Fox - Wisconsin Rivers Heritage Parkway

Regional Development of the Lower Fox River Section & Design Development of the Navigational Locks Within the City of Appleton

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Information & Support from: East Central Wisconsin Regional Planning Commission & Friends of the Fox Advocacy Group

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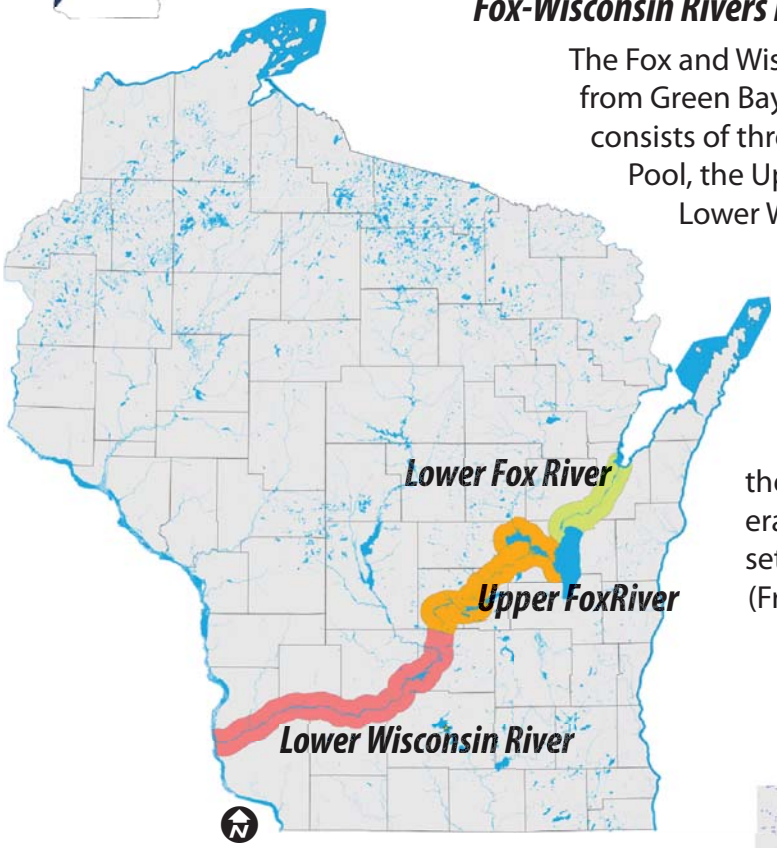
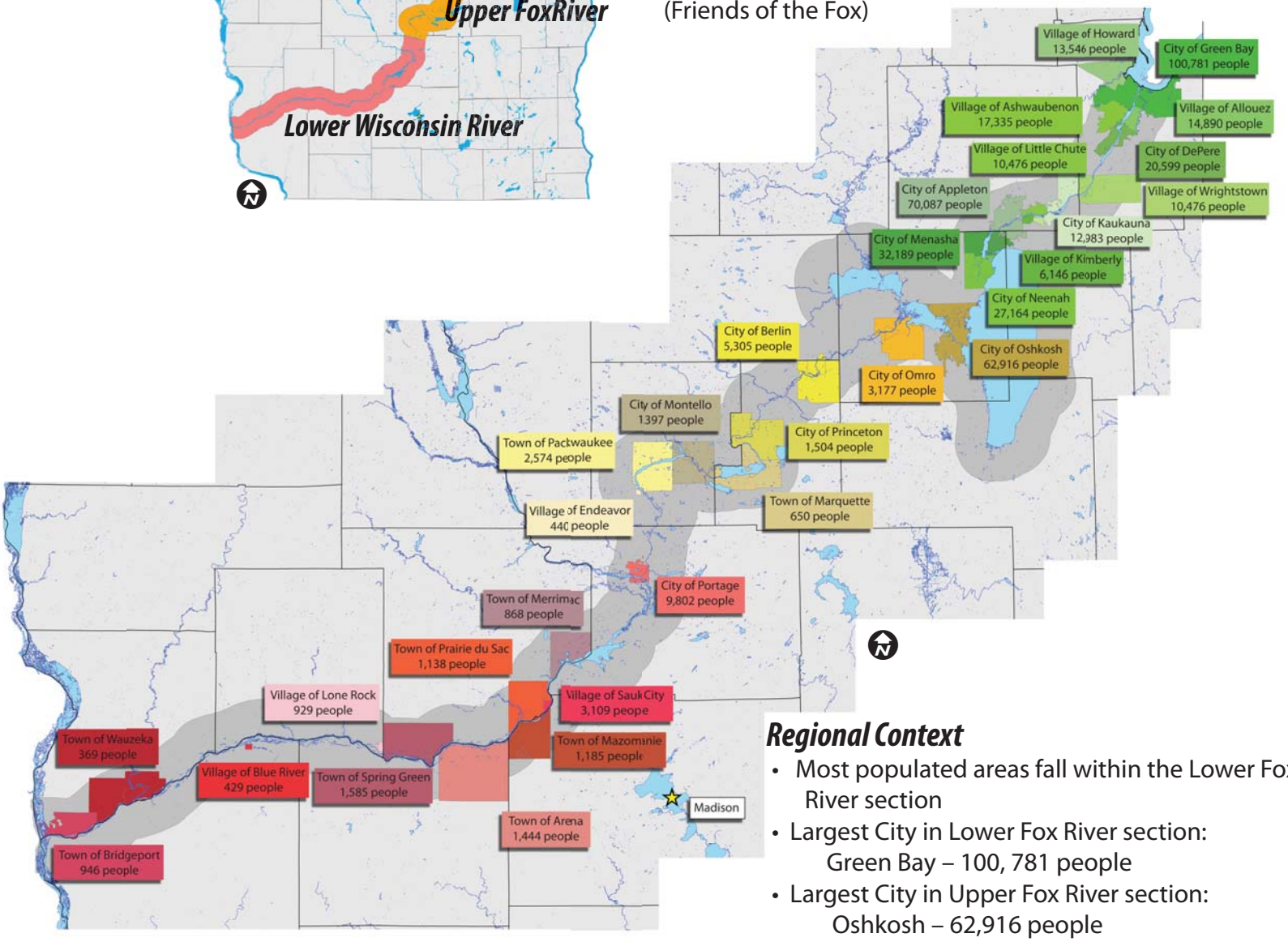
Parkway Idea & Regional Context

Fox-Wisconsin Rivers Heritage Parkway



The Fox and Wisconsin rivers stretch approximately 275 miles from Green Bay southwest to Prairie du Chien. The waterway consists of three segments- the Lower Fox-Lake Winnebago Pool, the Upper Fox-Wolf-Lake Winnebago pool, and the Lower Wisconsin River- connected midstream by the historic Portage Canal. Made famous by the 1673 route of French explorers Marquette and Joliet, the Fox and Wisconsin rivers served a critical role in the opening of the Northwest Territory. This historic event opened up the Midwestern part of what would later become the United States of America. Additional historic eras include early Native American and European settlements, as well as the rivers' many industrial uses. (Friends of the Fox)



Regional Context

- Most populated areas fall within the Lower Fox River section
- Largest City in Lower Fox River section: Green Bay – 100, 781 people
- Largest City in Upper Fox River section: Oshkosh – 62,916 people
- Largest City in Lower Wisconsin River section: Portage - 9,802 people

Project Overview & Clients

"Establishing the Heritage Parkway will tie the current landscape with the history which brought us to it and allows for that history to come alive"

Project Overview

The Fox-Wisconsin Heritage Parkway will be a non-continuous parkway with the purpose of highlighting and enhancing the unique heritage of the State of Wisconsin by exemplifying and promoting the cultural, historical, recreational, and natural resources of this river corridor. The planned lineal parkway will complement numerous other scattered multi-purpose parks, historic sites, tourist attractions and wildlife areas creating a single system of sites.

The boundaries follow the Marquette and Joliet route of 1673 and incorporate the Lower Fox, the Upper Fox, and the Lower Wisconsin rivers. Establishing the Heritage Parkway will tie the current landscape with the history, which brought us to it and allows for that history to come alive. It will allow residents and visitors to roam the area by power boat, canoe or kayak along the water trail, by foot or wheel along the many walking and biking trails, or by car on a driving tour. As they roam they will encounter pieces of the many stories that have occurred here.

Whether Native American, early European settler, or the manufacturing industries which helped us prosper, we all have the river in common. Therefore, each of our stories is the same story and to tell them, to keep them alive, to enhance the pride we already feel in our home, that is what the Parkway is all about. (Friends of the Fox)

Clients

The goal for the Heritage Parkway is to become nationally designated as a Historic Corridor. On this project I have been working with numerous groups that are all working together to achieve this vision. East Central Wisconsin Regional Planning Commission, the first group I started working with and the suppliers of all of my background and base materials, will develop a Heritage Parkway feasibility plan in May. They will put together a document on the entire parkway from Green Bay to Prairie du Chien, with suggestions and economic studies on the parkway to help get the national heritage designation. My work is an icebreaker of sorts for the project, or long-range vision. I have gathered resources and information and generated ideas for possible program development along one section of the parkway. My work may be used as graphic tools or advertisement for support, awareness to the community, and initial planning efforts.

The Friends of the Fox, a non-profit advocacy group for the river, is another group that I am working with. They are very involved in the project as well and have helped with the efforts to get the initial ideas of this project started. They have been very active already making some great accomplishments along the river, and have also done extensive work establishing some of the main concepts and themes behind the parkway that you will see throughout the introductory parts of this document.

The Fox River Navigational System Authority is another interested party because they are the current owners/caretakers of the lock systems and are looking forward to developing the existing land and giving back to the communities that they serve.

Heritage Parkway Focus Areas *(Friends of the Fox)*

All of the goals that are generated during the development of the Parkway will be be directly related to any one or more of these four major focus areas:

- **History**
- **Health and Recreation**
- **Increased Public Access**
- **Environmental Stewardship**

Parkway Interpretive Themes *(Friends of the Fox)*

Theme #1: Native Peoples and the Trail of the Serpent *(Peopling Places)*

The Fox-Wisconsin River corridor shows evidence of Indian life reaching as far back as 9,000 BCE, with a rich history in the past 300 years. These native peoples heavily utilized the river, fishing, gathering wild rice, hunting, and locating their camps and villages along the waters' edge. Eventually, the region became home to the Menominee and Ho-Chunk tribes. With an estimated population of 20,000, these native peoples were the first to greet the Europeans when they arrived in the 1600s. From the 1600s to 1800s, the Sauk, Miami, Potawatomi, Fox, Kickapoo, Mascouten, and Oneida came to the area after being displaced by whites and forced by wars. These tribes contributed much to the early culture and exploration of the area, and their technology, traditions, folklore remain evident in the landscape. Of all the inhabitants of the Fox-Wisconsin corridor, the native peoples of this land, both past and present, have the longest and deepest connection to this place.

Theme #2: *Route of Discovery – Marquette and Joliet* *(Changing the Role of the United State in the World Community)*

For 150 years, Wisconsin was under the control of the French as part of New France. It was during this time, from the early 1600s to 1760, that the first white men entered this part of North America. Coming to explore, exploit, and prophesize, these men had a lasting impact on the history, culture, and landscape of the Fox-Wisconsin corridor. Two of these explorers were Louis Joliet and Jacques Marquette, commissioned by the governor of New France to find a route to the Northwest Passage. In 1673, the pair were the first explorers to navigate the entire length of the Fox and Wisconsin Rivers. Their travels, along with those of Nicolet, Allouez, Radisson, and others, paved the way for further development of the American West. The boundaries of the Fox-Wisconsin Heritage Parkway follow their momentous journey, from Green Bay to the Mississippi River.

Theme #3: Waves of Immigration *(Peopling Places)*

In the 1800s, the frontier continued to move west, bringing American settlers and European immigrants to help settle and develop Wisconsin, particularly areas of the Fox and Wisconsin Rivers for much of the remaining century. The new settlers joined the American Indians and French populations, bringing with them a new entrepreneurial spirit. These new settlers came in distinct waves throughout the 18 and early 1900s, seeking wealth, freedom, and family along the shores of Wisconsin's rivers, making Wisconsin one of the most rapidly growing regions in the country. Their settlement had a profound influence on the character of the state, and had a lasting impact on the rivers, forever changing their nature and purpose.

Theme #4: The Hardest Working River Highway *(Transforming the Environment/Expanding Science and Technology)*

In the 1800s, the American frontier continued to push westward, bringing settlers to the banks of the Wisconsin and Fox Rivers. At that time, most travelers and goods came by way of the Mississippi, making a long and expensive journey around the country. However, with the arrival of steamships and the success of eastern canal systems, particularly the Erie Canal in 1825, early planners saw the potential to develop the corridor as a water highway system. Situated between two of the most navigable water routes in the country, the Fox and Wisconsin Rivers would be a direct link between the Great Lakes and the Mississippi, making the state an important commercial center and stopping place along the water route through the continent. Thus, the state and private companies embarked on a thirty year quest—to create the first industrial water highway of canals, locks, and dams. Not only would this route save time and money, early investors believe this system had the potential to revolutionize travel throughout the bourgeoning nation. While their plans did not quite come to fruition, this system remains today, a symbol of a transformed environment. In an effort of revitalization, this water system continues to be an important part of our young nation's quest for prosperity and demonstrates the spirit of ingenuity.

Theme #5: Industry of Abundance *(Developing the American Economy)*

Since the coming of the first white settlers, industry has played an important role in shaping the landscape of the Fox and Wisconsin River corridor. Likewise, the rivers have had a significant impact on the industry of the region. Its position as a linkage between two of the United States' greatest water routes, its abundance of natural resources, and potential for power made this region a goldmine for potential investors, willing to take a gamble in the Wisconsin frontier. Thus, industries began to develop along the water route: mining, agriculture, logging, textiles, milling, all taking advantage the corridor's natural abundance. While some industries rose and fell with changing technology, others, such as the paper industry, made this region a production leader world-wide.

Theme #6: Currents of Conservation: Theory and Practice *(Creating Social Institutions)*

As the Fox-Wisconsin River corridor continued to develop throughout the mid to late nineteenth century, a concern of the natural world also began to emerge among newly urbanized Americans. These citizens saw the frontier landscape as an important spiritual and aesthetic resource, to be protected from the destruction of industrialization. On the fringe of the advancing frontier, Wisconsin became a forum for conservationist thought. Throughout the movement, the Wisconsin and Fox River corridor was a source of inspiration and dispute for early environmentalists. It was on the banks of these rivers that John Muir began his work, Aldo Leopold wrote his essays, and Increase Lapham pushed forward his ideas of settlement and industry. As the region developed, the conservation movement had a tremendous impact on the relationship between the rivers and industry. The effort, to balance human uses while protecting the natural world, continues today.

(All parkway themes developed by Friends of the Fox)

Water Trail Development

Water trail development can be a great tool for regions to expand their economic resources while creating more opportunities for recreational and cultural discovery of the local natural resources. In Lindsy Johnson's extensive master's thesis for the Community and Regional Planning Department at the University of Oregon (2002), she investigates the impacts water trails can have on local economies and communities. In her report she explains her findings of three case studies that she had conducted on the impacts that water trails had on the local economies. Her case studies were conducted in Lake County, Minnesota, Vernon County, Wisconsin, and Martin County, North Carolina. Some of the numbers were stunning; in eastern North Carolina the total dollar amount spent in one year by locals and non-locals as a direct result of the water trail was $103.9 million. A majority of the money made came from non-locals during overnight lodging and exploring downtown centers.

After completing the three different case studies Johnson comes to some general conclusions based on her studies on all water trail advantages, disadvantages, and recommendations for developing a water trail. Some of the advantages to a water trail were previously discussed on how they can have a dramatic effect on local economies, but there are also non-monetary benefits as well. Water trails can be a network of recreational and educational opportunities. Hiking and biking trails, greenways, museums, historic sites, parks and preserves can all be connected by water trails. Waterways contain important natural resources having ecological, geological, or archeological features, that offer excellent educational opportunities. In connecting all of these local amenities while boosting local economies the benefits are shared by entire regions and encourages good relationships between adjacent communities making them more of a cohesive region.

Some of the disadvantages or downfalls to water trails include; preservation on local character, environmental cleanliness, and local support and maintenance system. By introducing a large tourist destination comes the possibility of losing some of the original community character. Outsiders, whether it is tourists or commercial business, could start to come into the local communities and make them more crowded and limit access to locals, drive out established local businesses, or disrespect local residents and property owners. A lot of Johnson's findings from her case studies were environmental impacts of littering and human waste pollution due to the lack of proper facilities and maintenance of existing facilities. Some of her final recommendations address these issues by suggesting adequate access to proper facilities and establishing proper support and maintenance plans during the planning stages of the water trail.

