in which workers and visitors can access the site that might not have prior. Extensive bike infrastructure and a recreational dock were designed in order to connect to more diverse transportation systems enhancing the usability of the proposed space.

Figure 7.07 – Site Accessibility Improvement Photos



Ecological Improvements

- 1** Street Bioswales
- 2** Floating Wetlands
- 3** Stormwater Open Spaces
- 4** Green Roofs
- 5** Stormwater Management Park
- 6** Flood Tolerant Terraces

Figure 7.08 – Master Plan Ecological Improvements



FLOATING WETLANDS

The existing site consisted primarily of surfacing parking, leftover infill from highway construction, and depended on storm drains to capture and release stormwater into the surrounding water bodies. This provided concern since these avenues were creating an ecological hazard with contaminated stormwater and sediment.

With this being a primary concern, the proposed master plan looked to implement various solutions to infiltrate and collect stormwater reducing the negative ecological impact the existing site conditions presented. With the introduction of street bioswales stormwater runoff has the opportunity to infiltrate the ground and filter out any harmful pollutants before returning to the regional watertable. This strategy is also utilized along the riverbank with



ON-STREET BIOSWALES

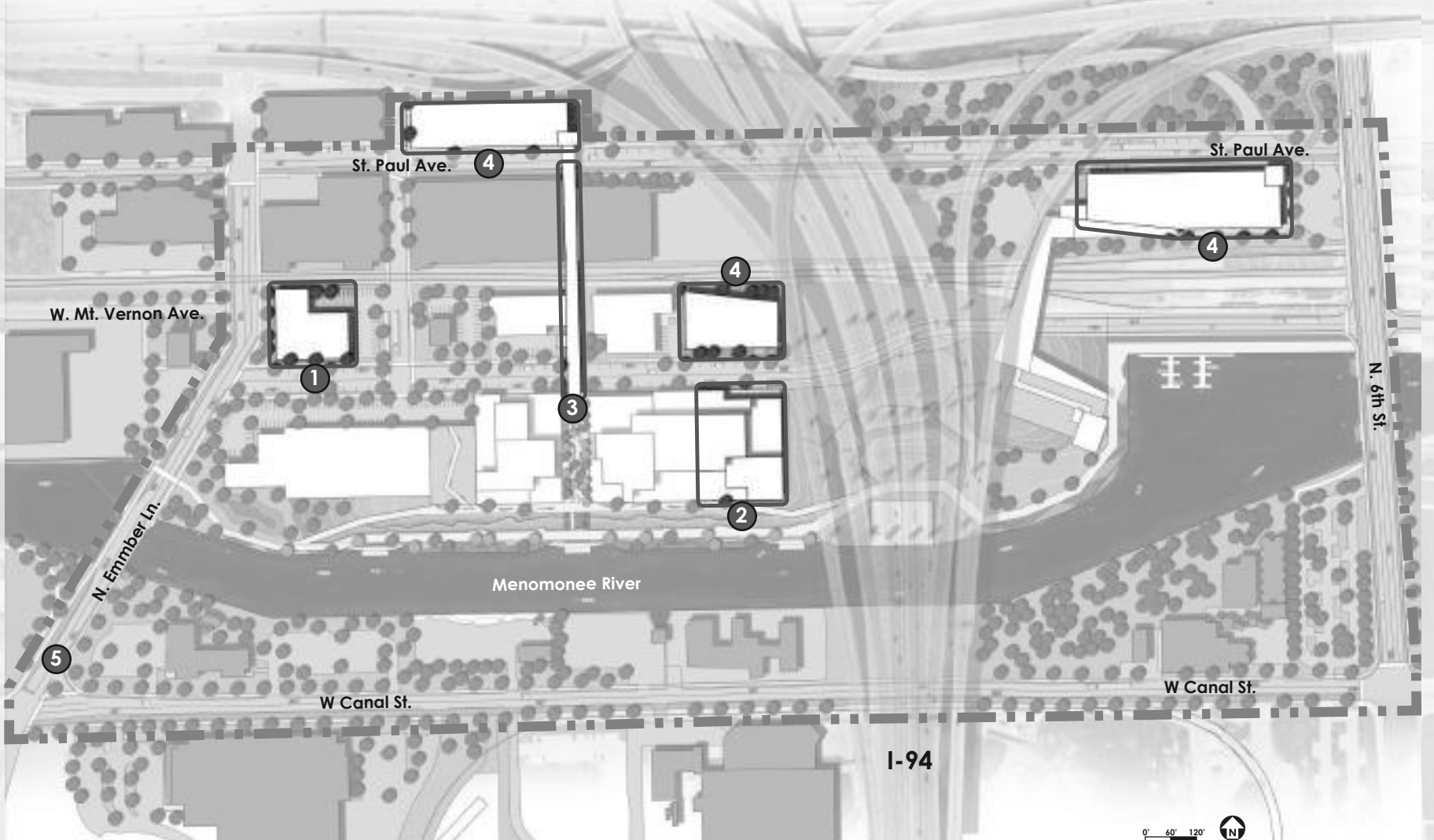


STORMWATER MANAGEMENT PARK

numerous infiltration spaces along the riverbank using gabion walls to allow for the natural flow of water back into the ground. The idea of stormwater collection in conjunction with maximizing green space is accomplished through the addition of green roofs. These areas provide buildings the opportunity to utilize stormwater as a reusable resource for grey water systems rather than something dispensable from the site.

The master plan also seeks to encourage biodiversity in the river habitat with it being an important goal. With the implementation of floating wetlands in various locations along the banks this provides pocket habitats for fish and other species present in the river ecosystem.

Figure 7.09 – Ecological Improvement Photos



Improved Site Land Use

- 1** Mixed-Use Commercial Buildings
- 2** Building Setbacks
- 3** Elevated Pedestrian Corridor
- 4** Parking Structures

Figure 7.10 – Master Plan Improved Landuse



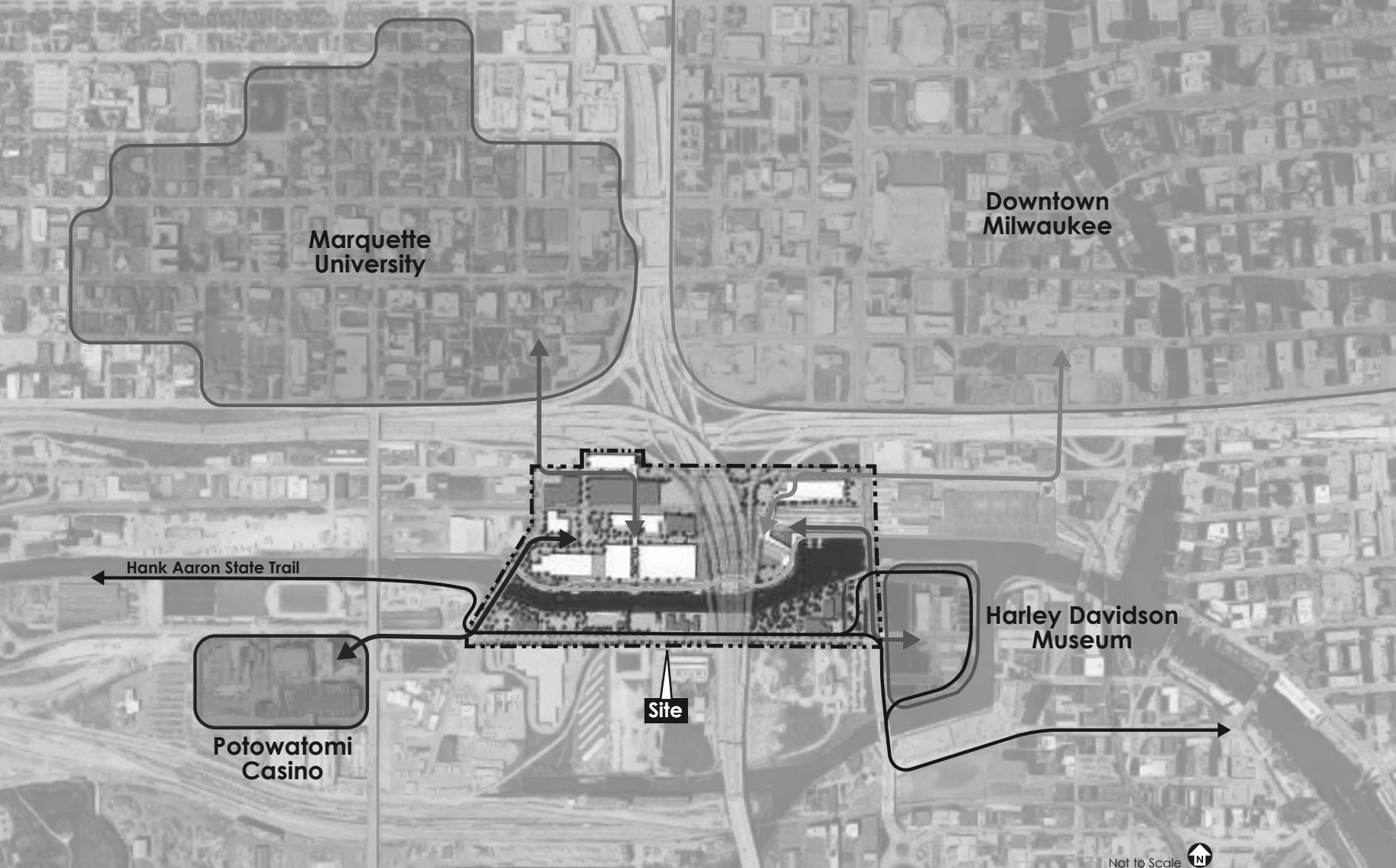
With existing site conditions consisting of primarily commercial and light industry businesses, the space served as a one dimensional urban space with activity only during working hours. The lack of diverse land use on the site has led to the deterioration of a vibrant social space.

The proposed master plan works to bring dynamic social elements to help compliment the industrial district and increase user activity along the riverfront. The development of mixed use infrastructure helps bridge the gap between industrial commerce and social activities. The primary mixed use buildings were placed along the riverfront. These buildings consolidate all the necessary elements with a mix of office and parking on the first floor, and light industry and social spaces on the second and third floors. Social spaces

were placed on the riverfront to enhance the relationship with the river and other proposed connection systems in the master plan. In order to develop a user friendly space building setbacks where created to soften the architectural character the buildings would have provide views of the surrounding areas.

By increasing the usability and activity of the space an adequate amount of area for cars was necessary with such a high dependency of vehicle transportation. To eliminate further negative ecological impacts of surfacing parking around the site multi-level parking structures have been implemented. These can serve for workers of the businesses, users of the social spaces, and travelers utilizing the intermodal train station.

Figure 7.11 – Improved Landuse Photos



Not to Scale 

Improved Community Connectivity

- | | |
|--|---|
|  Marquette University Connection |  Potowatomi Casino Connection |
|  Downtown Milwaukee Connection |  Proposed Hank Aaron State Trial Route |
|  Harley Davidson Museum Connection |  Proposed Boardwalk Future Connection |

Figure 7.12 – Master Plan Community Connectivity



By providing ecological improvements and diverse program elements the riverfront can be developed into a community center piece. Part of the connectivity strategy was to provide a foundation to allow for a continuous transition to the surrounding community and regional facilities in Milwaukee. Developing a well connected system on multiple scales would ensure that users from all over the region would be attracted and willing to use the space.