Johnson's recommendations for developing a water trail are broken down into two different categories. She first addresses the planning and organizational needs for a water trail including; shared visions and communication between community officials, community members, neighboring residents, and existing partnerships. A support base needs to be established through local partnerships and groups and funding for the development of the trail as well as funding for maintenance needs to be addressed as well. Her other recommendations include infrastructure needs including, proper signage, establishing exploration of local history and culture through museums, nature centers and other cultural assets. The interpretation of history and linkages with the past should be utilized as a marketable concept. Finally some form of access to downtown markets should be created or highlighted to provide more activity as well as help increase the economic gains for the local communities (Johnson, 2002).

Project Scope

The scope of the entire Heritage Parkway Project is very large with a very significant ultimate goal of becoming designated as a National Heritage Corridor. The entire Parkway stretches across the entire state of Wisconsin, from the Bay of Green Bay to the Mississippi River. For my project I am focusing my regional design on only a third of the entire Parkway, the Lower Fox River region stretching from the Bay of Green Bay to Lake Winnebago. Within that section of the Parkway I am focusing my design efforts at three different sites of navigational locks in the city of Appleton. My goals are to assist in the development of the Parkway and provide a good foundation for the beginnings of a successful future National Heritage Corridor.

According to my review of literature on water trails and heritage tourism development, it was clear that consideration for and good relationships must be formed with the local communities and residents before a project and development begins. There needs to be an understanding between the public and developers on the purpose, intent, and reasons to how the development of the Parkway would be beneficial to the community. Development of a visitor center would be the foundation to the start of a good relationship and bridge between the community and the Parkway. It would be developed as not only a place for tourists but also be open as a place for the entire community to connect to the history and the river as well. It would also serve as the support system and foundation to the future development of the Parkway. The visitor center would be the central location for the Parkway and would be able to display and share the heritage and history of the two rivers, which would assist in promoting the need for future developments of heritage and historic preservation, natural resources, and recreational opportunities along the river. It would also be a place to help bring in or aid local businesses in future developments along the Parkway.

Another main point that became clear through my research was the need for lodging near or along the Parkway. Providing a place for people stay allows them to plan longer trips and explore more of the Parkway and local communities. Studies showed that larger economic gains occurred in local communities when lodging was available. Restoring and developing the old lock tender's house into a bed and breakfast would utilize the old house as an important piece of the Parkway. As the Parkway continues to develop, this B&B location would be ready for the future numbers of tourists being drawn to the new attractions. Also made clear through research that close connections to downtown centers and other local attractions would only help increase the economic gains to the local communities.

With the development and establishment of the Parkways more opportunities will become available to utilize the river as a powerful economic tool. Increased interest that the Parkway will create, drawing more people down to the river, would allow for the development of a long range plan for a mixed-use, small community development along the river. This development would create a place for people to live, work, and play along the valuable natural resource that is the Fox River.

Locating a site for the new visitor center and a place for a bed and breakfast is an important decision on how these sites will affect the rest of the Parkway development and their impacts on local communities and adjacent landowners. I have chosen to locate both sites in the City of Appleton. Appleton is the heart of the Fox Cities, which is the most populated area along the entire parkway and is close to a central location. There are four locks within Appleton and I will locate the visitor center, bed and breakfast, and mixed-use community at three out of the four. All four are connected by a land trail in addition to the connection on the water. The visitor center will be located at Appleton lock #3 on a fairly busy street in a smaller, calmer bay area along the river. The location is real close to Appleton's downtown and accessible by foot. The site is relatively flat and there is a lot of potential waterfront access. The bed and breakfast site will be located at Appleton lock #1 just west of the visitor center. It also is located in a quieter bay along the river. It is set back in more of a wooded setting, considering it being located inside the city. The bed and breakfast site is very close to local attractions and still in walking distance of the downtown as well. There is also a narrow gravel access road leading to the site already existing. Between the visitor center and the bed and breakfast site the mixed-use community will be planned to develop a former paper mill site that is now vacant located on the north side of Appleton lock #2. It will be the central connection between the visitor center and bed and breakfast site developments.

Project Program

Heritage Parkway Visitor Center at Appleton Lock #3

- Visitor Center Building with Extensive Green Roof
- Restored Historical Lock Tender's House
- Portage Trail
- Newberry Recreation Trail connection
- Mooring Dock/Pier
- Boat Rental and Storage Facility
- Outdoor Patio and Seating Deck
- Shoreline Restoration
- Visitor Parking
- Stormwater Management Control

Bed and Breakfast at Appleton Lock #1

- Restored Lock Tender's House in to Bed and Breakfast
- Addition to Lock Tender's House to accommodate more guests
- Recreation Trail/Boardwalk Trail connection to Newberry Recreation Trail
- Portage Trail
- Mooring Dock
- New Entry/Access Road
- Visitor Parking
- Fire/Council Ring
- Rocking Porch
- Shoreline Restoration

Mixed-Use Community at Appleton Lock #2

- Riverfront Recreation Trail
- Mooring Docks
- Healthy Alternative Grocery Store
- Mixed-use Developments with Commercial and Residential and Extensive Green Roofs
- Riverfront Restaurant
- Commercial Spaces
- Portage Trail
- Outdoor Outfitter Shop
- Harbor Rest House
- Central Square
- Regional Rail Transit Station
- Shoreline Restoration
- Suitable Parking for all developments

Design Ethics

I believe that a good design is a design that not only reflects the ideals and beliefs of the designer, but also considers the ideals and beliefs of the all the people that will be influenced and impacted. A good design is well balanced. It meets the needs of the client and also minimizes environmental impacts, protects the health, safety, and welfare of the public, creates a higher quality space and place, and ultimately is sustainable.

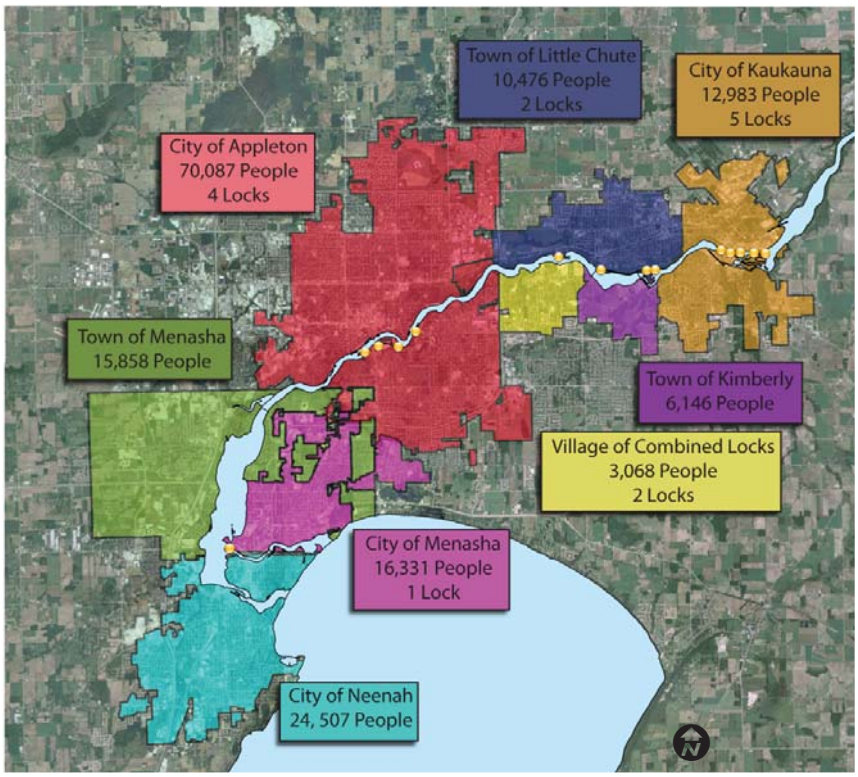
The roots of all my ethics go back to my two biggest role models throughout my entire life, my father and my maternal grandfather. I've grown up learning from two incredible teachers. My grandfather was a mason by trade but a jack-of-all-trades, a very skilled man who was very handy which lead to his great appreciation for the built world and all of its details and history. He is also the one who introduced me to the outdoors and developed my appreciation for the environment and its natural beauty. My father has been involved in public service his entire life starting when he was in secondary school. He has taught me ways to work with others and how to listen, respect, and consider the opinions and beliefs of others. These two figures in my life have shaped who I am, what I stand for, and what I believe in.

As stated before, my findings through research expressed the importance of developing a good relationship with the surrounding communities adjacent to this tourism project. I completely agree with these findings, I personally believe in respect for everyone. During the development of this project there needs to be open communication and all opinions need to be heard. An open dialogic space needs to be established. I feel that I have done a good job at doing this by working with three different groups on this project. The first being East Central Wisconsin Regional Planning Commission, the initial planners and developers of the project, Fox River Navigational System Authority, the landowners of the properties who are requesting the development plans for their land, and finally the Friends of the Fox group that represents the people of the local communities who share a passion and interest in the river and how it is being developed. I have talked with all three groups and have taken into consideration all of their ideas and concerns. I will now move forward to try and best provide a design to accommodate all of their ideas while also designing for future visitors of these sites. I will also need to take into consideration the health, safety, and welfare of all of those who will be interacting with these developments. Adjacent landowners also need to be taken into consideration throughout the design process by not affecting their properties in any negative fashion at all, only in ways that would positively affect their properties or leave them unaffected.

The nature of this project brings up numerous ethical issues involving design, history, and the environment. With it being a heritage and cultural site much consideration needs to be given to the design styles of previous developments along the river and this historical corridor. Any existing structures with historical significance such as the old lock tenders' houses on numerous sites along the parkway that are on the National Register of Historic Places, need to be preserved, and also restored with a possibility of future use where appropriate economically and for sustainability purposes as well. I also believe in close attention to detail. I feel that what distinguishes a great design from a good design is in the details. All spaces need to be considered within the design and have a reason for being developed and designed the way that they are. Every space is a chance to make an impact on those interacting with the site, enhancing their experiences.

The environment and sustainability also need to be considered into this design. The Parkway falls on the Fox River, a jewel of a natural resource for all of the surrounding communities. During design attention needs to be put towards eliminating all runoff and impact that a development may have on the river. Attention needs to be given to helping to improve the quality of the river in all possible aspects. Native species of the area and the river shall be used to help restore it to the way that this heritage corridor used to exist. In addition to native species, native materials need to be used as well. All materials used shall be native to the area, and in all possible ways acquired from local businesses in adjacent communities. This will improve relations and make connections with local community members.

Demographics of the Fox Valley



Fox Valley Cities, Towns, & Villages with Fox River Shorelines:

- Largest City in the Fox Valley: **Appleton – 70, 087 people**
- **Highest concentration** of Navigational Locks Systems along entire parkway
- Total # of Locks in the Fox Valley: **14 Locks**
- City with most locks: **Kaukauna - 5 Locks**

City of Appleton Demographics:

Areas within 1 mile of City Center

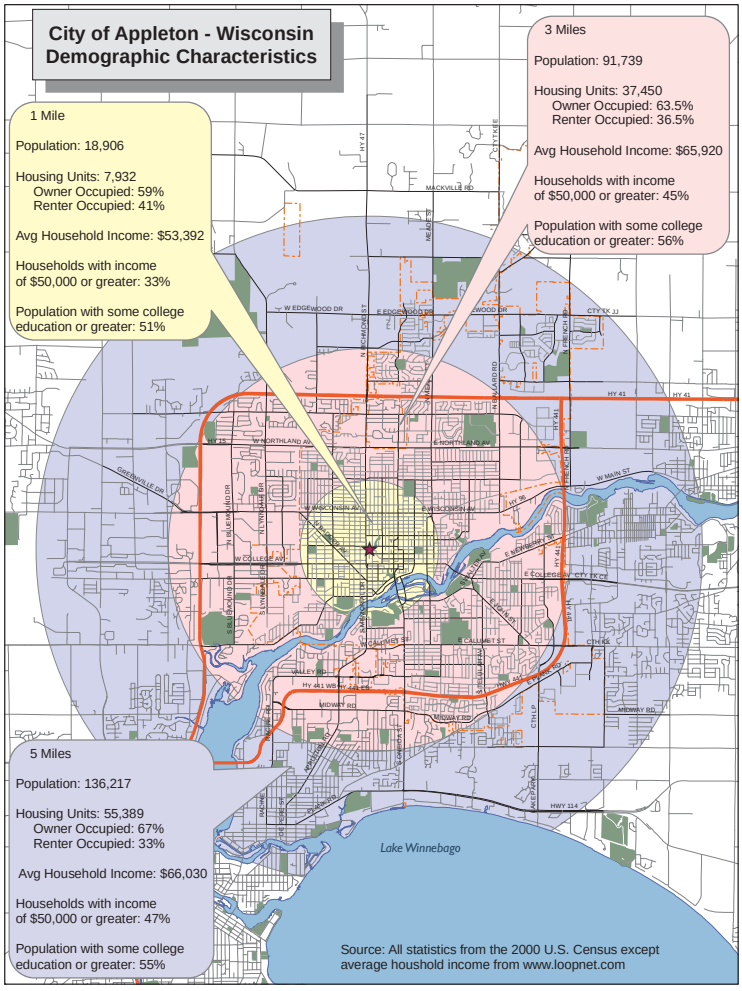
Population: **18,906**
Housing Units: **7,932**
Avg. Household income: **$53,392**
Households with income >$50,000: **33%**
Population with some college education or greater: **51%**

Areas within 3 miles of City Center

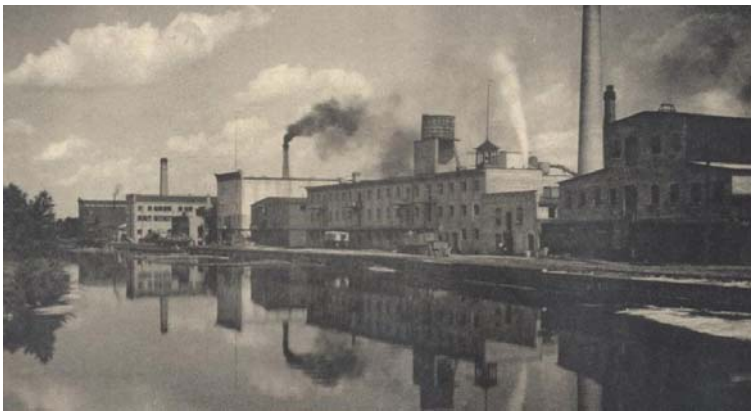
Population: **91,739**
Housing Units: **37,450**
Avg. Household income: **$65,920**
Households with income >$50,000: **45%**
Population with some college education or greater: **56%**

Areas within 5 miles of City Center

Population: **136,217**
Housing Units: **55,389**
Avg. Household income: **$66,030**
Households with income >$50,000: **47%**
Population with some college education or greater: **55%**



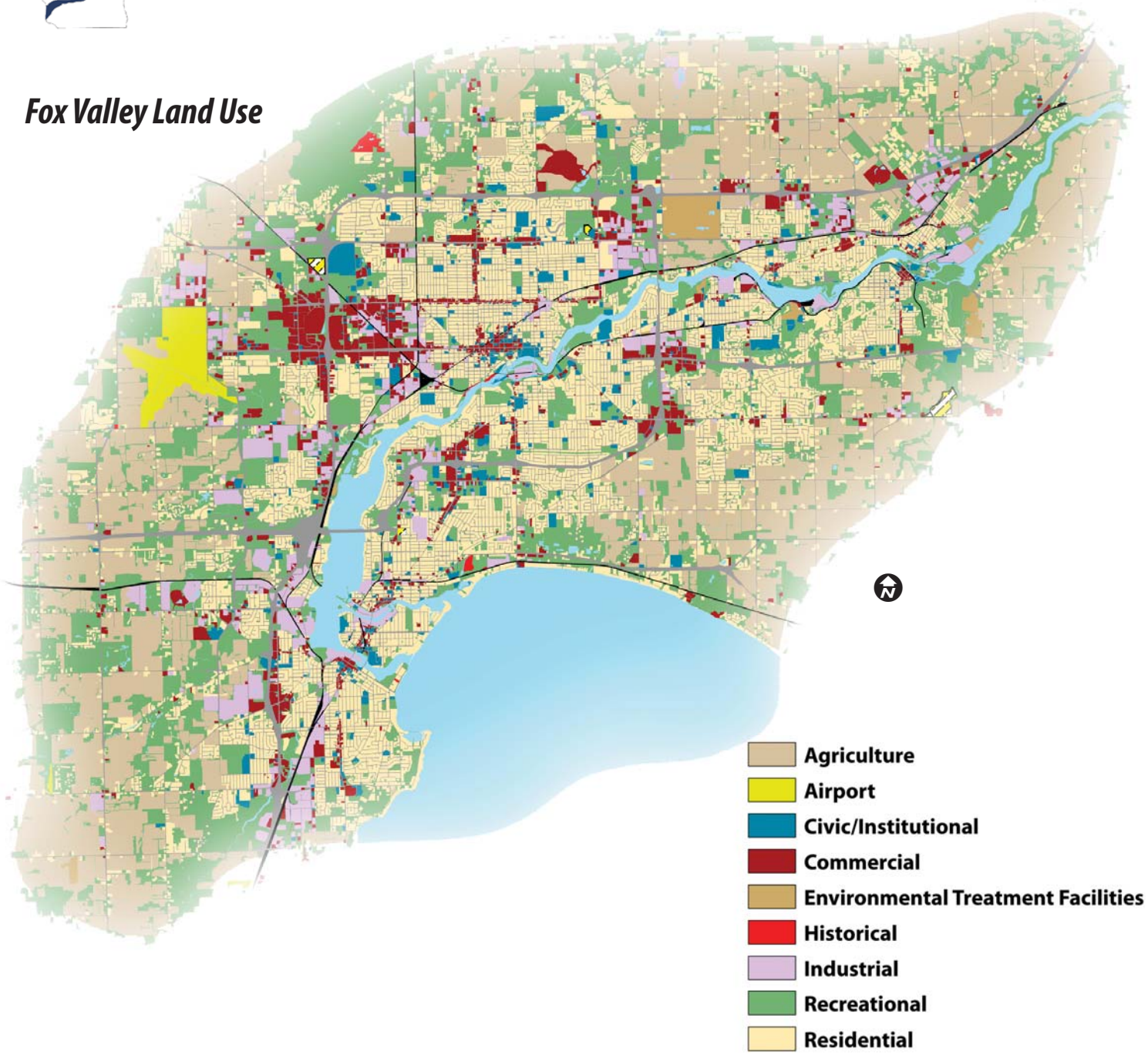
History of the Fox Valley



Evolution of a Region Centered on a River's Resources:

- Numerous Native American Tribes settled along the river:
  Winnebago, Fox, Oneida, Menominee
- Jean Nicolet first European explorer to land on what is now Wisconsin in 1634
  Nicolet was looking for a route to India & China
  Traveled via the St. Lawrence Seaway
- Many Europeans followed to Wisconsin: Marquette & Joliet, Raddisson, Pierot, Allouez, & more
  Marquette & Joliet were first to travel entire Fox-Wisconsin Waterway to Mississippi
- Grignon Family were first fur traders in the area and settled in what is now Kaukauna along river, & current lock Site
- Treaty of the Cedars signed September 1836 between Governor Henry Dodge & Menominee Chief Oshkosh
  Menominee Nation ceded 4 million acres to US for $700,000; roughly 17 cents per acre
- Lawrence University is established along the river in 1847
  Second university in the US to be coeducational, both men and women taking classes
- The first Industries start to settle along river, a total of 14 comprised of:
  Saw mills, lumber mills, ice factory, flour & grain mills, wagon & blacksmith
- Richmond Brothers established first Paper Mill along river in 1853
  River would come to have greatest concentration of paper mills along one river
- Historic Locks Systems opening along river and Railroad expansion accelerate industry and travel along river - 1856
- Army Corps. of Engineers take over Lock Systems to make improvements and manage system - 1884
- One of the world's first hydro-electric central stations opened in 1882
  Powers worlds first home powered by hydro-electric central station, The Hearthstone
- First commercially successful streetcar in the Country established - 1886
- Wars & Depressions slowed river industries & river development, dumping and pollution start to contaminate river
- Clean up efforts & pollutant removals have been ongoing a total of $295 million invested in project

Fox Valley Land Use



3 Evaluations of Regional Inventory & Analysis

1) Economic & Development Opportunities Analysis

Land use analysis of the Fox Valley

2) Regional Parks & Recreation Inventory & Analysis

Evaluation of recreational programming along the Fox Valley riverfront

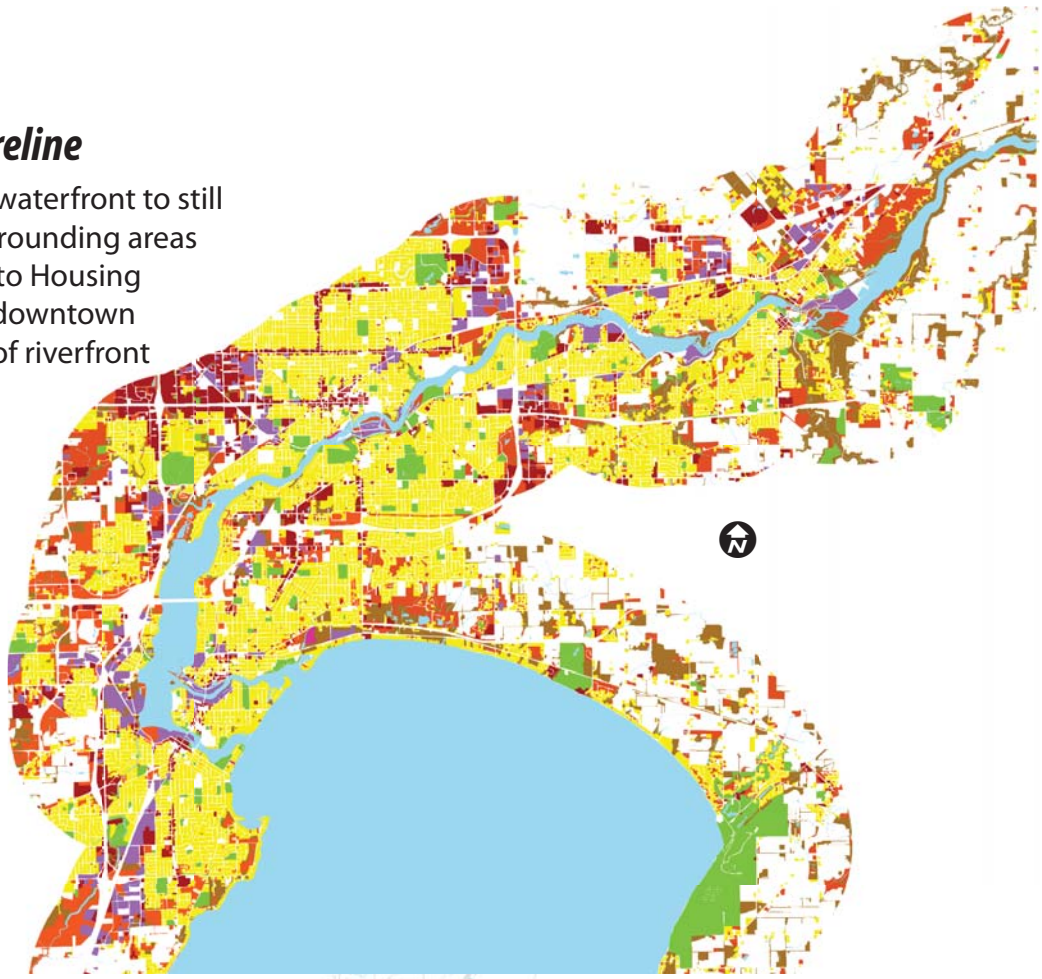
3) Historic Development & Preservation Opportunities & Constraints Analysis

Assessment of all 17 navigational lock sites along the lower Fox River

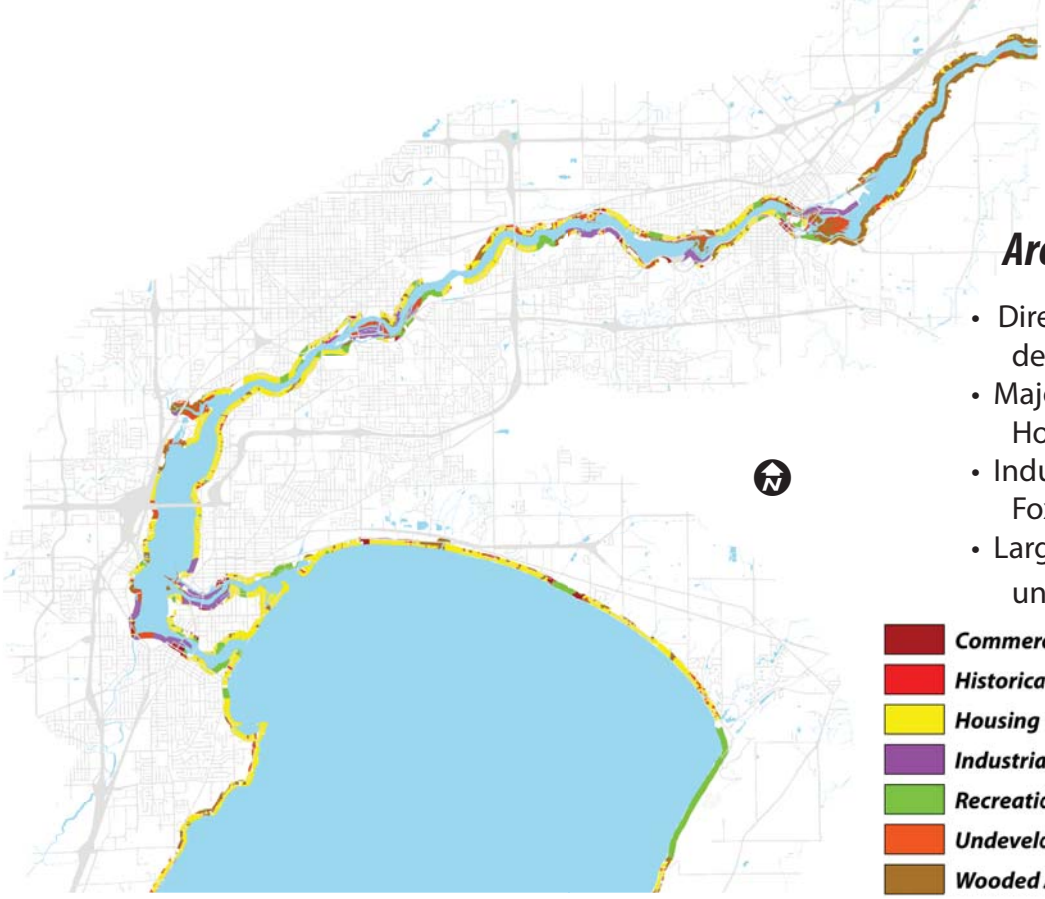
Regional Analysis - Composite Land Use Analysis

Areas within 2 miles of shoreline

- Distance estimated for the waterfront to still have a direct impact on surrounding areas
- Majority of Land dedicated to Housing
- All Cities, Towns or Villages downtown centers fall within 2 miles of riverfront



- Commercial
- Historical
- Housing
- Industrial
- Recreational
- Undeveloped Land
- Wooded Areas



Areas within 500 ft. of shoreline

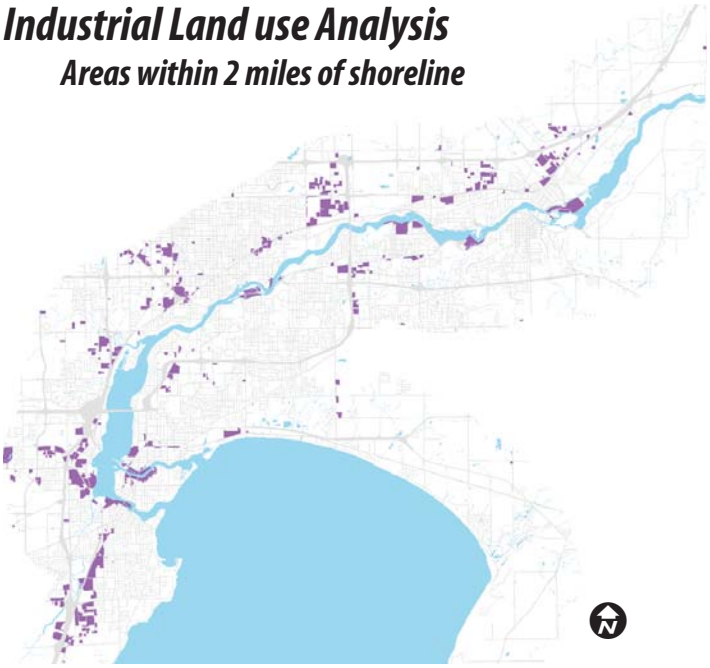
- Direct land use of shoreline, prime land for development
- Majority of Riverfront dedicated to Housing
- Industrial centers located throughout Fox Valley Riverfront
- Large amount of Wooded and undeveloped land in Northwest

- Commercial
- Historical
- Housing
- Industrial
- Recreational
- Undeveloped Land
- Wooded Areas

Regional Analysis - Land Use

Industrial Land use Analysis

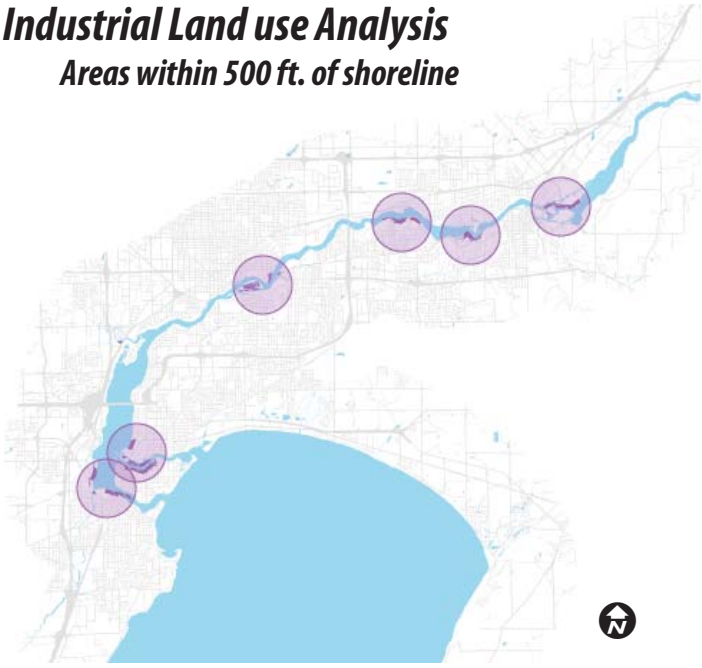
Areas within 2 miles of shoreline



- Many Industrial Centers within the Fox Valley and within close proximity to the river

Industrial Land use Analysis

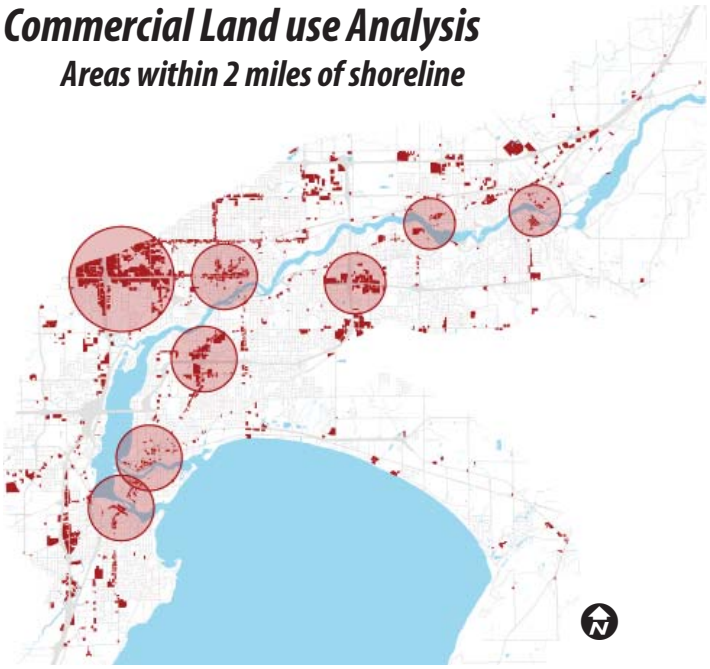
Areas within 500 ft. of shoreline



- Many of Industrial Centers along riverfront
- Fox Valley founded and grown from Industrial riverfront development
- Paper Industry is most historic and largest industry in Fox Valley