This graphic illustrates the different connection points with proposed master plan will have with vital surrounding communities and facilities. The black line shows the Hank

Aaron State Trail using the proposed bike lanes which connects to the Third Ward, Downtown, and the west end of the valley. This connection will encourage users to use bikes and lessen their dependency on cars providing better health, safety, and welfare to the community. The orange line shows the proposed multi-use boardwalk as well as the potential to be further developed extending the linear greenway along the river. The red, blue, magenta, and grey lines all illustrate how with the implementation of connections on multiple different scales this proposal will enhance the overall connectivity of these surrounding communities and facilities.

Figure 7.13 – Community Connectivity Photos

Site Design



Figure 8.01 – Historical Menomonee Valley Aerial 1905 Photo

Site Design Concept

With the master plan focusing on bridging the gap between industry and social vitality by developing along the riverfront and creating programming opportunities. The site design looks to accentuate the connection between these elements through the design of spaces and selection of materials.

The pedestrian corridor provides a focal point in the design that connects users to the master plan while providing a vibrant outdoor space. This space then daylights with an outlook over the terracing slope where users have the opportunity to experience views of the river and social spaces below. A variety of seating options allow for users to experience a combination of intimate and open spaces. Materials such as concrete, steel, glass, and wood were consistently selected throughout the site to help preserve the historical background of the community and site. Central gathering spaces along the multi-use boardwalk provide opportunities for a diverse amount of social activities along with give users a personal connection with the river. Helping anchor the social vitality of the space are the two restaurant spaces centered off the pedestrian corridor. With outdoor seating and a rooftop area these two spaces will provide an attractive feature not scene in the valley.

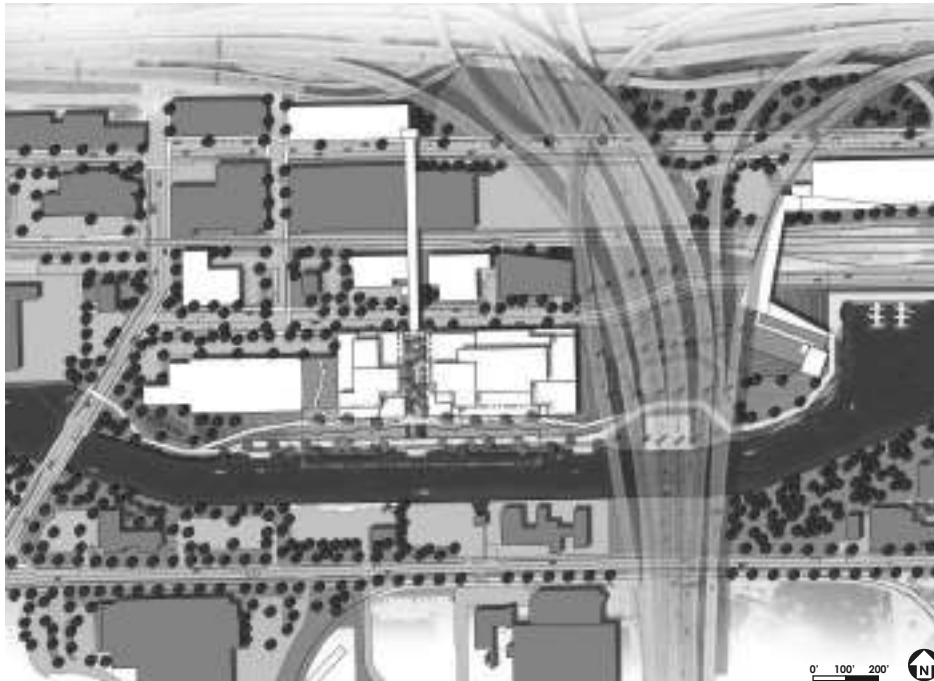
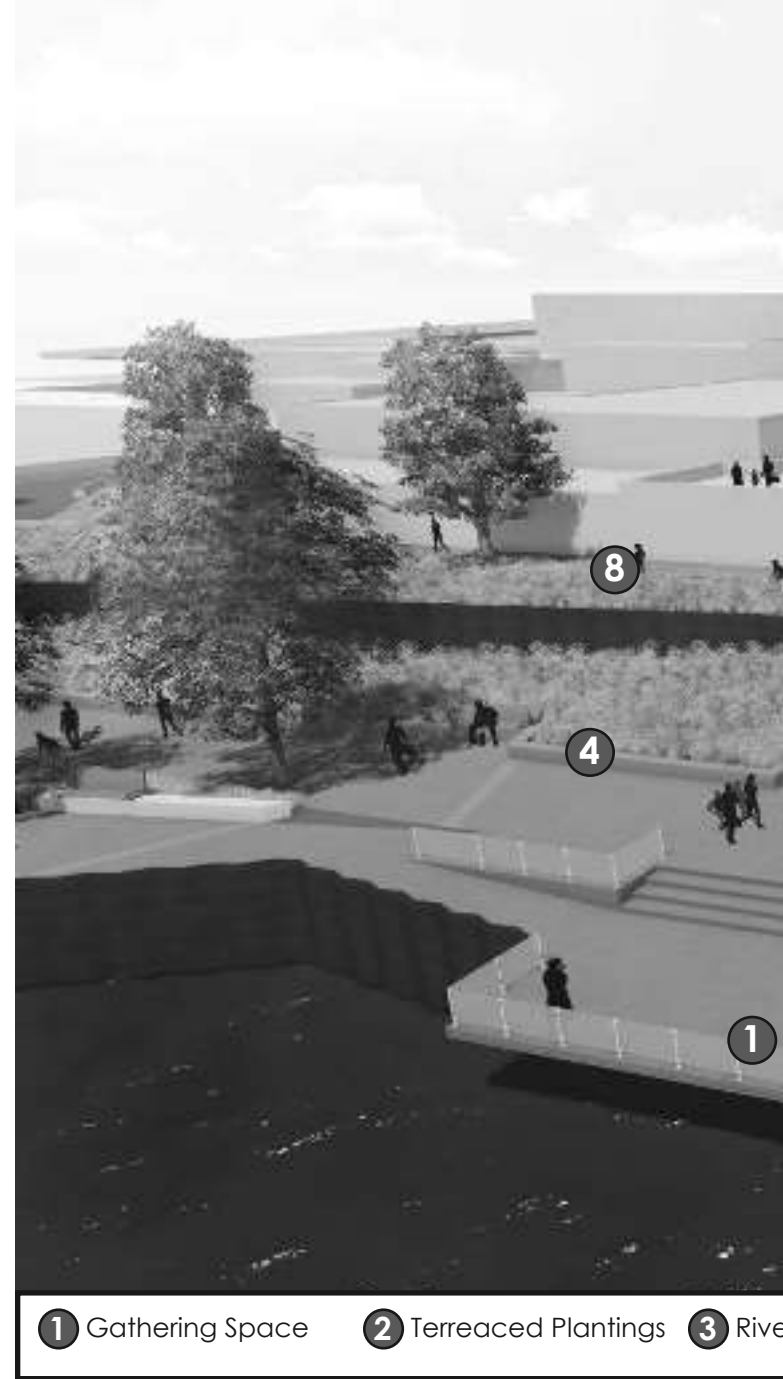
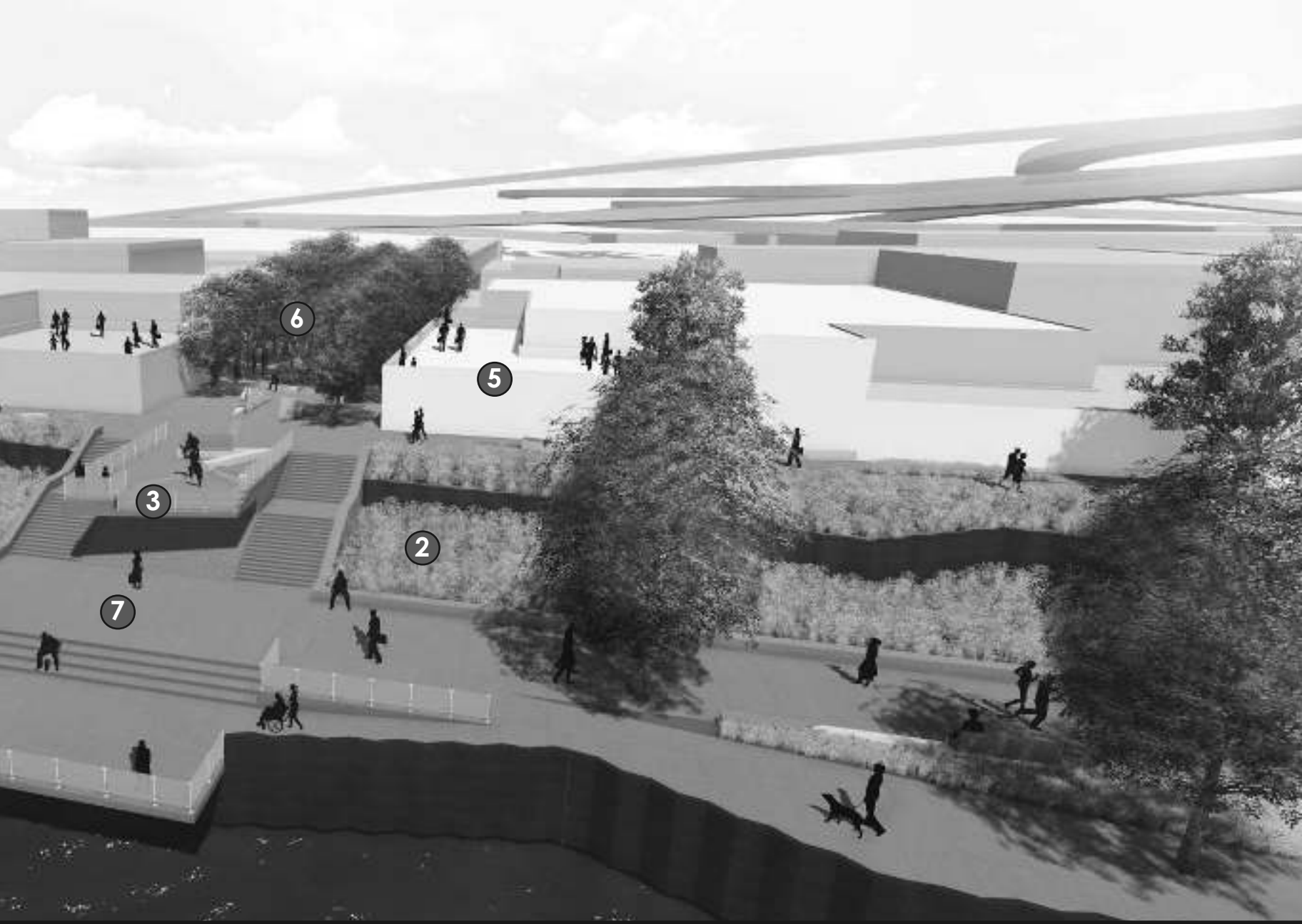


Figure 8.02 – Site Plan Context Image



- 1 Gathering Space
- 2 Terraced Plantings
- 3 River



- er Outlook
- 4** Seat Wall
- 5** Commercial Mixed-Use Buildings
- 6** Pedestrian Corridor
- 7** Multi-Use Boardwalk
- 8** Secondary Multi-Use Pathway

Figure 8.03 – Site Design Perspective

Site Design Section

This section cut helps illustrate the strong relationship the proposed site design has with the river. A key design feature shown here is the first level parking structure providing employees and visitors to utilize when using the mixed-use building spaces. The underground structure is appropriately designed to allow for trucks to access the shipping bays of the commercial building space. Public gathering spaces and seating options are on display as well giving a glance at the accessibility of all these elements through the pedestrian corridor. With many usable opportunities for users it can be seen that there is a seamless transition throughout the entire site design.

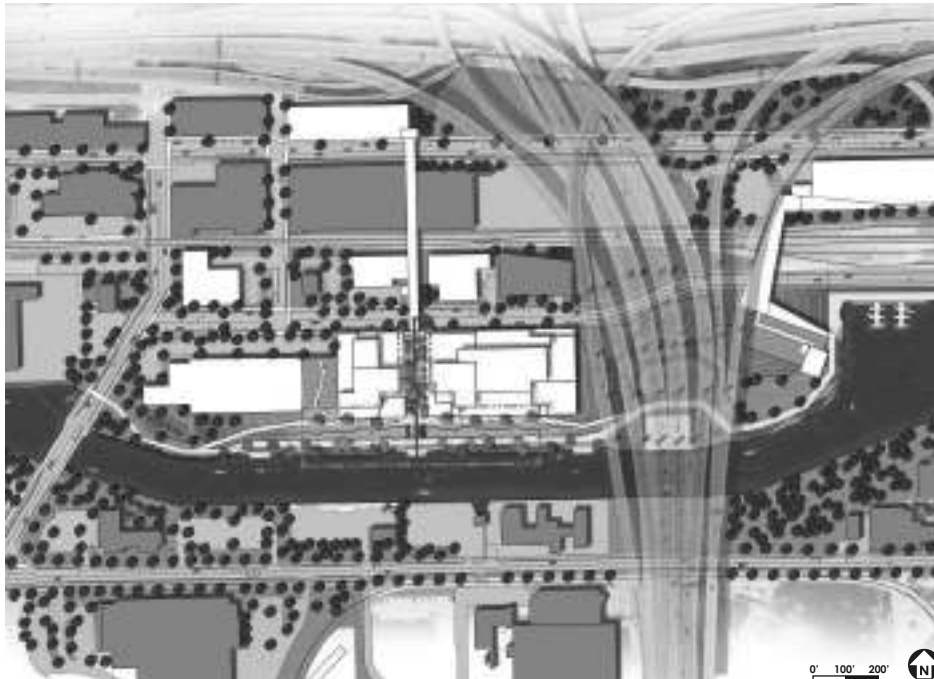
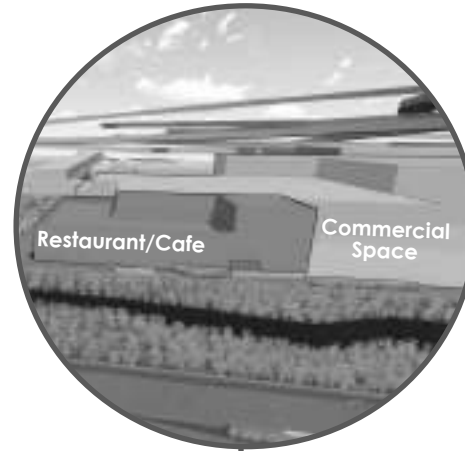
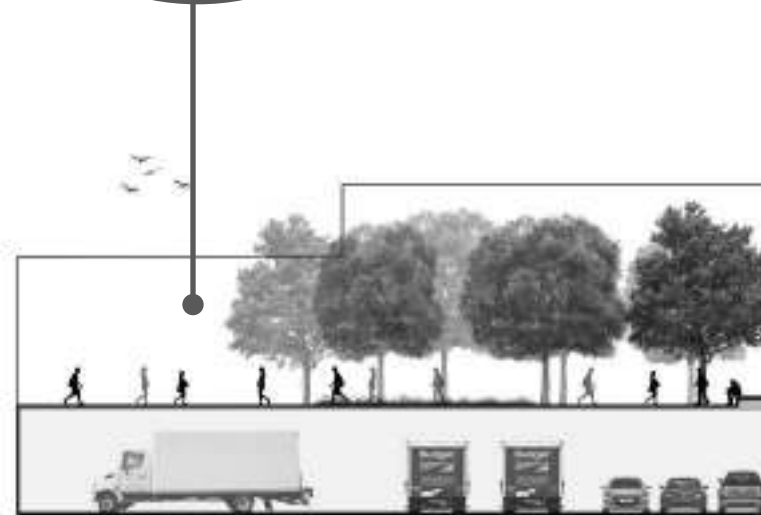


Figure 8.04 – Site Plan Section Line Cut

Mixed-Use Commercial Buildings



Pedestrian Seating



an Corridor
g Option



Underground Parking Structure
with truck access



Pedestrian Corridor
River Outlook



Public Gathering
Spaces

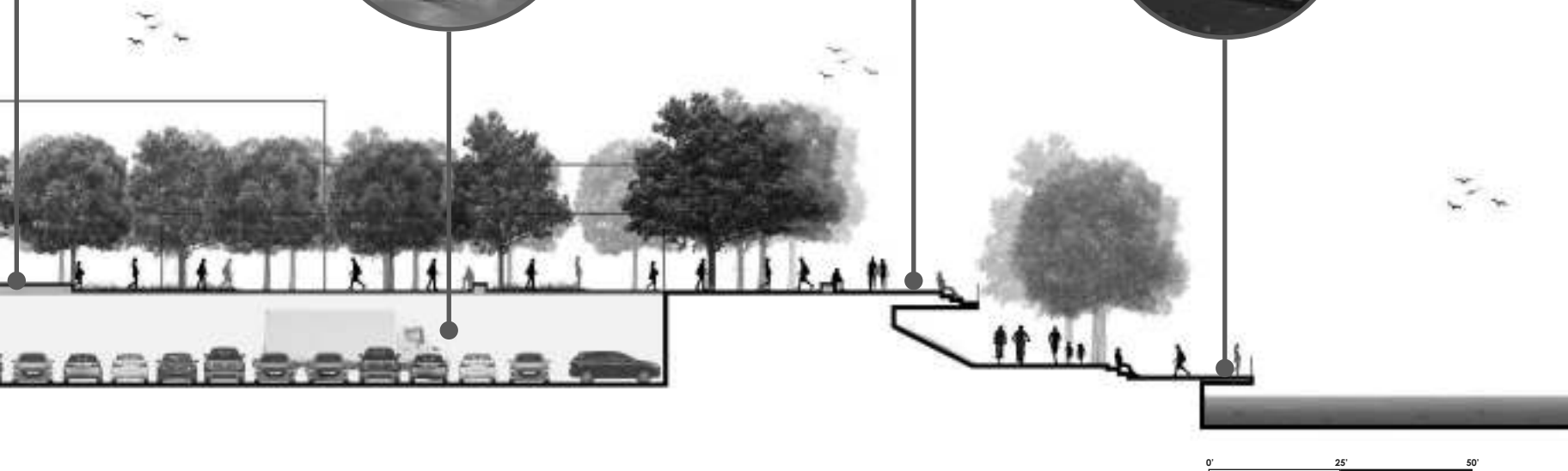
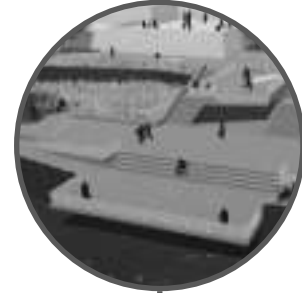


Figure 8.05 – Site Design Section Photos

Figure 8.06 – Site Design Section

Site Design Multi-Use Boardwalk

The multi-use boardwalk serves as a critical element in ensuring the space is socially active throughout. It gives users the opportunity to either actively participate in physical activities like running or biking, while giving those looking for a more intimate space to sit and read the opportunity to actively participate in the site as well. This boardwalk is also the main connecting artery for all open public spaces along the riverfront making it an essential design element for developing a riverfront experience. The primary and secondary walkways of this space are illustrated in the graphics below.