Commercial Land use Analysis

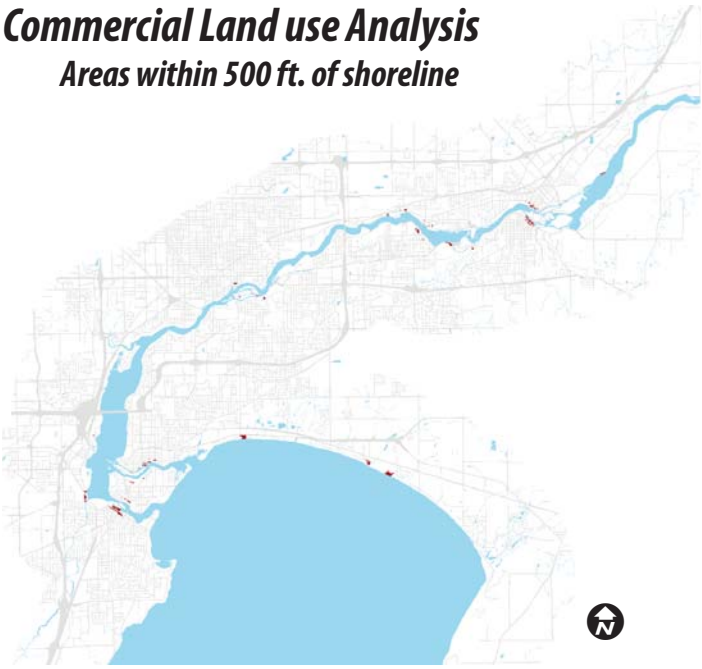
Areas within 2 miles of shoreline



- Many small clusters of Commercial Development signifying City, Town, and Village Centers

Commercial Land use Analysis

Areas within 500 ft. of shoreline

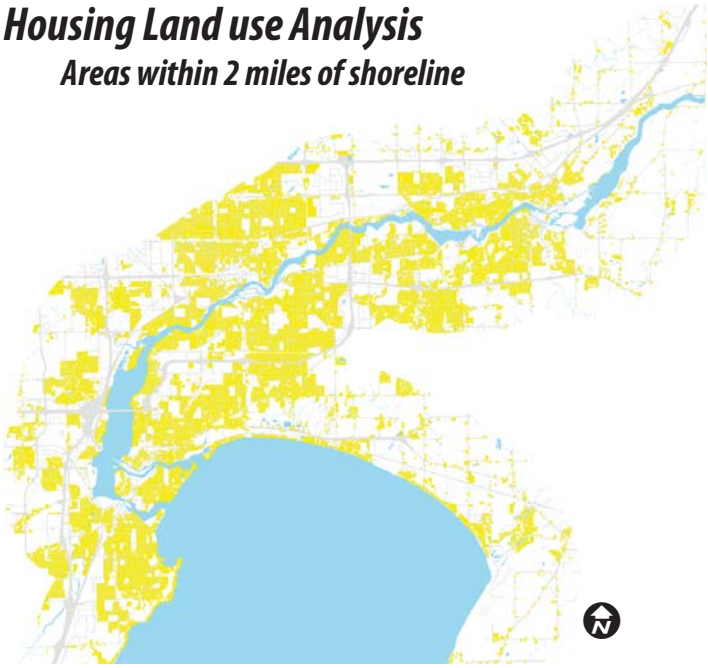


- Very Limited Commercial Development along shoreline of river
- River should be utilized more for economic gains

Regional Analysis - Land Use

Housing Land use Analysis

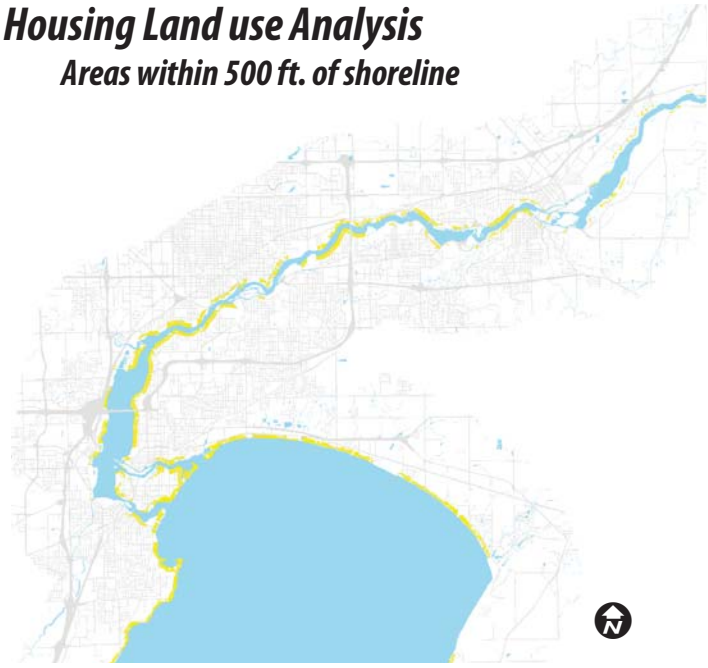
Areas within 2 miles of shoreline



- Majority of landuse within 2 miles of river dedicated to Housing

Housing Land use Analysis

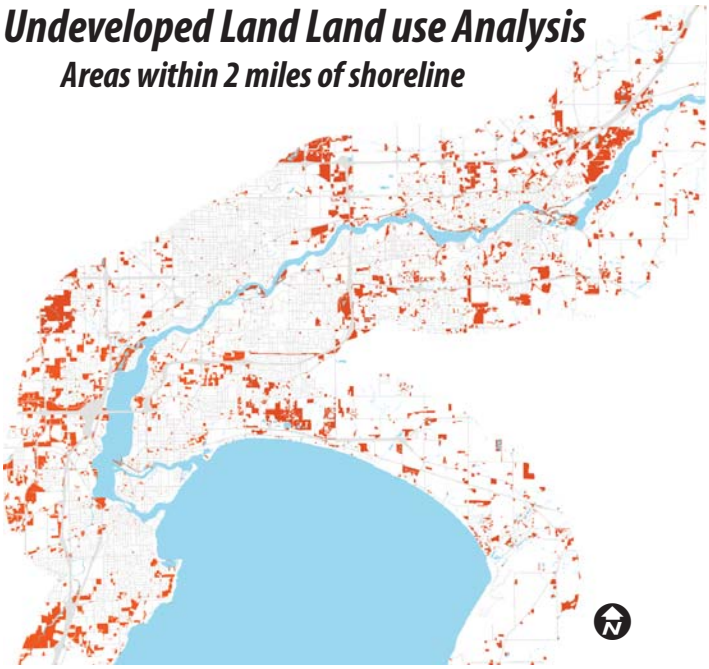
Areas within 500 ft. of shoreline



- Majority of landuse along shoreline of river dedicated to Housing
- Housing mixed with commercial development increases economic gains of prime land for development (Mixed-Use)

Undeveloped Land Land use Analysis

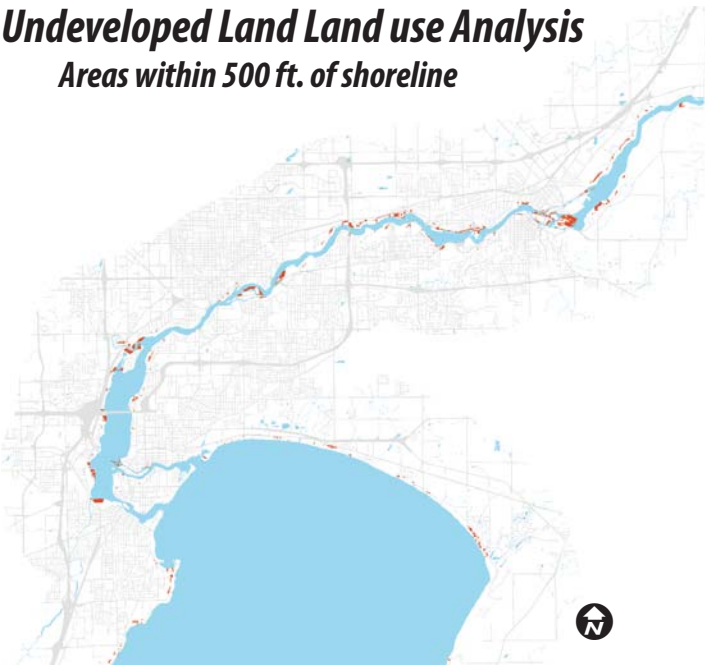
Areas within 2 miles of shoreline



- Abundant areas for development within 2 miles of Riverfront

Undeveloped Land Land use Analysis

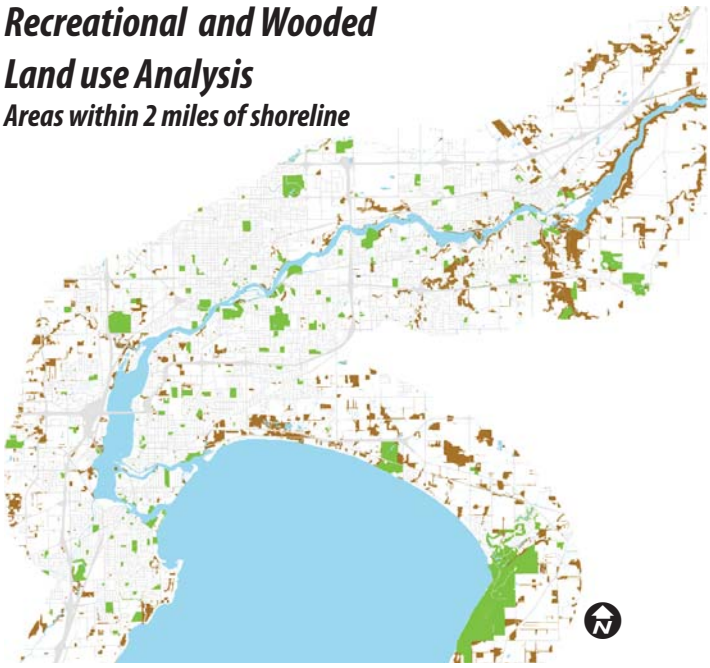
Areas within 500 ft. of shoreline



- Many of potential development areas fall along the River's shoreline

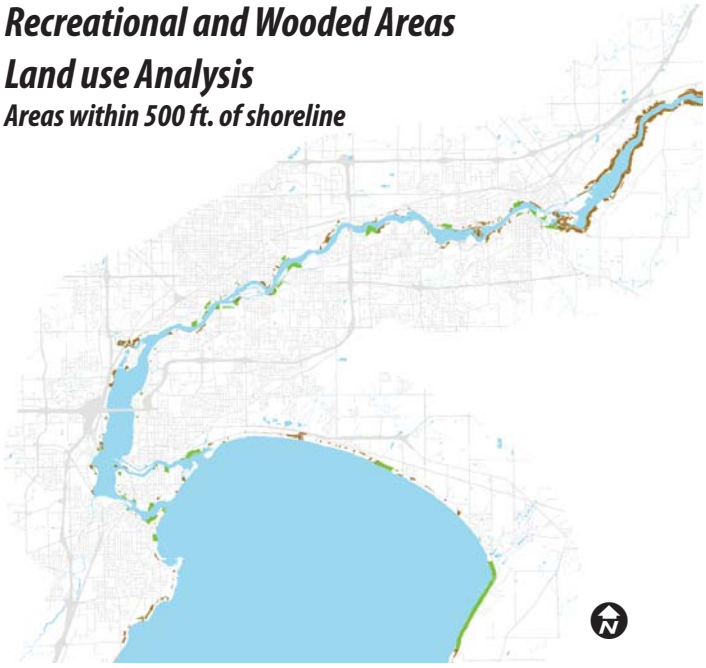
Regional Analysis - Recreational Analysis

Recreational and Wooded Land use Analysis
Areas within 2 miles of shoreline



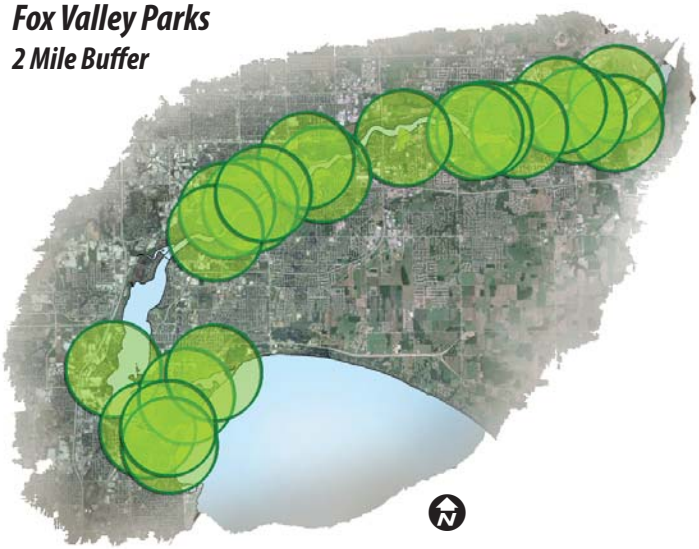
- Good distribution of recreational sites throughout the Fox Valley area
- More wooded areas located in the east side of the Fox Valley area, most predominantly in the northeast of the Valley

Recreational and Wooded Areas Land use Analysis
Areas within 500 ft. of shoreline



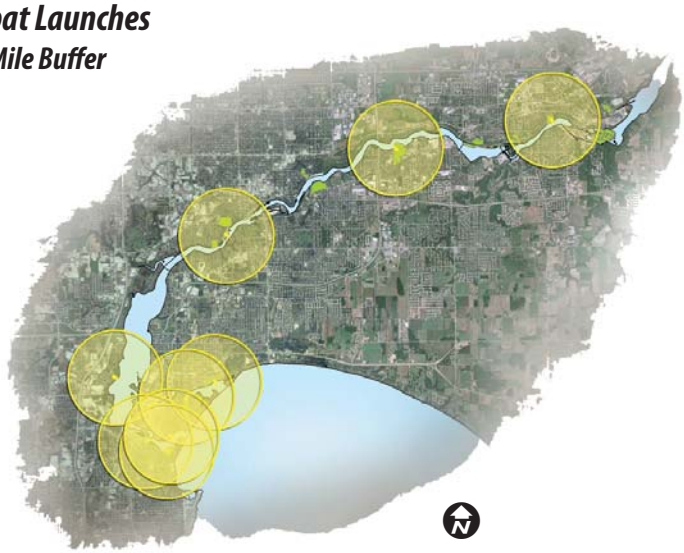
- Shoreline recreational and wooded areas spatial distribution very similar to distribution of 2 mile radius

Fox Valley Parks
2 Mile Buffer



- 2 mile buffer is an acceptable distance for recreational coverage
- Only one major gap exists along Little Lake Butte des Morts

Boat Launches
2 Mile Buffer



- Illustrates boat launch sites coverage along river
- Nice concentration and access around Lake Winnebago and river intersection
- More boat launch locations needed down river, northeast direction, to fill in missing gaps

Fox Valley Recreational Resources Summary:

(See next page for complete inventory)

Lutz Park - Appleton

Many Picnic Pavilions

Walking Trails

ADA playgrounds in all Appleton Parks

Fishing Piers

Boat Launches

Marinas or adjacent to marinas

Year-round Recreational opportunities:

Spring/Summer/Fall - Baseball/softball, soccer, tennis, basketball, football, swimming pools, disc golf

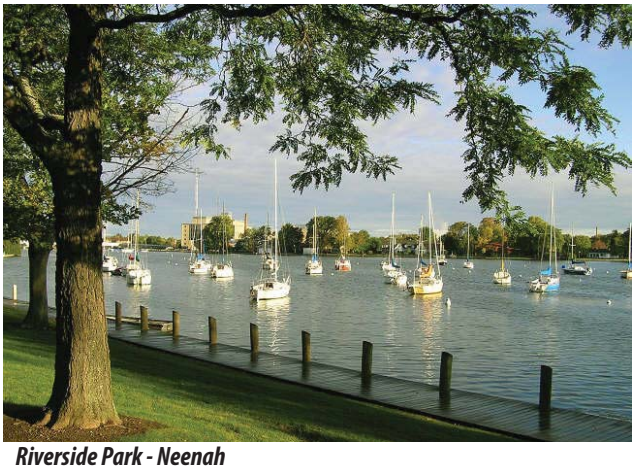
Winter - Warming stations, ice rinks, sledding hills

Festivals & entertainment held along river:

Paper Festival, Cheese Festival, Local artist band concerts, Appleton City Band concerts

Significant places:

1000 Islands Nature Center
Smith Park Public Gardens
Historic Grignon Mansion
Paper Industry Hall of Fame & Paper Discover Center



Riverside Park - Neenah

Doty Park - Neenah

Fox Valley Riverfront Parks Inventory & Analysis

Fox Valley Trails

Peabody Park
16.2 Acres
Pavilion Facilities
ADA Playground Facilities
River Shoreline Picnic Facilities
Recreational Fields (Basketball)