Figure 8.07 – Multi-Use Boardwalk Walkway Diagrams



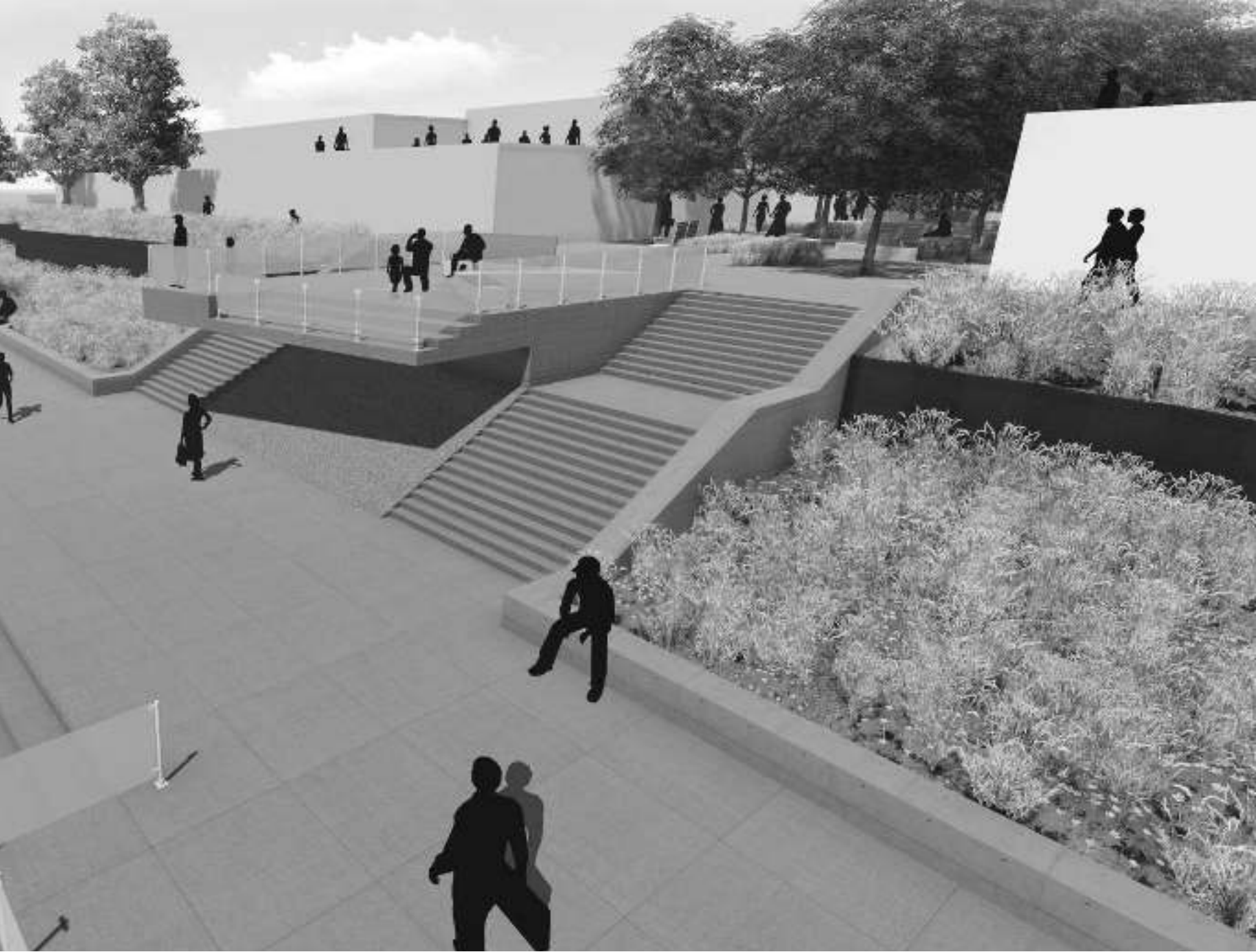


Figure 8.08 – Multi-Use Boardwalk Perspective

Site Design Pedestrian Corridor

The pedestrian corridor is a key design element in that it acts as the focal point in how social spaces are developed around it. This space transitions from an enclosed elevated pedestrian walkway into a vibrant outdoor corridor, and ending with a terraced outlook space providing users with a variety of options when it comes to activities. Users will have the option to utilize the primary walkways, or the more intimate seating areas to wait for a table at one of the restaurants or enjoy the shade from the canopy overhead as illustrated in the graphics below. During the warm months this will be a highly interactive social environment with outdoor and rooftop seating, while in the winter months transition into a more cozier intimate space that could be utilized as a lighting gallery for the holidays.



Figure 8.09 – Pedestrian Corridor Walkway Diagrams

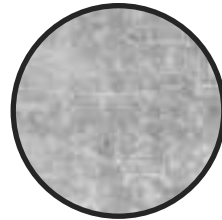




Figure 8.10 – Pedestrian Corridor Perspective

Glass Hand Railing Construction Detail

This design element is used throughout the design in the main public gathering spaces. Building off the industrial history of the site the primary materials of tempered glass and stainless steel were utilized to accentuate the historical significance. Selecting a clear tone of glass was vital ensure the user felt a sense of connection to all the surrounding spaces while providing a safe buffer to dangers.



Concrete
Standard Color and Finish



Monolithic Tempered Glass
Standard Color

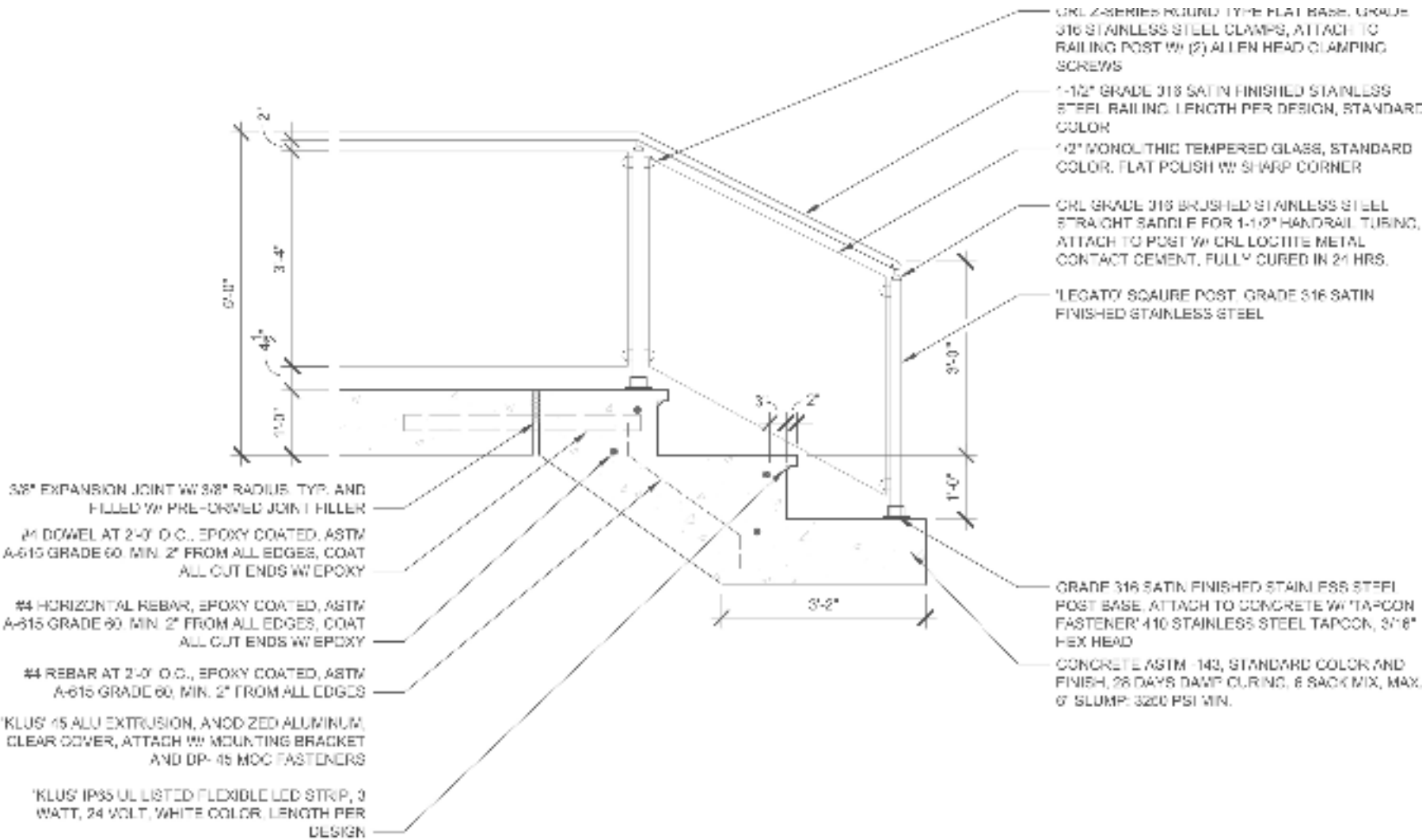


Stainless Steel Saddle



Figure 8.11 – Handrail Detail Highlight

Figure 8.12 – Construction Material Photos



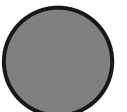
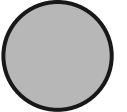
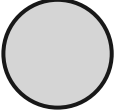
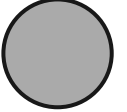
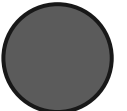
A CONCRETE TERRACE DETAIL
NOT TO SCALE

Figure 8.13 – Handrail Construction Detail

Grading & Drainage Plan



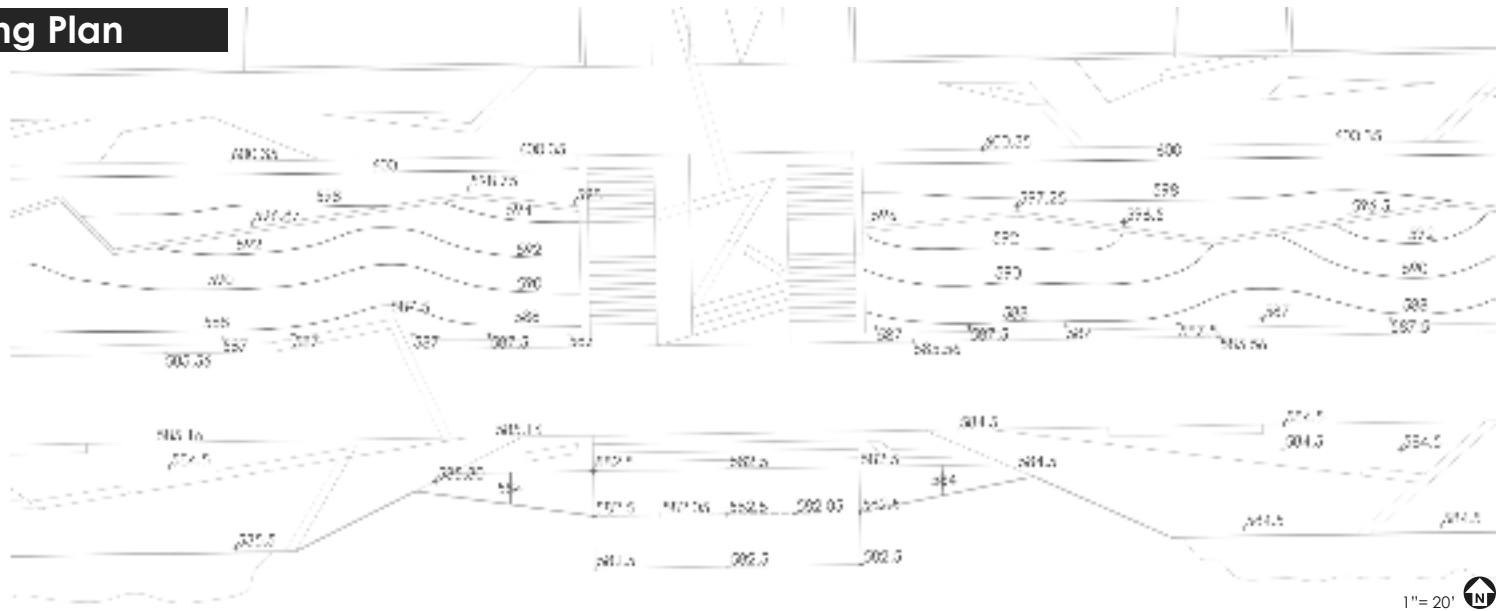
Highest Elevation



Lowest Elevation

Figure 8.14 – Site Design Elevation

Grading Plan



Stormwater Plan

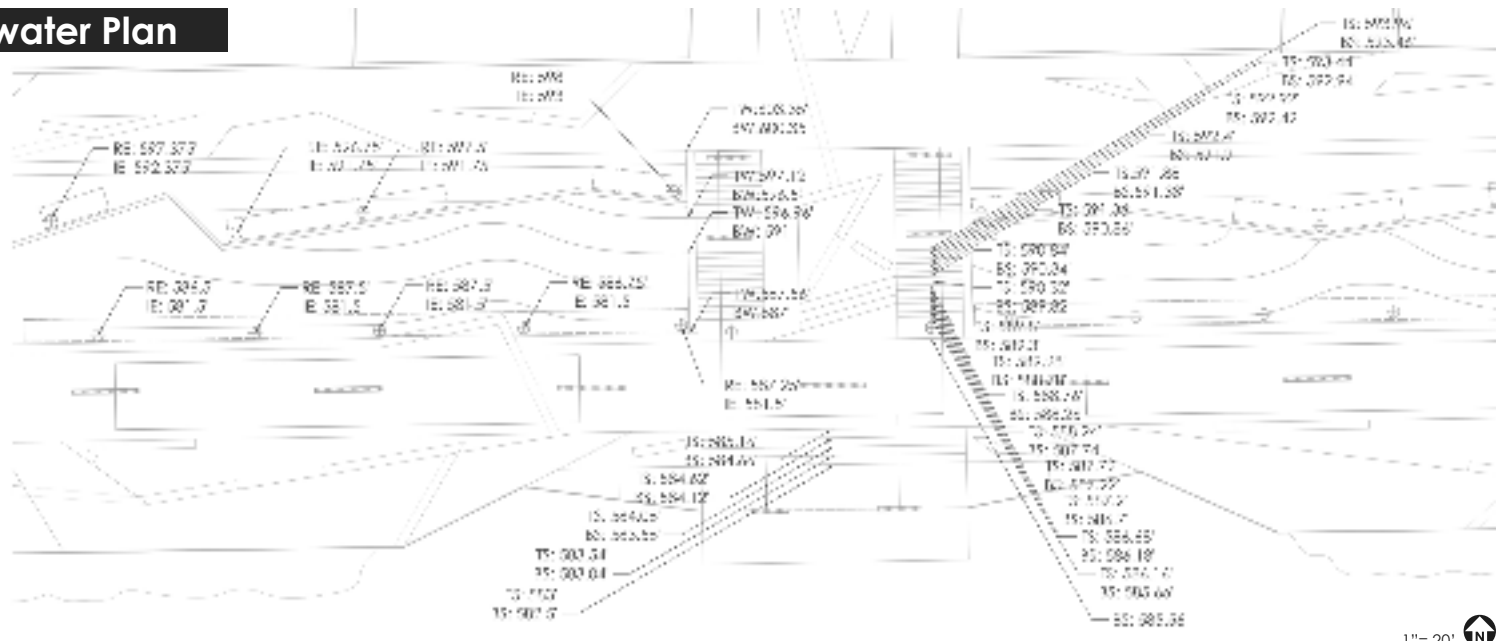


Figure 8.15 – Site Design Grading Plan

Figure 8.16 – Site Design Stormwater Plan

Stormwater Calculations

Rational Equation Q= CIA

Q= runoff (cfs), C= runoff coefficient (unitless), I= rainfall intensity (in/hr), A= area (acres)
 I= 6"/hr x 3 hours for the 100-year storm event

PRE-Q

| Zone | C-Value | Intensity (in/hr) | Area (ft ²) | Acres (ft ² /43,560) | CIA (cfs) | Runoff (gal) |
|---------------|---------|-------------------|-------------------------|---------------------------------|-----------|--------------|
| Existing Site | 0.5 | 6 | 32,037 | 0.735 | 2.21 | 16.53 |
| TOTAL= 2.21 | | | | | | |

POST-Q

| Zone | C-Value | Intensity (in/hr) | Area (ft ²) | Acres (ft ² /43,560) | CIA (cfs) | Runoff (gal) |
|--------------------------|---------|-------------------|-------------------------|---------------------------------|-----------|--------------|
| Concrete Path and Stairs | 0.95 | 6 | 13,407 | 0.3 | 1.75 | 13.09 |
| Permeable Paving | 0.3 | 6 | 3,949 | 0.09 | 0.16 | 1.19 |
| Prairie Plantings | 0.3 | 6 | 12,137 | 0.27 | 0.5 | 3.74 |
| No-Mow Grass Plantings | 0.4 | 6 | 1,692 | 0.03 | 0.09 | 0.67 |
| TOTAL= 2.50 | | | | | | |

ΔQ

| POST-Q | PRE-Q | ΔQ (cfs) |
|--------|-------|----------|
| 2.5 | 2.21 | 0.29 |

REQUIRED SITE STORAGE

| ΔQ (cfs) | x(s/min) | x(min/hr) | x(hr) | Volume (ft ³) |
|----------|----------|-----------|-------|---------------------------|
| 0.29 | 60 | 60 | 3 | TOTAL= 3,132 |

LEVEL SPREADER STORAGE

| LEVEL SPREADER 1 | Layer | Area (ft ²) | Depth (ft) | C-Value | Storage Volume (ft ³) |
|------------------|-------|-------------------------|------------|---------|-----------------------------------|
| | 1 | 80 | 1.5 | 0.25 | 30 |
| | 2 | 80 | 1.5 | 0.35 | 42 |
| | 3 | 80 | 2 | 0.45 | 77.76 |
| TOTAL= 149.76 | | | | | |

| LEVEL SPREADER 2 | Layer | Area (ft ²) | Depth (ft) | C-Value | Storage Volume (ft ³) |
|------------------|-------|-------------------------|------------|---------|-----------------------------------|
| | 1 | 250 | 1.5 | 0.25 | 93.75 |
| | 2 | 250 | 1.5 | 0.35 | 131.25 |
| | 3 | 250 | 2 | 0.45 | 243 |
| TOTAL= 468 | | | | | |

| LEVEL SPREADER 3 | Layer | Area (ft ²) | Depth (ft) | C-Value | Storage Volume (ft ³) |
|------------------|-------|-------------------------|------------|---------|-----------------------------------|
| | 1 | 100 | 1.5 | 0.25 | 37.5 |
| | 2 | 100 | 1.5 | 0.35 | 52.5 |
| | 3 | 100 | 2 | 0.45 | 97.2 |
| TOTAL= 187.2 | | | | | |

| LEVEL SPREADER 4 | Layer | Area (ft ²) | Depth (ft) | C-Value | Storage Volume (ft ³) |
|------------------|-------|-------------------------|------------|---------|-----------------------------------|
| | 1 | 750 | 1.5 | 0.25 | 281.25 |
| | 2 | 750 | 1.5 | 0.35 | 393.75 |
| | 3 | 750 | 2 | 0.45 | 729 |
| TOTAL= 1,404 | | | | | |

TOTAL LEVEL SPREADER STORAGE (1-8) = 4,455.36

CISTERN STORAGE

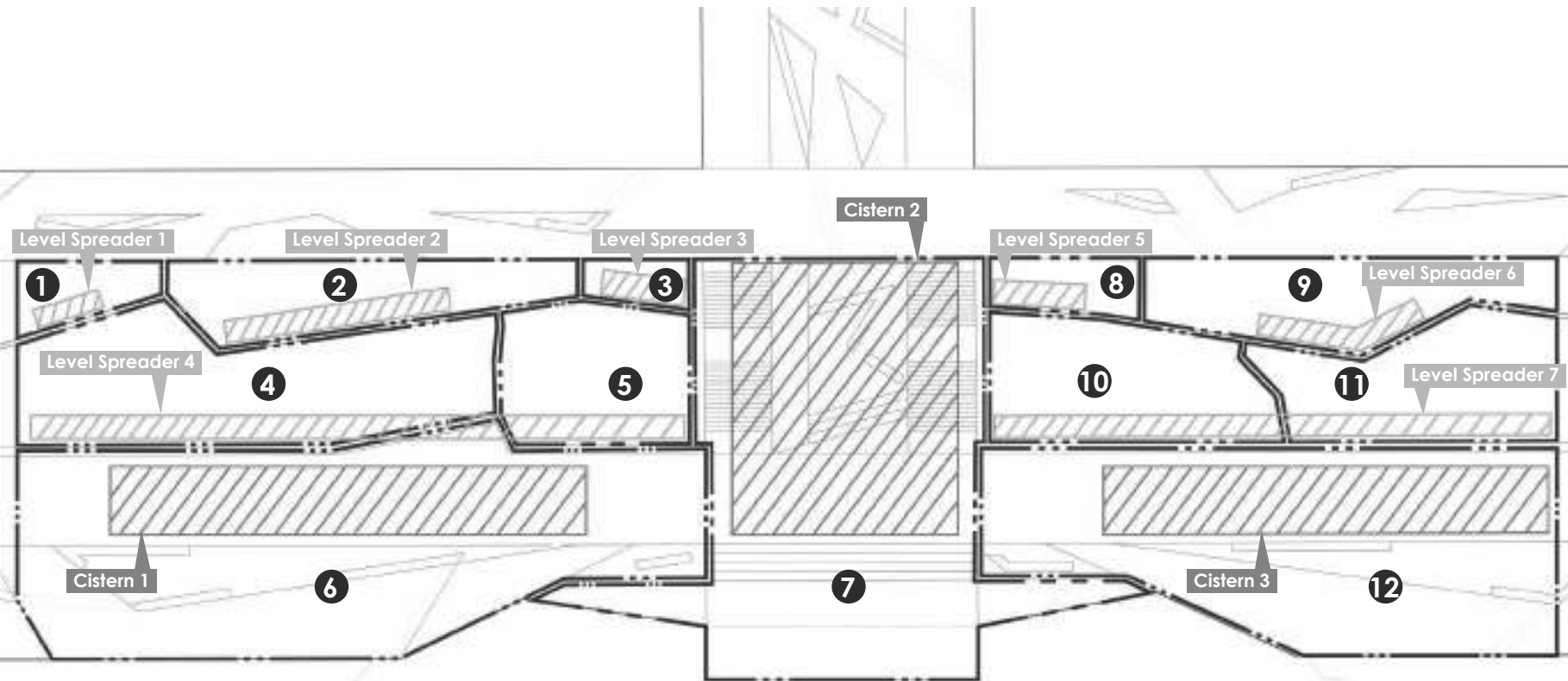
| CISTERN 1 | Area (ft ²) | Depth (ft) | Storage Volume (ft ³) |
|--------------|-------------------------|------------|-----------------------------------|
| | 1,575 | 2 | 3,150 |
| TOTAL= 3,150 | | | |

| CISTERN 2 | Area (ft ²) | Depth (ft) | Storage Volume (ft ³) |
|--------------|-------------------------|------------|-----------------------------------|
| | 3,000 | 2 | 6,000 |
| TOTAL= 6,000 | | | |

| CISTERN 3 | Area (ft ²) | Depth (ft) | Storage Volume (ft ³) |
|--------------|-------------------------|------------|-----------------------------------|
| | 1,575 | 2 | 3,150 |
| TOTAL= 3,150 | | | |

TOTAL CISTERN STORAGE = 12,300

Figure 8.17 – Stormwater Calculations



The stormwater management strategies exhibited in the site design were based off the 6 hour 100 year storm event. The existing site conditions consisted primarily of leftover infill from the Marquette Interchange expansion project resulted in the post q value (2.5) being 0.29 CFS's higher than the pre q value (2.21).

In order to compensate for the unusable soil and newly designed terracing along the river substantial regrading efforts were taken, dividing the site into 12 micro-watersheds. Each of these watersheds either utilize a level spreader or cistern determined by the area of the design. Level spreaders were chosen underneath the terraced plantings to provide larger portion of infiltration into the ground, whereas the cisterns beneath the hardscape look to solely collect for later usage.