Doyle Park
Amphitheater Facilities
Pavilion Facilities
Playground Facilities
Municipal Swimming Pool
Recreational Fields (Baseball, Volleyball, Tennis, Basketball)
Host to local Festivals
(Great American Cheese Festival, Kermis Fest)
Lock Property on site

Central Park
City Library
Close proximity to downtown
Host to many civic events & festivals

Riverside Park
Fishing/Picnic Pier
Boat Launch
Playground Facilities
Pavilion Facilities
Recreational Fields (Baseball)

Grignon Park
Historic Grignon Mansion
Pavilion Facilities
Disc Golf Course
Recreational Fields (Soccer)
Adjacent to Lock Properties

Vulcan Heritage Park
Picnic Facilities
Adjacent to River Dams
Nice views of Hearthstone Home
Adjacent to Paper Industry Hall of Fame
Adjacent to Riverfront Restaurant and Outdoor Patio

Pierce Park
36.2 Acres
Community Park Designation
Large Pavilion Facilities
ADA Playground Facilities
Amphitheater Facilities (Hosts City Band Concerts)
Recreational Fields (Baseball, Tennis, Basketball, Disc Golf)
Recreational Programs Facility
Limited River Access

Sunset Park
Boat Launch
Nature Walking Trails
Amphitheater Facilities
Pavilion Facilities
Playground Facilities
Fishing/Picnic Pier
Sunset Beach Swimming Pond
Recreational Fields (Baseball, Volleyball, Soccer)
Host to local Festivals
(Paper Festival, Many local band concerts)

Island Park
Nature Walking Trails
Fishing/Picnic Pier
Lock Property & Lock Tender's House

1000 Island Environmental Center
350 Acres
7.2 miles of Trails
Fishing Piers
Canoe Launch
Nature Center/Museum
Recreational Fields (Football, Baseball)

Heesakker Park
Nature Walking Trails
Pavilion Facilities
Playground Facilities
Recreational Fields (Ice Rink, Soccer)
Lock Property & Lock Tender's House

Lutz Park
Fishing/Picnic Pier
Small Pavilion Facilities
Lighted Riverwalk Trail
Public Boat Launch
Adjacent to Yacht Club and Marina

Alicia Park
Pavilion Facilities
ADA Playground Facilities
Nature Walking Trails
Limited River Access

Telulah Park
38.3 Acres
Community Park Designation
2 Pavilion Facilities
ADA Playground Facilities
Nature Walking Trails (Newberry Trail Head)
River Access Pier (Home of Appleton Rowing Club)
Recreational Fields (Basebal, Soccer, Disc Golf 18 holes)

Smith Park
23.9 Acres
Nature Walking Trails
Fishing/Picnic Docks & Piers
Boat Launch & Boat Slips
Pavilion Facilties
Historic Merrorial Building
Public Smith Gardens
Recreational Fields
(Baseball, Volleyball, Soccer, Tennis, Football)

Fritse Park
Boat Launch Facilities
Playground Facilities
Head of Friendship Trailway
Connected by trail to Menasha Lock Property

Jefferson Park
28.9 Acres
Nature Walking Trails
Pavilion Facilities
Playground Facilities
Fishing/Picnic Docks & Piers
Boat Launch & Boat Slips
Municipal Swimming Pool

Shattuck Park
Boat Launch Facilities
2 Marina Piers with Boat Slips
Large Pavilion Facilities
Neenah Riverwalk Center
Lighted & Brick Paved Walkways
Adjacent to Neenah Center Building

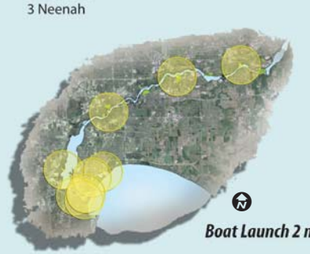
Doty Park
Boat Launch
Favilion Facilities
Walking Nature Trails
Bridges to Island Park
Recreational Facilities (Tennis)

Riverside Park
Walking Nature Trails
Large Pavilion Facilities
Playground Facilities
Boat Mooring Facilities off-shores

Parks and Waterfront Analysis

20 Waterfront Parks
6 Appleton
4 Kaukauna
1 Kimberly
3 Little Chute
3 Menasha
3 Neenah

9 Boat launch Facilities
1 Appleton
1 Kaukauna
1 Kimberly
0 Little Chute
3 Menasha
3 Neenah




View from Rapid Croche Lock

Opportunities:

Nice mature trees & vegetation

Adjacent to lots of open land and green space

Adjacent to walking trails and other green space

Possible development opportunities of old Lock Tender's Houses

Nice views of Fox River

Nice finished off rock-lined shorelines

Adjacent to Historical Locations


Kaukauna Lock #1


Appleton Lock #1

Constraints:

Tough vehicular access and parking space

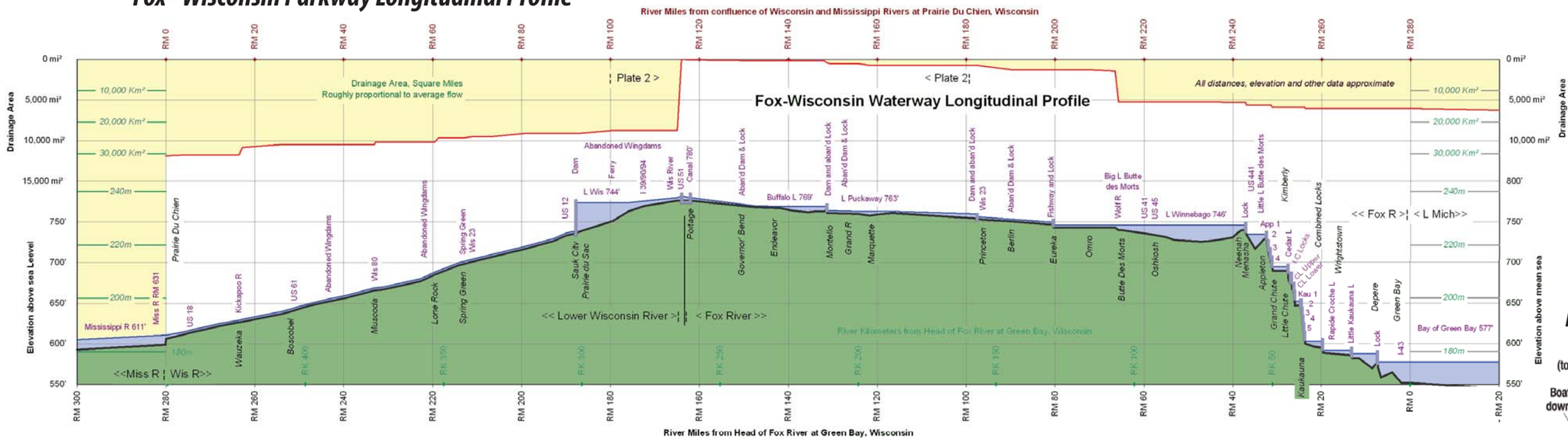
Large industrial sites block some ideal views of river

Extensive restoration needed to restore structures & old Lock Tender's houses

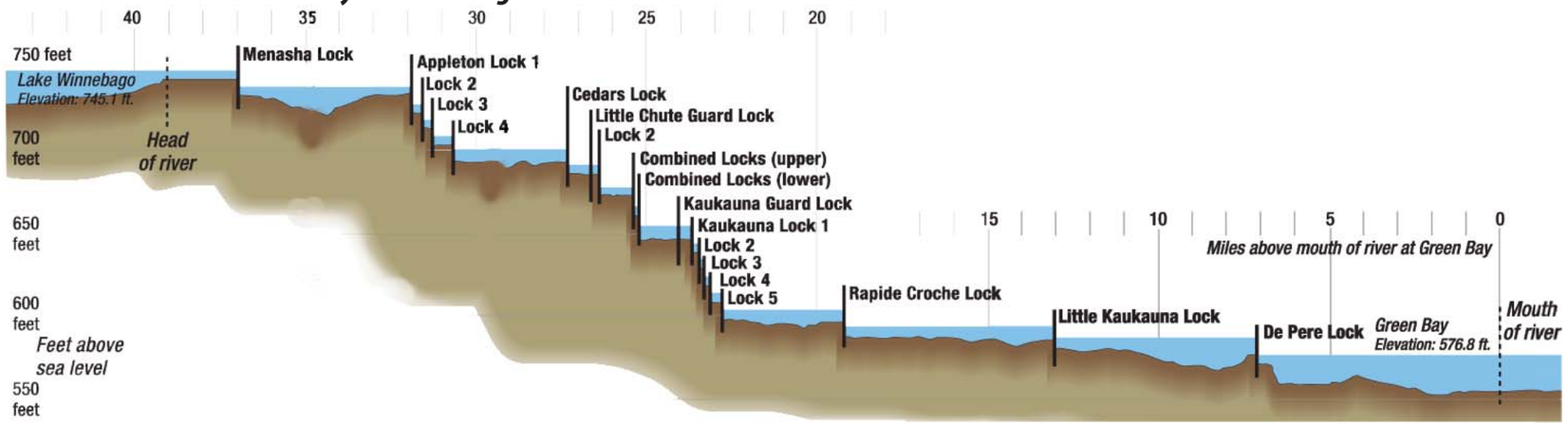

Newberry Recreational Trail - Appleton Lock #2

Navigational Locks Systems

Fox - Wisconsin Parkway Longitudinal Profile



Lower Fox Parkway Section Longitudinal Profile



Source: Friends of the Fox

Lower Fox River Navigational Locks Statistics

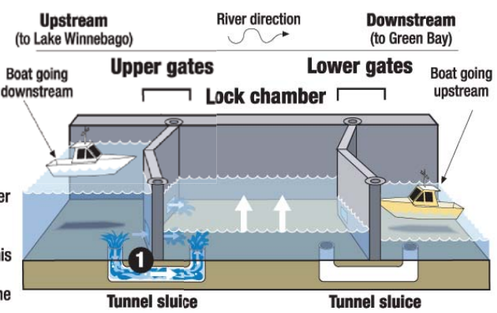
Total Distance Covered: 37 miles

Elevation Change Lake Winnebago to Bay of Green Bay: 169 ft.

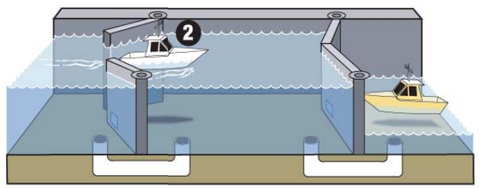
Average elevation change per lock: 10 ft.

Largest elevation changes fall within Kaukauna and between Little Chute and Combined Locks

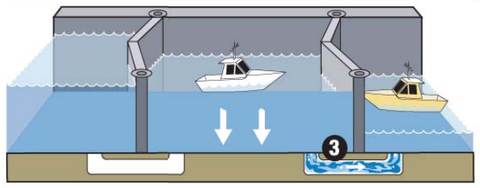
How a Lock Works:



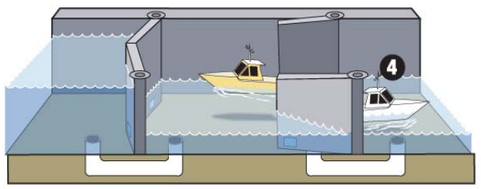
1 With the lock closed, water flows into the lock chamber through a tunnel or through openings in the gate doors. This is done until the water level reaches the same height as the upstream level.



2 The upper gates are cranked open using hand winches. Boats proceed into the lock. The upper gates are then closed forming a watertight chamber.



3 The lock staff move to the lower gates and open the sluice valves to drain the lock chamber to the downstream water level.

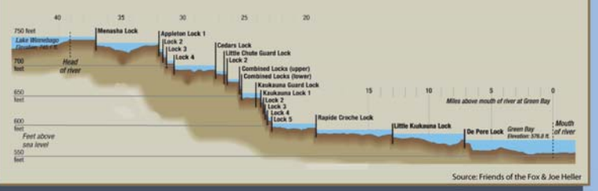


4 Then the lower gates can be cranked open allowing the upstream boat traffic to proceed downstream as well as the downstream boat traffic to enter the lock to be lifted to the higher water level.

Source: Friends of the Fox

Fox Valley Locks Opportunities and Constraints Analysis

Fox Valley Locks Elevation Changes



Source: Friends of the Fox & Joe Heller

Rapid Croche Lock

Opportunities:
- Large amount of land for programdevelopment
- Very nice natural wooded site
- Nice large lock tender's house in fair shape
- Nice views of natural shoreline and river
- Future site of boatlift for exotic species barrier
- Nice spot for a portage site as well

Constraints:
- Access road rough and narrow
- Limited access with close proximity to residential home

De Pere Lock

Opportunities:
- Historical Society Restoring Lock Tender House
- Historical Development Site

Little Chute and Combined Locks

Opportunities:
- Adjacent to string of riverfront parks
  - Island Park, Doyle Park, Heesakker Park
- Nice open views of river
- Drawbridge to Island Park
- Good access through parks
- Parking available
- Fishing Pier out on Island
- Large Lock Tender House

Constraints:
- Man-made canal blocks views to river

Little Kaukauna Lock

Opportunities:
- Nice natural surroundings
- Limited access from rajor roads
- Very large brick structure, possibility to be restored
- Very nice old large brick lock tender's house
- Close proximity to Los Dauphin site, potential state park

Constraints:
- Parking Access limited
- Skinny narrow access road to lock and tender's house
- Extensive restoration for old structure, graffiti and old parts

Kaukauna Lock #2

Opportunities:
- Large amount of adjacent land
- Nice connection from Lock #1, possible portage

Constraints:
- Tough access from street
- Hidden from view
- Other side of river bordered by Thilmany

Kaukauna Lock #5

Opportunities:
- Large Lock Tender's house
- Very natural and wooded surroundings
- Nice views out east to river
- Opens up to east to very open large river stretch
- Potential space for portage

Constraints:
- Tough access small one-way driveway
- No parking nearby
- Close proximity to mining and quarry site

Appleton Lock #2

Opportunities:
- Adjacent Newberry Trail provdes good access for ped traffic; good condition
- Informational signage providing historical information
- Possible space for Portage area on north side
- Mature vegetation and trees

Constraints:
- Very limited access
- Very little available land
- No signage highlighting trail access
- North side bordered by indusrial sites all paved

Cedars Lock

Opportunities:
- Lots of adjacent land
- Nice views to open river
- Island land part of property
- Nice access road off major road
- Close proximity to Historic Treaty of Cedas Site

Constraints:
- Large paper mill across water a little unsightly

Kaukauna Lock #4

Opportunities:
- Close proximity to Grignon Historical Mansion and Park
- Nice access and parking at Grignon Mansion
- Possible connection to last lock through wooded island, portage

Constraints:
- Small amount of land for program development across street from Mansion

Appleton Lock #1

Opportunities:
- Trailway to access site – feasibility for road access
- Large amount of land to develop
- Abandoned lock tender house – possibility for redevelopment
- Nice shoreline for possible portage or put in/out site
- Nice mature vegetation, predominantly oak trees
- Adjacent to new Trolley Square Development and Between the Locks
- Close proximity to Newberry Trail
- Nice views of River

Constraints:
- Limited vehicle access, narrow pathway
- Currently gated off and very hidden

Appleton Lock #4

Opportunities:
- New River Heath Multi-Use Development
- Restoration of hydro-electric powerplant adjacent to Lock

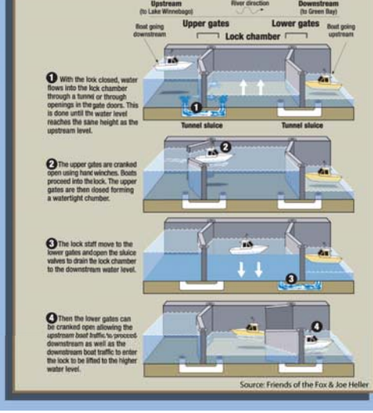
Expected Completion Date: Fall 2009

Kaukauna Lock #3

Opportunities:
- Site of Army Corps of Engineers Office
  - old owners of locks, lots of info
- Paiking at Army site
- Good connections to Locks #1 & #2, possible portage
- Small bay between lock #2 & #3
- Potential trail connection to Grignon Lock

Constraints:
- Small amount of land for program development
- Other side of river bordered by Thilmany

How a Lock Works



Source: Friends of the Fox & Joe Heller

Menasha Lock

Opportunities
- Friends of the Fox Headquarters
- Miron draw bridge structure
- Nice rock water edge in quiet bay
- Nice old mature oak trees
- Friendship Trail – lighted bridge on old railroad trestles connect to fritse park
- Seating areas along bridge for river viewing
- New plantings along trail and near trail sign
- Informational sign at start of trail w/ trail, lock, heritage information and maps