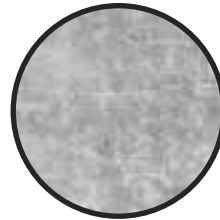
Level Spreader 1: Micro-Watershed 1
 Level Spreader 2: Micro-Watershed 2
 Level Spreader 3: Micro-Watershed 3
 Level Spreader 4: Micro-Watershed 4,5
 Level Spreader 5: Micro-Watershed 8
 Level Spreader 6: Micro-Watershed 9
 Level Spreader 7: Micro-Watershed 10,11

Cistern 1: Micro-Watershed 6
 Cistern 2: Micro-Watershed 7
 Cistern 3: Micro-Watershed 12

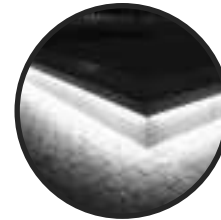
Figure 8.18 – Micro-Watershed Analysis

Seat Wall and Level Spreader Construction Detail

The concrete seat wall is an essential component to the terraced planting on the site. To help tell the story of the industrial past the three main materials used were concrete, steel, and local reclaimed wood. This seating element also contributes to the overall stormwater plan in having a level spreader along the back side to collect and infiltrate water runoff. Under the lip of the concrete base is a LED light strip which would run all along the seating areas to draw your eye down the linear path.



Concrete
Standard Color and Finish



Klus LED Extrusion
White Color



Reclaimed Hardwood
Locally Sourced

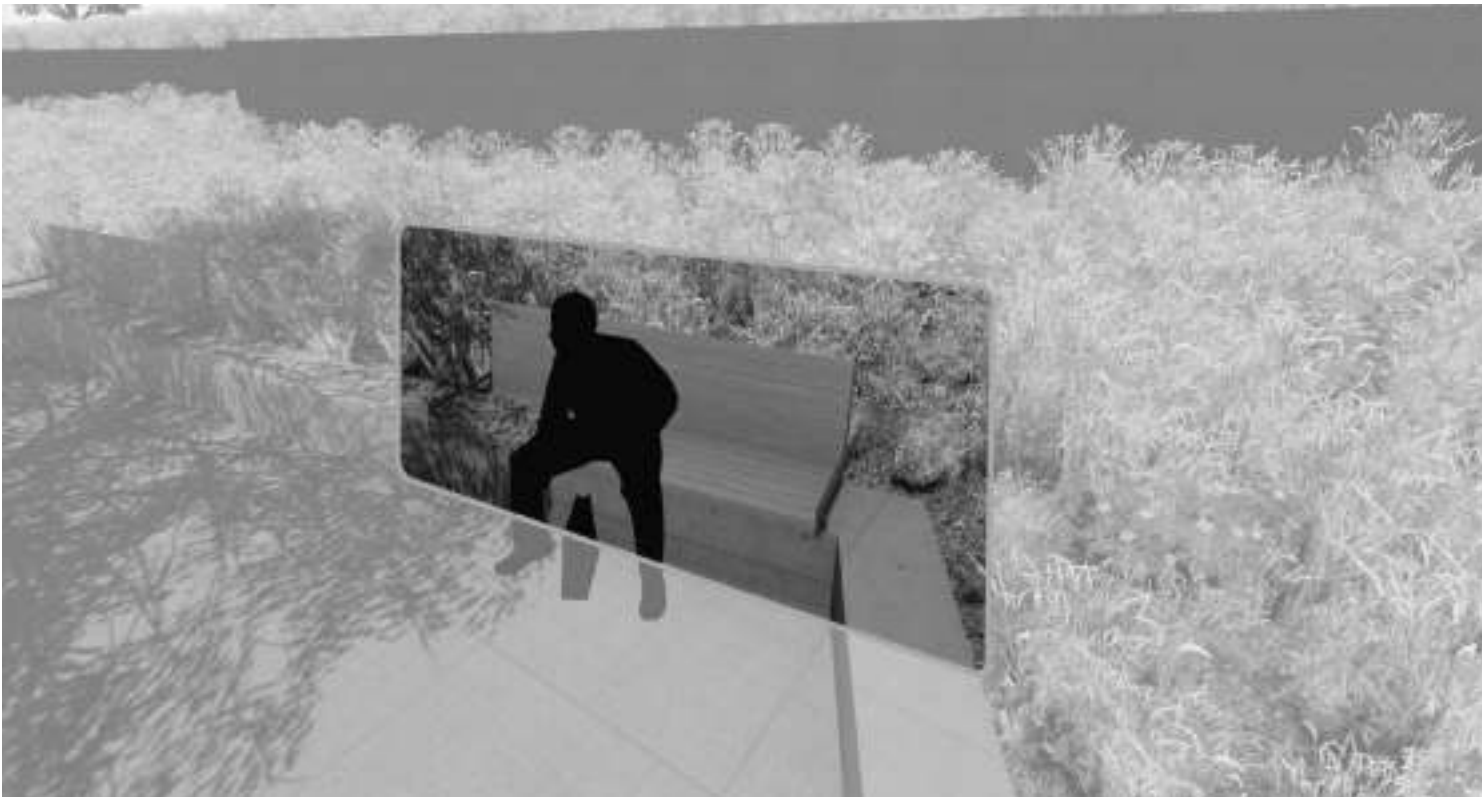
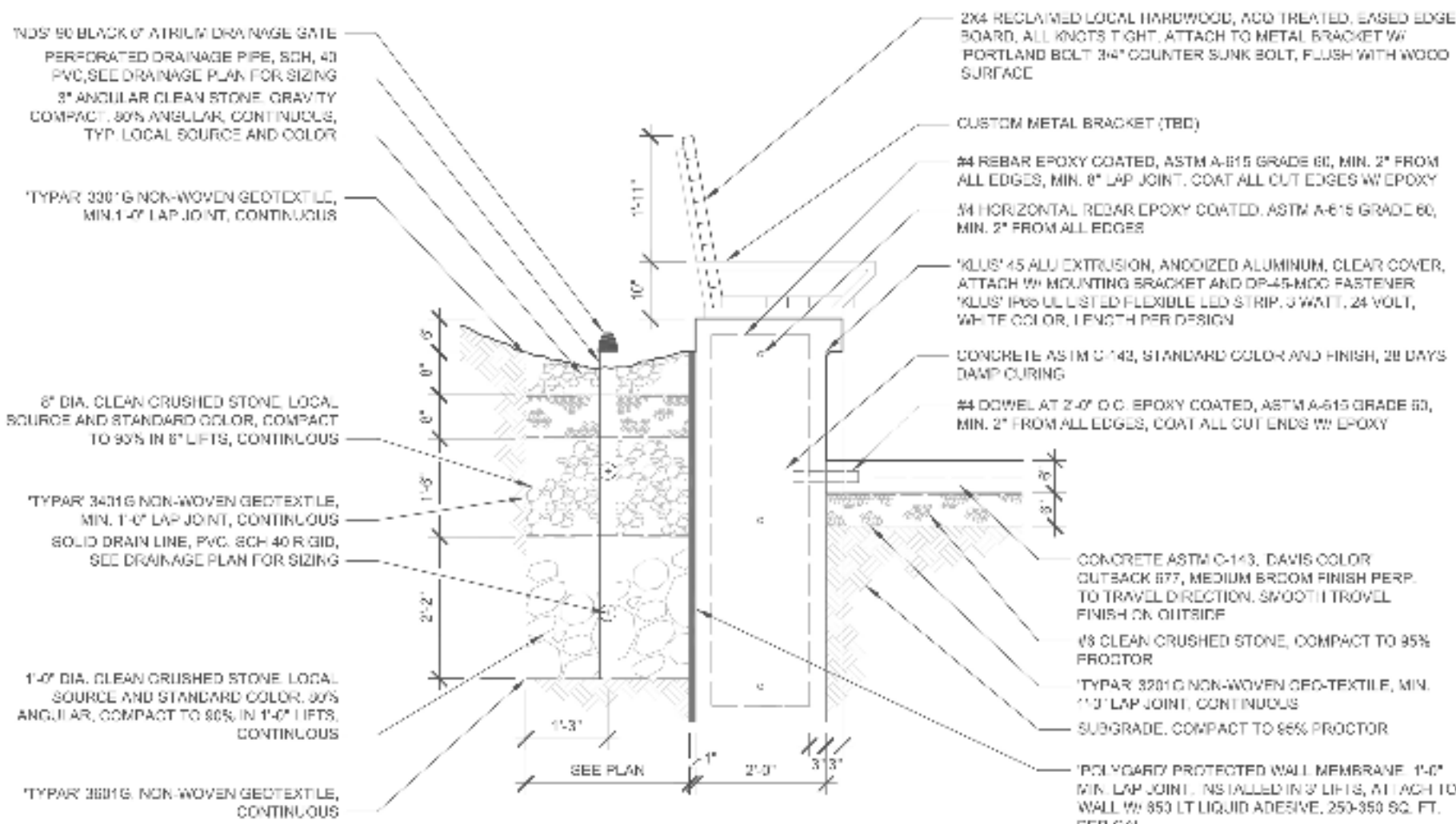


Figure 8.19 - Seat Wall Detail Highlight

Figure 8.20 – Construction Material Photos 2



C SEAT WALL AND LEVEL SPREADER DETAIL
NOT TO SCALE

Figure 8.21 – Seat Wall Construction Detail

Planting Plan

| Key Symbol | Scientific Name | Common Name | Qty | Size | Root Condition | Notes | Height | Spread |
|-----------------------------------|--------------------------------|---------------------------|-----|-----------------|----------------|---------------|----------|----------|
| Trees | | | | | | | | |
| AR | Acer rubrum 'Red Rockell' | Red Rockell Red Maple | 11 | 2" 2.5' Caliper | B&S | Single Leader | 30-40 ft | 30-40 ft |
| AS | Acer saccharinum | Silver Maple | 2 | 2" 2.5' Caliper | B&S | Single Leader | 40-60 ft | 30-40 ft |
| RI | Rhus glabra | River Birch | 4 | 1" 1.5' Caliper | B&S | Multi-trunk | 30-40 ft | 30-40 ft |
| CO | Celtis occidentalis | Common Hackberry | 4 | 2" 2.5' Caliper | B&S | Single Leader | 50-70 ft | 50-70 ft |
| F | Fraxinus pennsylvanica 'Royal' | Royal Green Ash | 4 | 1" 1.5' Caliper | B&S | Single Leader | 20-30 ft | 20-30 ft |
| QB | Quercus imbricaria | Swamp White Oak | 3 | 2" 2.5' Caliper | B&S | Single Leader | 40-60 ft | 40-60 ft |
| QM | Quercus macrocarpa | Big Oak | 2 | 2" 2.5' Caliper | B&S | Single Leader | 40-60 ft | 40-60 ft |
| L | Tilia 'Harvest Gold' | Harvest Gold Linden | 8 | 2" 2.5' Caliper | B&S | Single Leader | 25-40 ft | 25-40 ft |
| Perennials | | | | | | | | |
| v | oxycanthum vulgare | Oxeye Daisy | 5 | 18" T | Container | | 1-2 ft | 1-2 ft |
| c | cardinalis | Cardinal Flower | 6 | 18" T | Container | | 3-4 ft | 2 ft |
| ls | lobelia siphilitica | Green and Yellow | 22 | 18" T | Container | | 1-2 ft | 12-18 in |
| mf | monarda fistulosa | Wild Bergamot | 4 | 24" T | Container | | 4 ft | 1-2 ft |
| os | rudbeckia hirta | Sensitive Fern | 10 | 24" T | Container | | 1-3 ft | 1-3 ft |
| ra | rudbeckia aurea | Golden Aster | 13 | 12" T | Container | | 1 ft | 12-18 in |
| pm | phlox maculata | Wild Sweet William | 1 | 24" T | Container | | 3 ft | 12-18 in |
| rl | rudbeckia triloba | Brown-eyed Susan | 9 | 18" T | Container | | 5 ft | 1-3 ft |
| sa | syntriehium augustinifolium | Blue Note Blue-eyed Grass | 37 | 12" T | Container | | 12-18 in | 12-18 in |
| Grasses | | | | | | | | |
| ty | Panicum virgatum | Switchgrass | 44 | 18" T | Container | | 3-5 ft | 2-3 ft |
| Seed Mixes | | | | | | | | |
| No Mow Grass Seed Mix w/ Ryegrass | | 2 lbs per Acre | | | | | | |
| Lawn Control Grass Seed Mix | | 12 lbs per Acre | | | | | | |

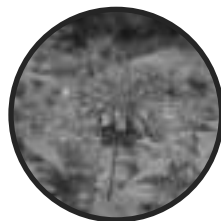
Selected Plants



Celtis Occidentalis
Common Hackberry



Tilia 'Harvest Gold'
'Harvest Gold' Linden



Monarda fistulosa
Wild Bergamot



Rudbeckia triloba
Brown-eyed Susan



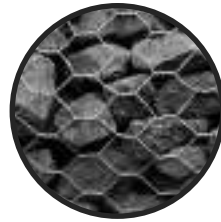
No Mow Grass Mix

Figure 8.22 – Plant List

Figure 8.23 – Selected Plant Photos

Gabion Wall Construction Detail

The gabion retaining wall plays an impactful role in allowing water to naturally flow and infiltrate the ground. Again we see the industrial theme with the selection of recycled concrete as fill material and reclaimed local wood as the two main materials used. This feature also provides an LED light strip underneath the lip of the wood to provide accent lighting to the main boardwalk seating lights.



Galvanized Wire Mesh
Standard Color and Finish



Recycled Concrete
Locally Sourced



Reclaimed Hardwood
Locally Sourced



Figure 8.25 – Gabion Wall Highlight

Figure 8.26 – Construction Material Photos 3

2"X14" RECLAIMED LOCAL HARDWOOD, ACQ TREATED, EASED EDGE BOARD, BEHR PREMIUM TRANSPARENT WEATHERPROOFING WOOD FINISH, ATTACH W/ #10 2-1/2" WOOD SCREWS, CERAMIC COATED

'KLUS' LED 45 ALU EXTRUSION, ANODIZED ALUMINUM, CLEAR COVER, ATTACH W/ MOUNTING BRACKET AND DP-45-MOC FASTENER

'KLUS' IP 65 UL LISTED FLEXIBLE LED STRIP, 3 WATT, 24 VOLT, WHITE COLOR, LENGTH PER DESIGN

TERRA AQUA' GALVANIZED WIRE MESH DOUBLE TWISTED GABION BASKET, ASTM A975-97, STANDARD COLOR AND FINISH, WIRE TIES PER MANUFACTURER SPECS.

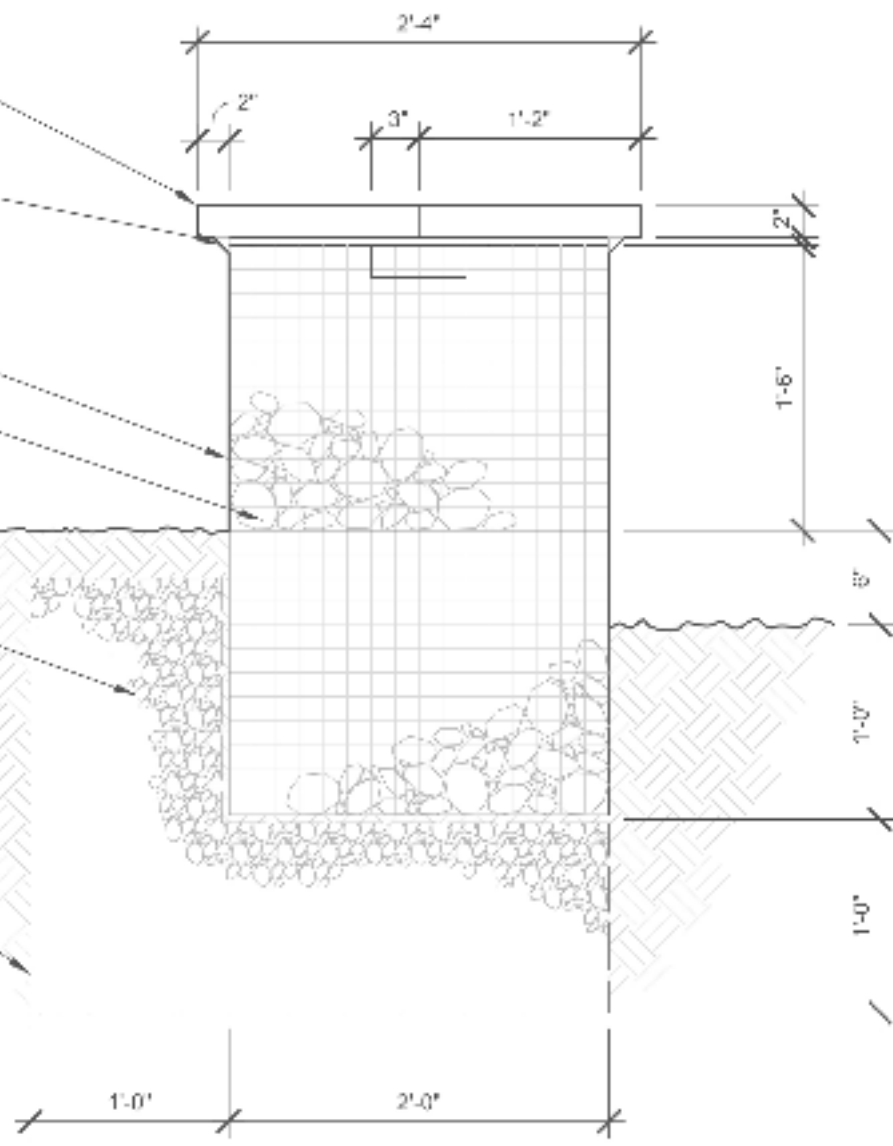
RECYCLED CONCRETE, 3-5" DIA.

FINISH GRADE

#8 CLEAN CRUSHED STONE, 95% COMPACTED IN 6" LIFTS, STONE MUST BE 80% ANGULAR

SUBGRADE COMPACT TO 90% PROCTOR

'TYPAR' 3301G, NON-WOVEN GEOTEXTILE, MIN. 1'-0" LAP JOINT, CONTINUOUS



B

GABION WALL DETAIL
NOT TO SCALE

Figure 8.27 – Gabion Wall Construction Detail

Conclusion



Figure 9.01 – Three Bridges Park Aerial Photo

EXPECTED RESULTS

The goal of the East Valley Fab District is to build off the foundation of providing a thriving urban industrial district, which explores means in which integrating this into a water front setting is equitable to all. This can be related back to the research topic of Landscape Urbanism Theory. As our communities continue to advance and expand the need for equitable green spaces will become ever so vital. Future development should look to bridge the gap between urbanism and ecology with the result of economic prosperity in our urban environments. With endless opportunities this proposal looks to begin constructing that bridge between urbanism and ecology in the Menomonee Valley.

REFLECTION

The UW Senior Landscape Architecture Capstone process has provided countless hours of gratifying learning experiences that will be directly applicable to how real world design problems are solved through analysis and design. Getting an opportunity to collaborate with my client, peers, and professors during the process will provide an instrumental role in my transition into a professional career. I look forward to watching what the future holds for the East Valley Fab District, and hope that it helps anchor the Menomonee Valley as a leader in sustainable development and environmental stewardship for years to come.

This project offered me a greater sense of appreciation for the profession of landscape architecture and an excitement for what the future holds.



Figure 9.02 – Historical Menomonee Valley Aerial Photo

Appendix



Figure 10.01 - Hank Aaron State Trail Bridge

TIME LOG SEMESTER 1

| Day | Date | Task/Work Code | Hours Worked | Travel Time | Cumulative Totals |
|----------------|----------------------|--|--------------|-------------|-------------------|
| Week 1 | | | | | |
| | 09.2.15 | M | 0.00 | | |
| | 09.3.15 | M | 0.00 | | |
| | Total week 1 | | 0.00 | | 0.00 |
| Week 2 | | | | | |
| | 09.9.15 | | 0.00 | | |
| | 09.10.15 | Writing Emails (W) | 0.25 | | |
| | 09.11.15 | | 0.00 | | |
| | Total week 2 | | 0.25 | | 0.25 |
| Week 3 | | | | | |
| | 09.15.15 | Sending Emails (W) | 0.25 | | |
| | 09.16.15 | O | 1.00 | | |
| | 09.17.15 | Sending Emails (W) / Workflow diagram design | 3.00 | | |
| | 09.18.15 | Sending Emails (W) / Workflow diagram design | 3.50 | | |
| | Total week 3 | | 7.75 | | 8.00 |
| Week 4 | | | | | |
| | 09.22.15 | Workflow diagram design and layout | 7.00 | | |
| | Total week 4 | | 7.00 | | 15.00 |
| Week 5 | | | | | |
| | 09.27.15 | Writing Design Ethics Statement (W) | 3.00 | | |
| | 10.01.15 | Preparing Literature Review (W) | 3.00 | | |
| | 10.02.15 | Workflow Diagram (D) | 1.50 | | |
| | Total week 5 | | 7.50 | | 22.50 |
| Week 6 | | | | | |
| | 10.04.15 | Preparing Literature Review (W) | 3.00 | | |
| | 10.05.15 | Sending Emails (W) | 0.50 | | |
| | 10.06.15 | Introduction Proposal (W) | 1.50 | | |
| | 10.07.15 | Introduction Proposal (W) | 3.00 | | |
| | 10.08.15 | Travel (T) | 1.00 | | |
| | 10.09.15 | Client Meeting and Travel | 1.50 | 2.50 | |
| | Total week 6 | | 10.50 | | 33.00 |
| Week 7 | | | | | |
| | 10.13.15 | Precedent Study Research (O) | 1.00 | | |
| | 10.15.15 | Precedent Study Research (O) | 1.00 | | |
| | 10.18.15 | Precedent Study Research (O) | 2.00 | | |
| | Total week 7 | | 4.00 | | 37.00 |
| Week 8 | | | | | |
| | 10.19.15 | Precedent Study Research (O)/ Presentation Pre | 3.00 | | |
| | 10.20.15 | Client Emails (W) | 0.25 | | |
| | 10.21.15 | Client Emails (W) | 0.25 | | |
| | Total week 8 | | 3.50 | | 40.50 |
| Week 9 | | | | | |
| | 10.25.15 | Regional Analysis | 4.00 | | |
| | 10.26.15 | Regional Analysis | 4.00 | | |
| | 10.27.15 | Regional Analysis | 6.00 | | |
| | 10.28.15 | Regional Analysis | 9.00 | | |
| | 10.29.15 | Regional Analysis | 5.50 | | |
| | 10.30.15 | Regional Analysis/ Document Setup | 5.5 | | |
| | Total week 9 | | 34.00 | | 74.50 |
| Week 10 | | | | | |
| | 11.01.15 | Regional/Community Analysis | 6.50 | | |
| | 11.03.15 | Regional/Community Analysis | 3.00 | | |
| | 11.04.15 | Regional/Community Analysis | 6.00 | | |
| | 11.05.15 | Regional/Community Analysis/Emails | 7.00 | | |
| | 11.06.15 | | | | |
| | Total week 10 | | 22.50 | | 97.00 |