Constraints
- Limited parking access

Appleton Lock #3

Opportunities:
- Road access and parking existing
- Connected by Newberry Trail
- Nice views of Downtown Aopleton and River
- Historical and informational signage
- Possible connections to other local trails
- Adjacent to large open grern space
- Nice little peaceful bay area between active rail trestle and lock

Constraints:
- Condemned lock tender hcuse

Kaukauna Lock #1

Opportunities:
- Nice edged shoreline
- Nice parkway and trail, possible portage
- Informational signs on paper industry and locks
- Large lock tender's house
- Large amount of adjacent land
- Close proximity to Kaukauna Downtown
- Road access with small room for parking
- Potential trailway continuation to connect all locks in close proximity

Constraints:
- Opposite shore completely taken by Thilmany Paper Mill

Menasha Lock

Opportunities

- Friends of the Fox Headquarters
- Miron bridge structure
- Nice rock-lined water edge in quiet bay
- Nice old mature oak trees
- Friendship Trail - lighted bridge on old railroad trestle connecting to Fritse park
- Seating areas along bridge for river viewing
- New plantings along trail and near trail sign
- Informational sign at start of trail displaying trail, lock, and heritage information and maps

Constraints

- Limited parking access

Regional Design

- Nice program already- Trail over water to park and boat launch, FOF Hqtrs., Miron Bridge Lower Fox Water Trail Head
- Boat Portage along FOF Hqtrs. Property in to bay

Appleton Lock #1

Opportunities

- Trailway to access site - feasibility for road access
- Large amount of land to develop
- Abandoned lock tender's house - possibility for redevelopment
- Nice shoreline for possible portage or put in/out site
- Nice mature vegetation, predominantly oak trees
- Adjacent to new Trolley Square Development and Between the Locks
- Close proximity to Newberry Recreational Trail
- Nice views of the River

Constraints

- Limited vehicle access, narrow pathway
- Currently gated off and very hidden

Regional Design

- Small inn, hotel, or bed and breakfast setting in wooded area
- Trail head - start of recreational trail, establish connections to adjacent restaurants and entertainment
- Portage trail
- Boat docking and/or storage areas

Appleton Lock #2

Opportunities

- Adjacent Newberry Recreational Trail provides good access for pedestrian traffic, good condition
- Informational signage providing historical information
- Mature vegetation and trees

Constraints

- Very limited access
- Very little land available for development
- North side bordered by industrial sites - completely paved over

Regional Design

- Portage trail
- Access trail from existing Newberry Recreational Trail down to lock

Appleton Lock #3

Opportunities

- Road access and existing parking
- Connected by Newberry Recreation Trail
- Nice views of downtown Appleton and River
- Historical and informational signage
- Potential connections to other local trails
- Adjacent to large open green space along riverfront
- Nice quiet peaceful bay area between active rail trestle and navigational lock

Constraints

- Condemned lock tender's house

Regional Design

- Visitor Center - History of locks, information on entire Parkway
- Portage trail
- Boat rental and storage
- Boat docking and/or storage areas
- Passive recreational options

Appleton Lock #4

Opportunities

- New River Heath Mixed-Use Development
- Restoration of hydro-electric power plant adjacent to lock

Regional Design

- Project on currently on hold due to bridge reconstruction

Cedars Lock

Opportunities

- Large amount of adjacent land
- Nice views to open river
- Small island parcel prime for development
- Nice access road off major road
- Close proximity to Historic Treaty of the Cedars Site

Constraints

- Large shut down paper mill across the water a little unsightly

Regional Design

- Native American History and Interpretive site
- Native American Restaurant & Dining
- Portage trail

Little Chute and Combined Locks

Opportunities

- Nice open views of River
- Good access through chain of parks
- Lots of available parking
- Fishing Pier out on Island
- Large lock tender's house
- Adjacent to string of riverfront parks - Island Park, Doyle Park, Heesakker Park

Constraints

- Drawbridge to Island Park not functioning - extensive restoration needed

Regional Design

- Outdoor, cultural, and settlement heritage interpretive site
- Outdoor park and recreational development
- Portage trail along canal
- Boat docking and/or storage areas
- Connect all three parks by trailway creating small greenway

Kaukauna Lock #1

Opportunities

- Nice rock-lined shoreline
- Nice parkway and adjacent recreational trail
- Large signs on paper industry and locks
- Large lock tender's house
- Large amount of adjacent land
- Close proximity to downtown Kaukauna
- Road access with small room for parking
- Potential trailway connection to connect all locks in close proximity

Constraints

- Opposite shore completely occupied by Thilmany Paper Mill - foul smell and unsightly

Regional Design

- Connector trail to downtown Kaukauna
- Portage trail - connect to existing recreational trail
- Restore lock tender's house - Industrial Heritage Site

Kaukauna Lock #2

Opportunities

- Large amount of adjacent land
- Abandoned lock tender's house - possibility for redevelopment
- Nice connection from Kaukauna lock #1 - continue portage trail

Constraints

- Tough access from street
- Hidden from view
- Opposite shore completely occupied by Thilmany Paper Mill - foul smell and unsightly

Regional Design

- Continue portage and recreational trail

Kaukauna Lock #3

Opportunities

- Site of Army Corps of Engineers Office - former owners of locks, good resource for information
- Parking at Army Site
- Good connections to locks #1 and #2
- Small bay between locks #2 and #3
- Potential trail connection to Grignon Lock

Constraints

- Small amount of land for program development
- Opposite shore completely occupied by Thilmany Paper Mill - foul smell and unsightly

Regional Design

- Army Corps of Engineers - Lock construction and lock history Interpretive site

Kaukauna Lock #4

Opportunities

- Close proximity to Grignon Historical Mansion and Park
- Nice access and parking at Grignon Mansion
- Possible connection to previous lock through wooded island portage

Constraints

- Small amount of land for program development across street from Mansion

Regional Design

- Connect with Historical Grignon Mansion focusing on fur traders and early European settlers

Kaukauna Lock #5

Opportunities

- Large lock tender's house
- Very natural and wooded surroundings
- Nice views looking out east to River
- Opens up to east to very open large scenic stretch of the River
- Space for boat portage trail

Constraints

- Tough access, small one-way driveway
- No parking nearby
- Close proximity to mining and quarry site

Regional Design

- Water Recreation site - boat rental
- Portage trail
- Boat tour headed northeast down River

Rapid Croche Lock

Opportunities

- Large amount of land for program development
- Very natural and wooded site
- Nice large lock tender's house in fair shape
- Nice views of natural shoreline and river
- Future site of boat lift for exotic species barrier
- Nice spot for portage trail

Constraints

- Access road rough and narrow
- Limited access with entrance within very close proximity to residential home

Regional Design

- Boat lift site over barrier lock
- Nature Ecology Center and interpretive sites - Native landscape education
- Exotic and Invasive species of river
- Wildlife and marine life of river
- Portage trail

Little Kaukauna Lock

Opportunities

- Nice natural surroundings
- Very large brick structure, possibility to be restored
- Nice large lock tender's house in fair shape
- Close proximity to Lost Dauphin site, potential state park

Constraints

- Parking access very limited
- Limited access from major roads
- Skinny narrow access road to lock and lock tender's house
- Extensive restoration for old structure

Regional Design

- Restore old Structure develop into Commercial development
- Connect to Lost Dauphin Site and park
- Camping on river
- Portage trail

De Pere Lock

Opportunities

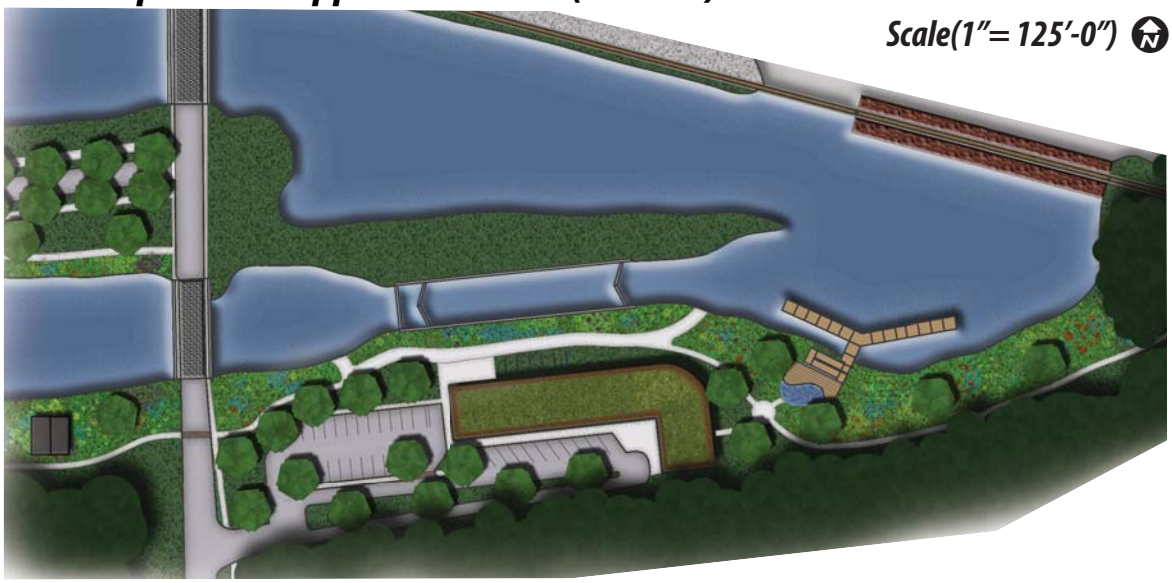
- Historical Society currently restoring lock tender's house and creating interpretive programming

Regional Design

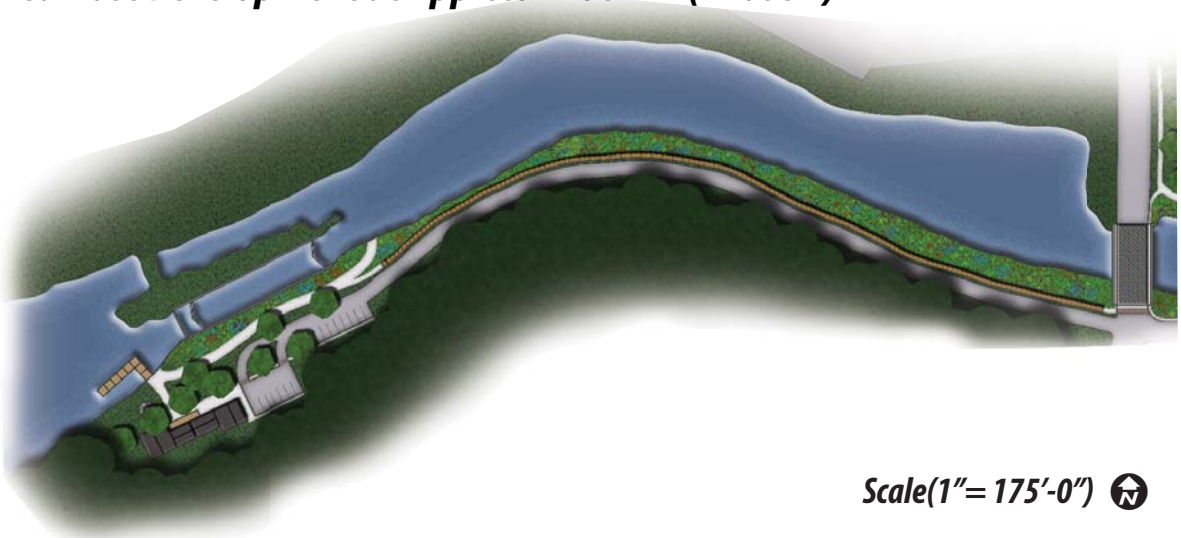
- Historical development site
- Portage trail

Visitor Center Development at Appleton Lock #3 (Phase 1)

Scale(1"= 125'-0")



Bed & Breakfast Development at Appleton Lock #1 (Phase 2)

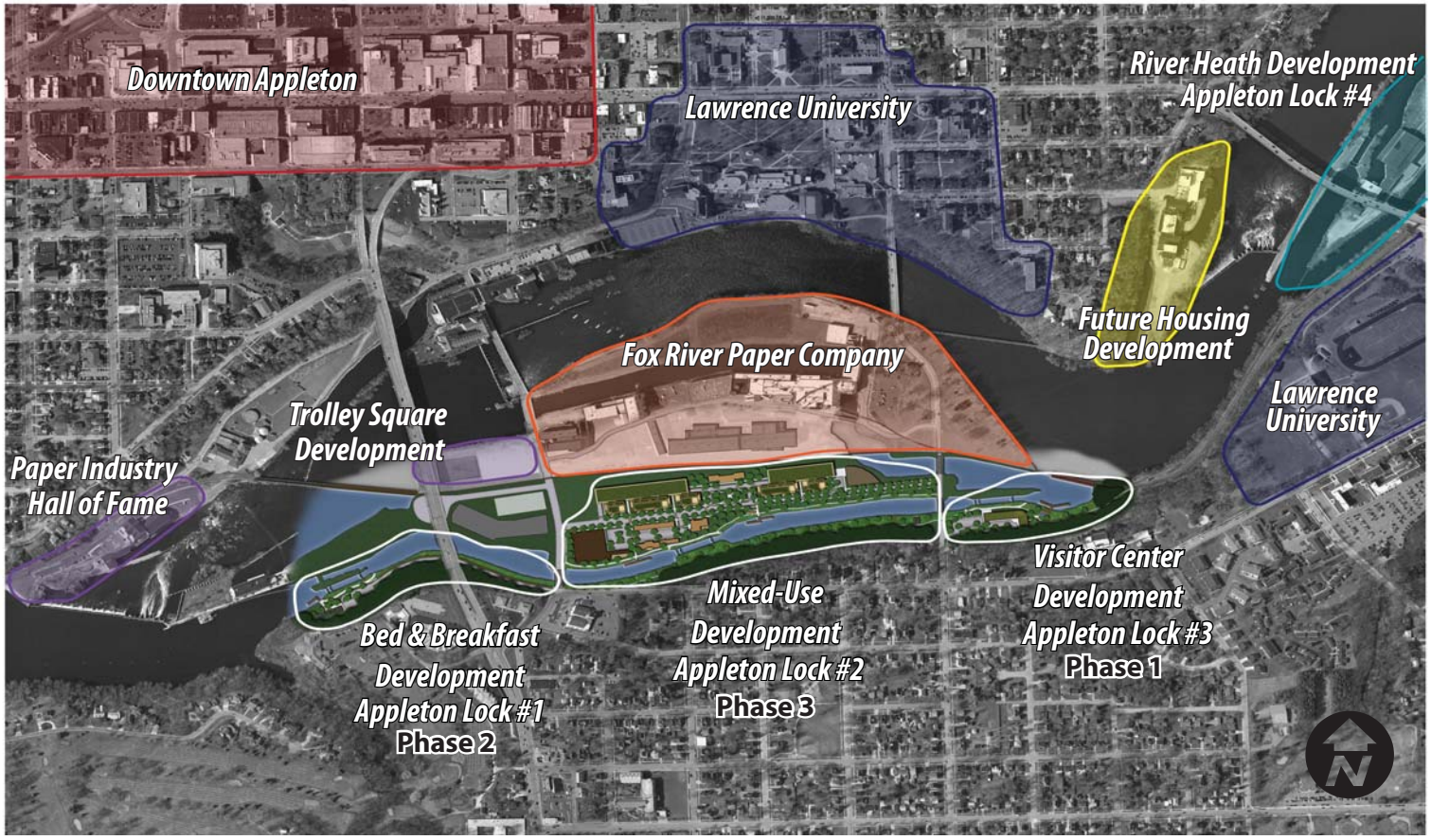


Scale(1"= 175'-0")

Mixed-Use Development at Appleton Lock #2 (Phase 3)

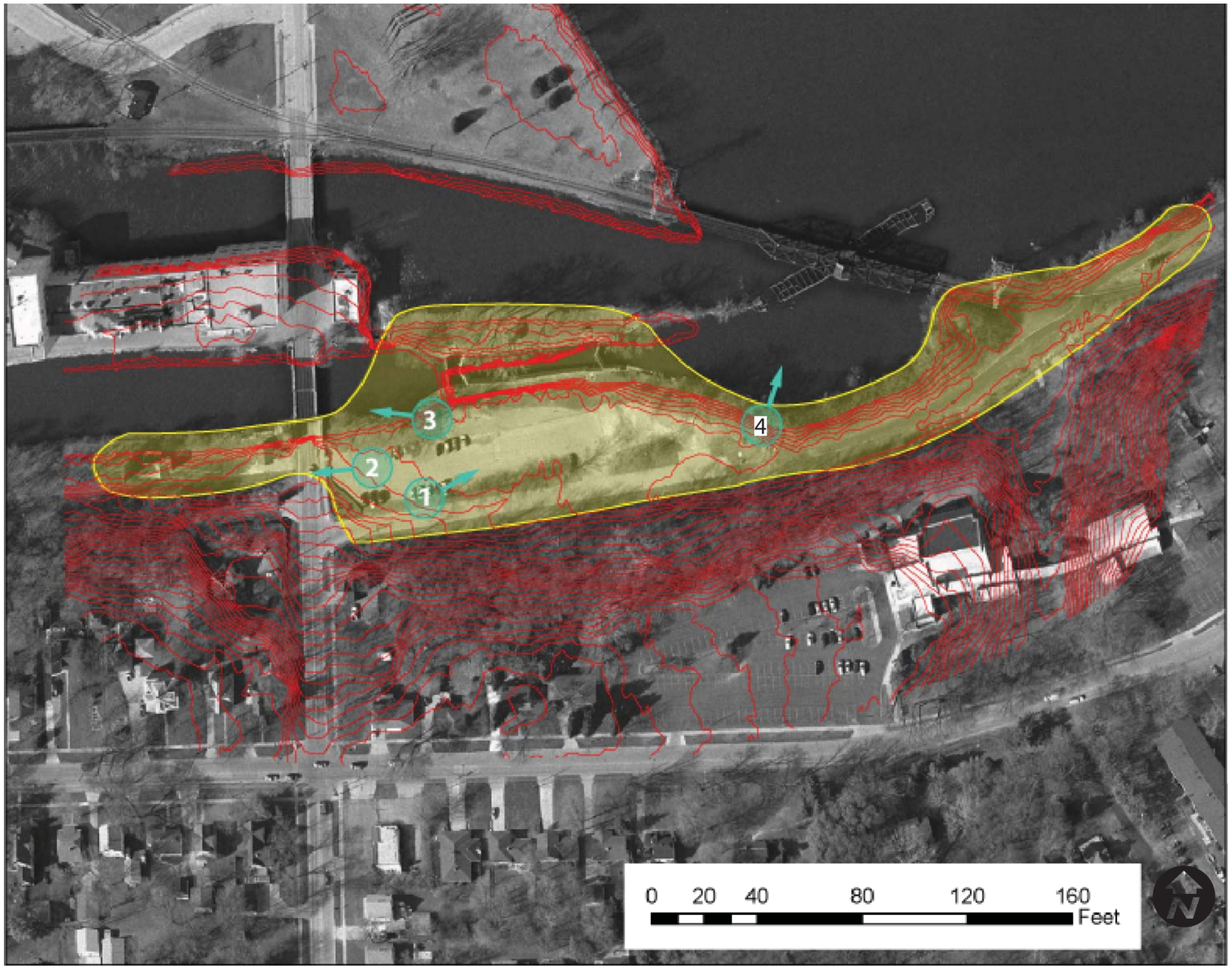
Scale(1"= 300'-0")

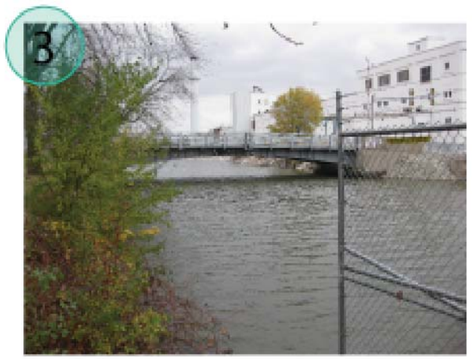
Appleton Riverfront Analysis

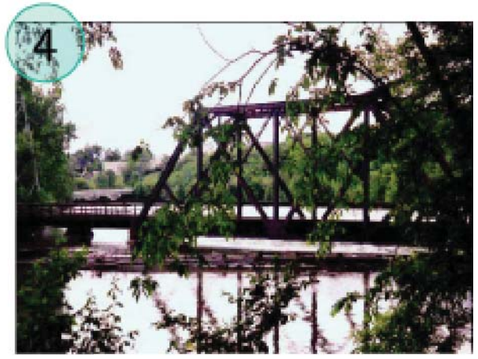


The Appleton Riverfront, once a strong industrial center along the Fox River, is slowly transitioning from its industrial past to more citizen and community oriented development projects. The Fox River Paper Company, outlined in orange, is still functioning as a paper mill on the river, one of the last few mills from the industrial period. Recent developments along the river such as the Paper Industry Hall of Fame and Trolley Square, outlined in purple, highlight some of the history from the industrial period on the river. There are two planned future developments on the east side of the map, outlined in yellow and cyan, are planned residential and mixed-use developments that are redeveloping old industrial sites. The Appleton downtown is located close to the river, just a short walkable distance. Also along the river is historic Lawrence University, outlined in navy blue. Recent developments at the University have helped turn the face of the campus to focus more on the river, most recently the construction of a new student union built into the side of the river valley just north of the visitor center site.

The three designs that I completed, outlined in white, are located right in the heart of the Appleton riverfront. The three sites are all connected through the water canal, but also through the Newberry recreational trail as well. The visitor center is the first phase of the development. The visitor center will get the parkway established along the river, not only helping draw attention to Appleton and it's riverfront but also as a support system for the rest of the entire Parkway. As the visitor center becomes more established and starts attracting more tourists, phase two of the development, the bed and breakfast will be developed. The bed and breakfast will allow all of the visitors coming to the Parkway to plan for more extended stays and be able to stay right on the river and along the Parkway. Over time as the Parkway starts to gain more attention and attracts more people, the mixed-use development will be able to start to be developed. The multi-use site will allow for more public access to the riverfront and allow people to live, work, and enjoy life right along the river.

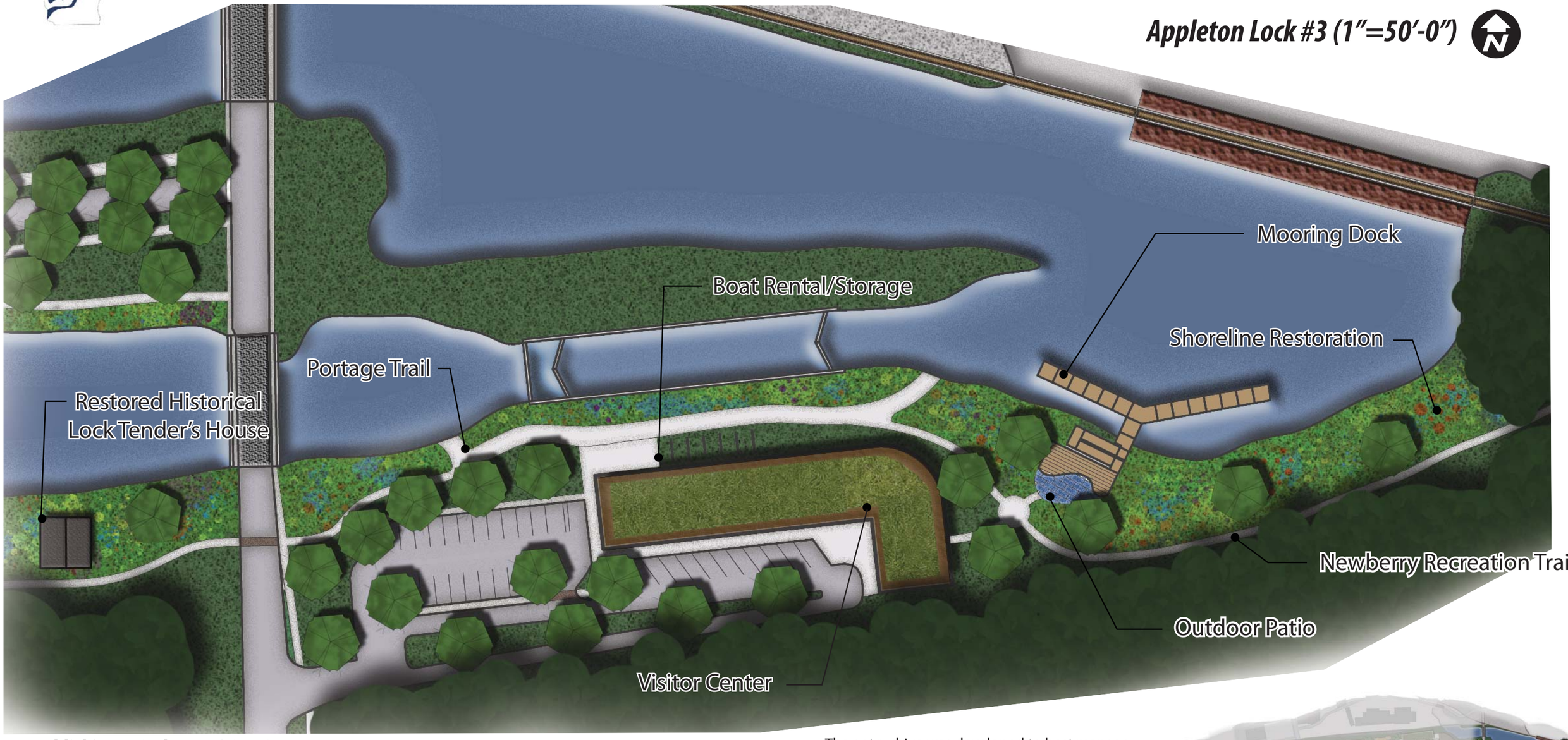






The visitor center will be located on a fairly busy street, Lawe St., in a smaller, calmer bay area along the river. View #4 shows the view into the bay and the swinging railroad trestle bridge that encloses the bay. The Lawe St. drawbridge borders the west side of the site, shown in view #3. The site is located close to Appleton's downtown and is accessible by a short walk north. Also located north of the site is Lawrence University's new student union that was built into the side of the river valley. Friends of the Fox is currently working on a project to develop abandoned railroad trestles into recreational trails just north of the site as well. The Newberry recreational trail runs into the existing site, shown in view # 2, but the trail stops when it crosses the street and then picks up again at the east side of the site. The site itself is relatively flat and is an existing paved parking lot, shown in view #1. The surrounding areas to the south of the site are very steep slopes, potentially causing stormwater runoff issues, depicted by the two foot contours.

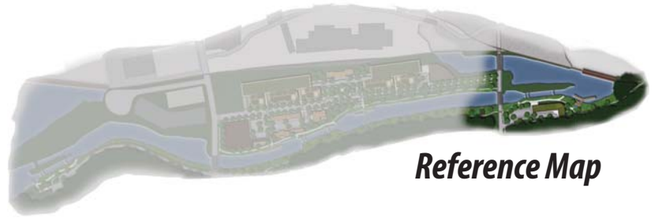
Appleton Lock #3 (1"=50'-0")



Establishing a Parkway Visitor Center

The Parkway Visitor Center is going to serve as the foundation of the Parkway. It would serve as the support system and foundation to the future development of the Parkway, and would house the Parkway headquarters and offices. It would be a place for tourists, but also be open as a place for the entire community. The visitor center would possibly have space to house small events and a small cafe or bar. The connection of the recreation trail, portage trail, boat rental space, and the outdoor patio space and mooring dock are all areas that residents of the local community could take advantage along with visiting tourists. The restored historical lock tender's house would be an opportunity to display some of the historical roles that the lock tender's played along the river.

The entry drive was developed to best manage the stormwater running off the steep slope from the south, developing a double swale system to collect runoff. Another environmental improvement on the site is the restoration of the shoreline. Removing all invasive and unhealthy species and introducing native slope stabilization species to improve the shoreline functionally and aesthetically.



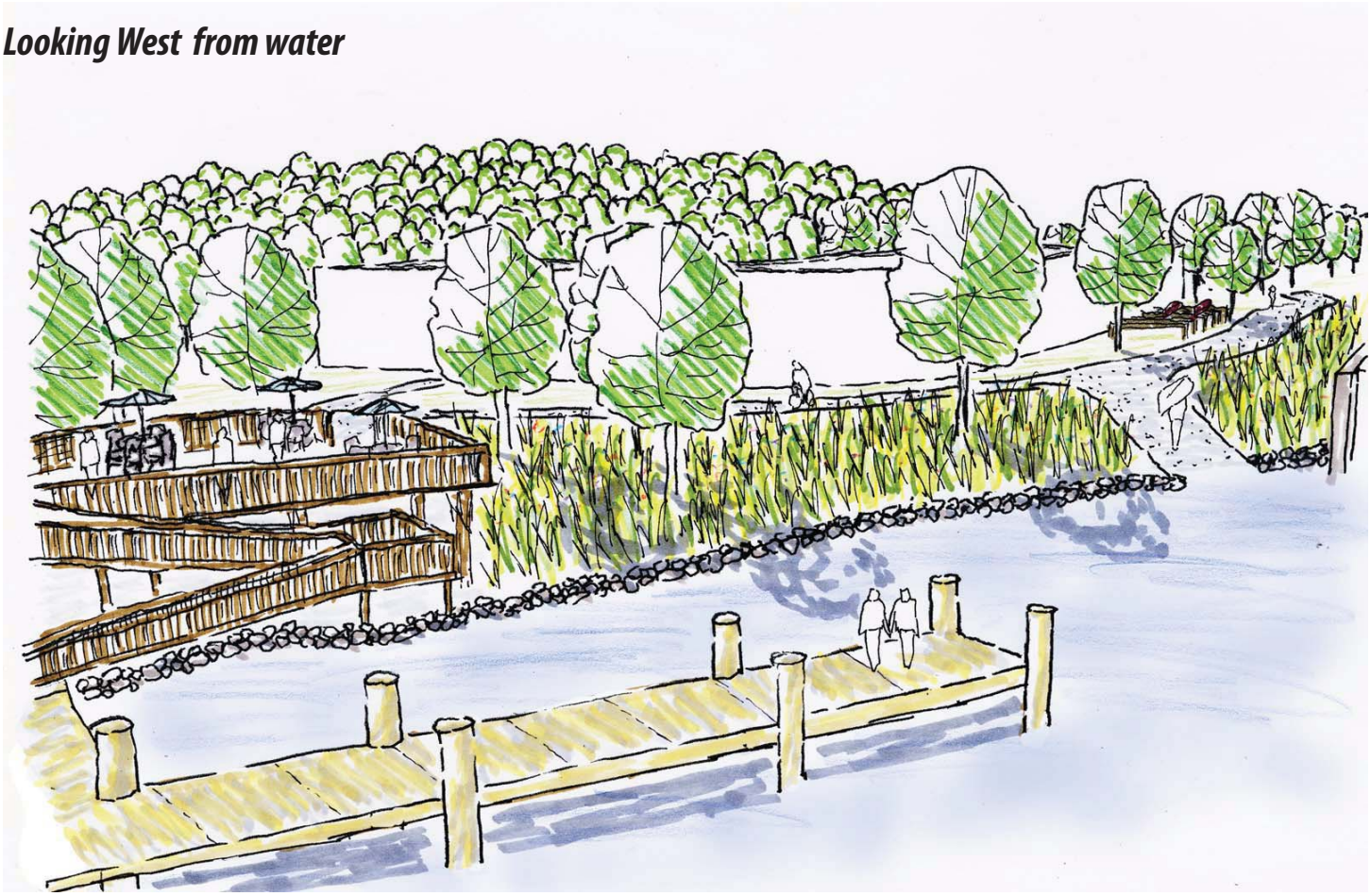
Reference Map

Patio, Dock, & Portage Trail

Appleton Lock #3 Currently

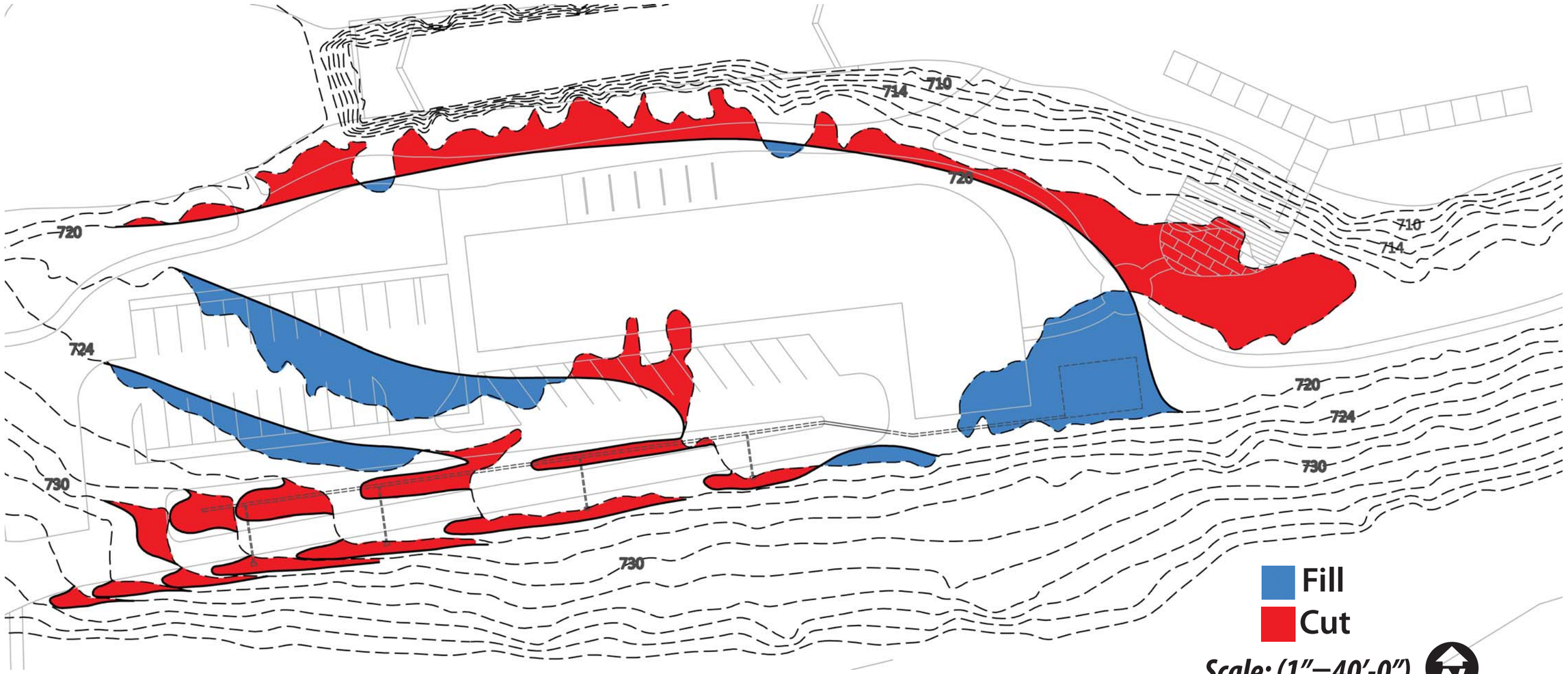
This aerial view shows the existing site conditions at the Appleton lock #3, the future site of the Parkway Visitor center. In this picture you can see the existing parking lot, entry drive, and small bay bordered by the railroad trestle.