| Day | Date | Task/Work Code | Hours Worked | Travel Time | Cumulative Totals |
|----------------|----------------------|--|--------------|-------------|-------------------|
| Week 11 | | | | | |
| | 11.10.15 | Draft Written Proposal | 3.75 | | |
| | 11.11.15 | Draft Written Proposal/Document Layout | 4.50 | | |
| | 11.12.15 | Regional Analysis/Document Layout/Site Visiti | 5.00 | 2.50 | |
| | 11.13.15 | Document Layout/Design | 5.00 | | |
| | 11.14.15 | Document Layout/Design | 8.50 | | |
| | 11.15.15 | Document Layout/Design/Regional Design | 12.00 | | |
| | Total week 11 | | 38.75 | | 135.75 |
| Week 12 | | | | | |
| | 11.16.15 | Draft Presentation/Regional Analysis | 4.00 | | |
| | 11.17.15 | Document Layout/Regional Analysis | 5.50 | | |
| | 11.19.15 | | 2.50 | | |
| | 11.20.15 | Regional Analysis/Document Layout Regional Analysis/Community Analysis/Document Layout | 9.00 | | |
| | 11.21.15 | | 9.50 | | |
| | Total week 12 | | 30.50 | | 166.25 |
| Week 13 | | | | | |
| | 11.22.15 | Community Analysis | 4.00 | | |
| | 11.23.15 | Community Analysis | 4.00 | | |
| | 11.24.15 | Presentation Layout/Community Analysis | 9.50 | | |
| | 11.25.15 | Site Analysis | 6.25 | | |
| | 11.27.15 | Site Analysis/Presentation Layout | 11.25 | | |
| | 11.28.15 | Site Analysis/Program Development | 14.00 | | |
| | 11.29.15 | Program Development | 14.50 | | |
| | Total week 13 | | 63.50 | | 229.75 |
| Week 14 | | | | | |
| | 11.30.15 | Presentation Layout | 13.00 | | |
| | 12.4.15 | Presentation Edits | 6.00 | | |
| | 12.6.15 | Presentation Edits | 4.75 | | |
| | Total week 14 | | 23.75 | | 253.50 |
| Week 15 | | | | | |
| | 12.12.15 | Document Layout | 6.00 | | |
| | 12.13.15 | Document Layout | 12.00 | | |
| | 12.14.15 | Document Layout | 12.00 | | |
| | Total week 15 | | 30.00 | | 283.50 |

Total Semester 1: 283.50

Total Semester 2: 553.0

Total Project Hours: 836.5

TIME LOG SEMESTER 2

| Day | Date | Task/Work Code | Hours Worked | Travel Time | Cumulative Totals |
|--|---------------------|---|--------------|-------------|-------------------|
| Code: D (design), P (presentation/prep), M (meeting), T (travel), O (organization/research), W (writing), G (Graphics) | | | | | |
| Week 1 | | | | | |
| | 01.18.16 | | 0.00 | | |
| | Total week 1 | | 0.00 | | 0.00 |
| Week 2 | | | | | |
| | 01.25.16 | D- Conceptual Design | 3.00 | | |
| | 01.26.16 | D- Conceptual Design | 4.00 | | |
| | 01.28.16 | D- Conceptual Design/Site Design | 5.00 | | |
| | Total week 2 | | 7.00 | | 7.00 |
| Week 3 | | | | | |
| | 02.1.16 | D- Site Design | 8.00 | | |
| | 02.3.16 | D- Site Design/Construction Details | 8.00 | | |
| | 02.4.16 | D- Site Design | 4.00 | | |
| | Total week 3 | | 20.00 | | 27.00 |
| Week 4 | | | | | |
| | 02.8.16 | D- Construction Details | 2.00 | | |
| | 02.9.16 | D- Site Design/Construction Details | 8.00 | | |
| | 02.10.16 | D- Master Plan | 4.00 | | |
| | 02.11.16 | D-Master Plan/Site Plan | 6.00 | | |
| | Total week 4 | | 20.00 | | 47.00 |
| Week 5 | | | | | |
| | 02.15.16 | D- Master Plan | 4.00 | | |
| | 02.16.16 | D- Master Plan/Site Plan | 4.00 | | |
| | 02.17.16 | D- Master Plan | 8.00 | | |
| | 02.18.16 | D- Master Plan | 6.50 | | |
| | Total week 5 | | 22.50 | | 69.50 |
| Week 6 | | | | | |
| | 02.22.16 | D- Master Plan/Site Plan/Planting Plan | 10.00 | | |
| | 02.23.16 | D- Construction Details/Planting Plan/SWM | 3.50 | | |
| | 02.26.16 | D- Master Plan | 6.00 | | |
| | 02.27.16 | D- Master Plan | 7.00 | | |
| | 02.28.16 | D- Master Plan/Site Plan | 8.50 | | |
| | Total week 6 | | 35.00 | | 104.50 |
| Week 7 | | | | | |
| | 02.29.16 | D- Site Design | 13.00 | | |
| | | D- Site Design/Planting Plan/Construction | | | |
| | 03.1.16 | Details | 7.75 | | |
| | 03.2.16 | D- Site Design | 9.50 | | |
| | 03.3.16 | D- Site Design | 6.50 | | |
| | 03.4.16 | D- Site Design | 9.00 | | |
| | | D- Site Design/Planting Plan/Construction | | | |
| | 03.5.16 | Details | 8.25 | | |
| | 03.6.16 | D- Construction Details | 12.50 | | |
| | Total week 7 | | 66.50 | | 171.00 |
| Week 8 | | | | | |
| | 03.7.16 | D- Construction Details/Grading Plan | 8.50 | | |
| | 03.8.16 | D- Grading Plan | 4.00 | | |
| | 03.9.16 | D- Grading Plan | 12.00 | | |
| | 03.10.16 | D- Site Design/Grading Plan | 12.00 | | |
| | 03.11.16 | D- Grading Plan | 15.00 | | |
| | 03.12.16 | D- Site Design/Grading Plan | 14.00 | | |
| | 03.13.16 | D- Site Design/Grading Plan/SWM | 12.00 | | |
| | Total week 8 | | 77.50 | | 248.50 |
| Week 9 | | | | | |
| | 03.14.15 | D- Planting Plan/Grading Plan/SWM | 24.00 | | |
| | Total week 9 | | 24.00 | | 272.50 |

| Day | Date | Task/Work Code | Hours Worked | Travel Time | Cumulative Totals |
|--|----------------------|--|--------------|-------------|-------------------|
| Code: D (design), P (presentation/prep), M (meeting), T (travel), O (organization/research), W (writing), G (Graphics) | | | | | |
| Week 10 | | | | | |
| | 03.29.16 | G- Construction Details | 6.00 | | |
| | 03.30.16 | G- Construction Details | 5.00 | | |
| | 03.31.16 | G- Construction Details | 6.00 | | |
| | 04.1.16 | G- Construction Details | 5.50 | | |
| | 04.3.16 | G- Construction Details/Master Plan | 9.00 | | |
| | Total week 10 | | 31.50 | | 304.00 |
| Week 11 | | | | | |
| | 04.4.16 | G- Master Plan | 10.00 | | |
| | 04.5.16 | G- Master Plan | 10.00 | | |
| | 04.6.16 | G- Master Plan | 10.00 | | |
| | 04.7.16 | G- Master Plan | 11.00 | | |
| | 04.8.16 | G- Master Plan | 9.00 | | |
| | 04.9.16 | G- Master Plan | 10.00 | | |
| | 04.10.16 | G- Master Plan/Sketchup Model | 10.00 | | |
| | Total week 11 | | 70.00 | | 374.00 |
| Week 12 | | | | | |
| | | G- Master Plan/Sketchup Model/Board | | | |
| | 04.11.16 | Layout | 13.00 | | |
| | 04.12.16 | G- Site Design/Board Layout | 7.00 | | |
| | 04.13.16 | G- Sketchup Model | 5.00 | | |
| | Total week 12 | | 25.00 | | 399.00 |
| Week 13 | | | | | |
| | 04.18.16 | G- Sketchup Model | 4.00 | | |
| | 04.19.16 | G- Sketchup Model/Diagrams | 5.00 | | |
| | 04.20.16 | G- Sketchup Model/Master Plan | 10.00 | | |
| | 04.21.16 | G- Sketchup Model | 9.00 | | |
| | 04.22.16 | P- Presentation Layout | 10.00 | | |
| | 04.23.16 | P- Presentation Layout | 10.00 | | |
| | | G- Site Design/Sketchup Model/Master Plan/Diagrams | | | |
| | 04.24.16 | | 11.00 | | |
| | Total week 13 | | 59.00 | | 458.00 |
| Week 14 | | | | | |
| | 04.25.16 | P- Presentation Layout | 13.50 | | |
| | 04.26.16 | P- Presentation Layout | 11.50 | | |
| | 04.28.16 | P- Presentation Edits | 4.00 | | |
| | 04.29.16 | P- Presentation Edits | 3.00 | | |
| | Total week 14 | | 32.00 | | 490.00 |
| Week 15 | | | | | |
| | 05.2.16 | P- Presentation Edits | 8.00 | | |
| | 05.3.16 | P- Presentation Edits | 5.00 | | |
| | 05.4.16 | O- Document Layout | 2.00 | | |
| | 05.5.16 | O- Document Layout | 6.00 | | |
| | 05.6.16 | O- Document Layout | 6.00 | | |
| | Total week 15 | | 27.00 | | 517.00 |
| Week 16 | | | | | |
| | 05.9.16 | O- Document Layout | 5.00 | | |
| | 05.10.16 | O- Document Layout | 10.00 | | |
| | 05.11.16 | W- Document Layout | 10.00 | | |
| | 05.12.16 | W- Document Layout | 11.00 | | |
| | Total week 16 | | 36.00 | | 553.00 |

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THANK YOU

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