Looking West from water



This perspective of the Visitor Center is taken from the water looking west into the site. In this illustration you can see many of the proposed design features. You can see the mooring dock and the ramp up to the outdoor patio, the recreation trail that wraps around the Visitor Center and the boat portage can be seen breaking off of the trail headed down to the shoreline. The boat storage area is visible off in the distance. Finally, the proposed shoreline restoration is depicted and you can also see the vegetated slope that runs down into the site.

Visitor Center Site Grading



Cut & Fill Calculations

Total Cut: 20,347 cubic feet

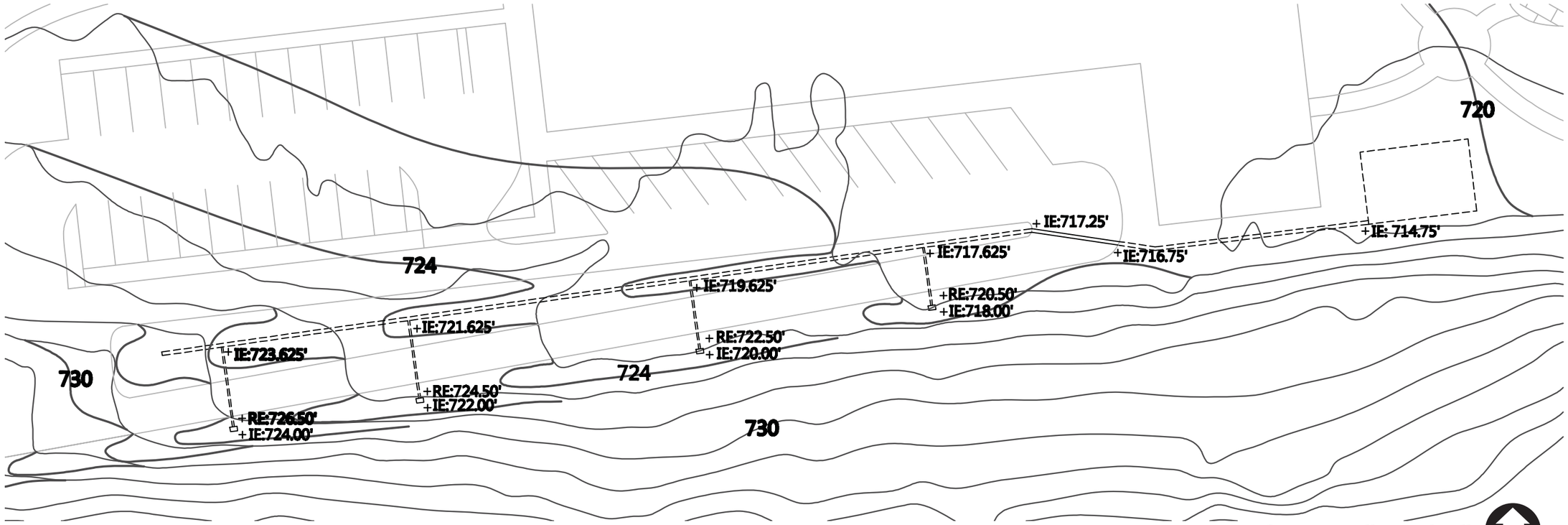
Total Fill: 12, 860 cubic feet
(x 1.25 = 16,075 cubic feet)

20,347 cu.ft. - 16,075 cu. ft. = 4,272 cubic feet of extra fill

4,272 cu.ft / 27 cu.ft/cubic yards = 158.22 cubic yards of extra fill

Site Grading Concepts

A large majority of the grading on the site was arranged to create a double swale system to help manage stormwater off the slope on the south side of the site. The building sits between an elevation of 722 feet and 720 feet. The shoreline was regraded for more of a constant slope for the installation of the recreational trail. After all the of the calculations there was more cut than fill, totalling an amount of 158.22 extra cubic yards of soil.



Scale: (1"=30'-0")

Stormwater Calculations (Delta Q = -3.5603)

Total Watershed = 194,718 square feet or 4.47 acres

100 year storm Pre-Q = 7.7967 cubic feet per second
(Impervious & Vegetated Surfaces)

100 year storm Post-Q = 4.2364 cubic feet per second
(Impervious, Green Roof, Planted, Permeable, Vegetated Surfaces)

Delta Q: 4.2364 - 7.7967 = -3.5603 cubic feet per second

Subsurface Storage Calculations (Total Storage = 7,825 cubic feet of storage)

30' x 20' Storage Basin
1'-0" of #6 Stone / 2'-0" of 3" Stone / 3'-0" of 8" Stone
Total Storage = 1,290 cubic feet of storage

Perforated Spreaders
1,455 cubic feet of 3" Stone
Total Storage = 509 cubic feet of storage

Pervious Trailways (4,726 square feet)
6" of #6 Stone / 1'-0" of 3" Stone / 2'-0" of 8" Stone

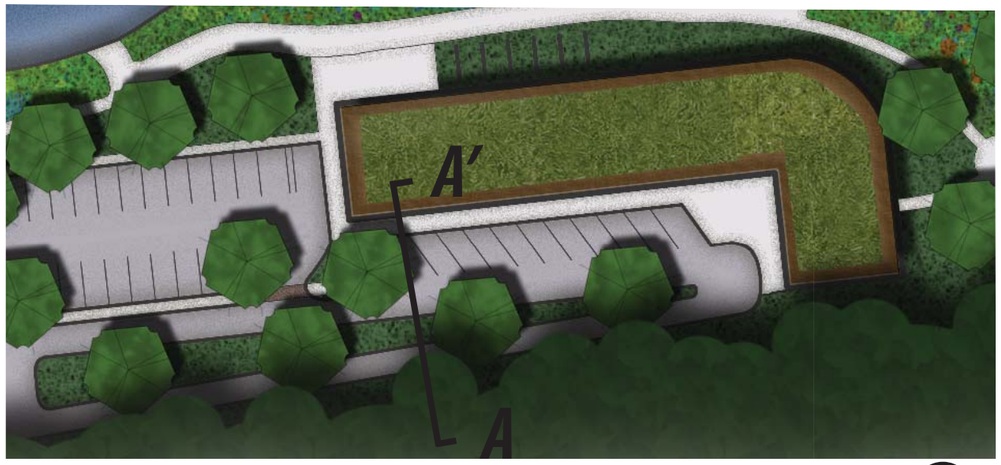
Total Storage = 6,026 cubic feet of storage

Achieving a negative delta Q was done quite easily considering a majority of the site previously was an impervious parking lot. Introducing a lot of pervious surfaces and plantings allowed for effective stormwater management.

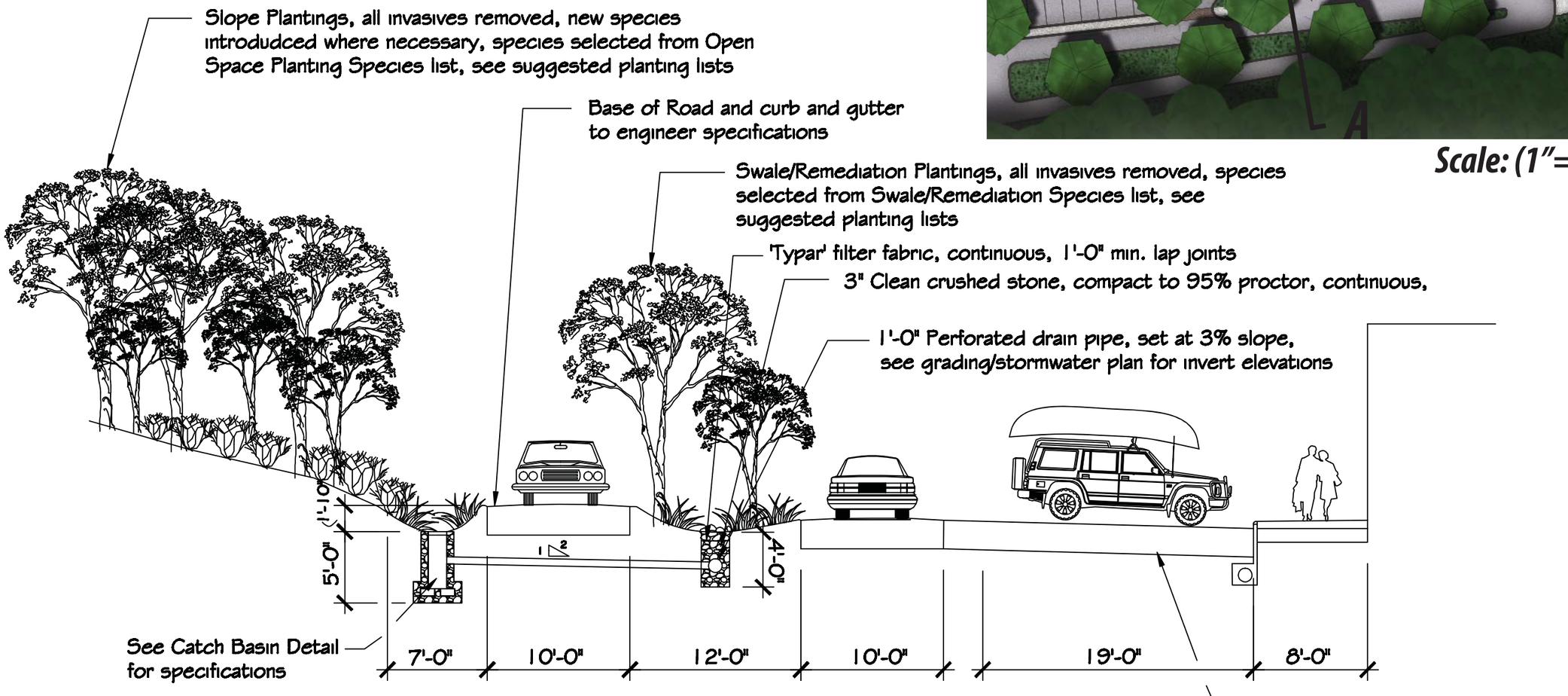
The Stormwater plan of the visitor center coincides with the grading plan both working together to manage the heavy slope from the southern end of the site. The double swale set up by the grading plan allows for a double catchment plan to deal with the stormwater. Along the initial swale are catch basins to grab as much of the sediment rolling off of the slope. The catch basin is designed to pipe overflow water into the second swale in the middle of the entry road. The center swale is designed to catch any of the excess sediment and water that the first swale does not grab. The central pipe along the second swale is sloped towards the east where it will flow towards an underground storage basin to manage any major rainfall events. Where the pipe crosses the entry road would be a trench drain to act as a fail safe to stop any water from flowing directly into the building. Rim and invert elevations are provided to show elevation and flow of water.

Visitor Center Stormwater Section

Scale (1 1/2"=1'-0")



Scale: (1"=50'-0")



Visitor Center Stormwater Management

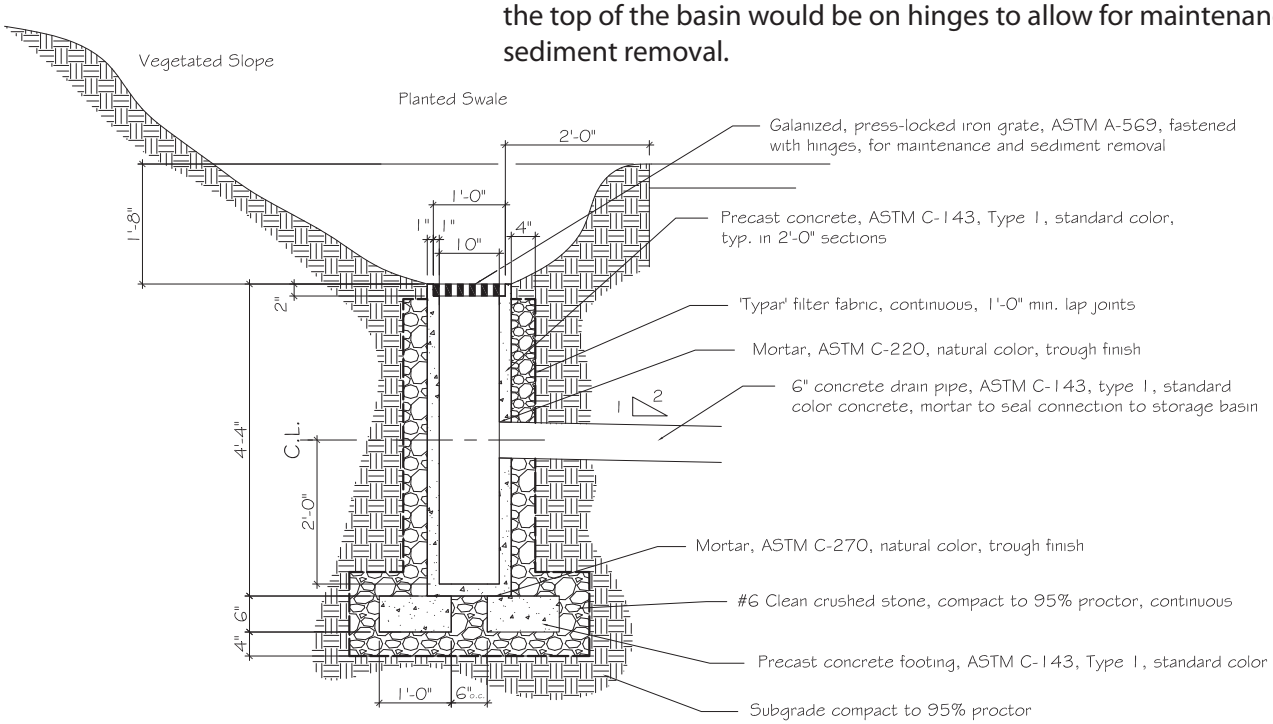
This section illustrates the double swale system described in the grading and stormwater management plans. The first swale shows the catch basin system piping into the central swale that also serves as a level spreader. The swale and remediation species are also addressed here and will be specified in the planting section later in the document.

Visitor Center Construction Details

Catch Basin Detail

Scale (1/4"=1'-0")

This detail illustrates the construction of the catch basins that would be installed in the first swale to collect sediment. The grate on the top of the basin would be on hinges to allow for maintenance and sediment removal.



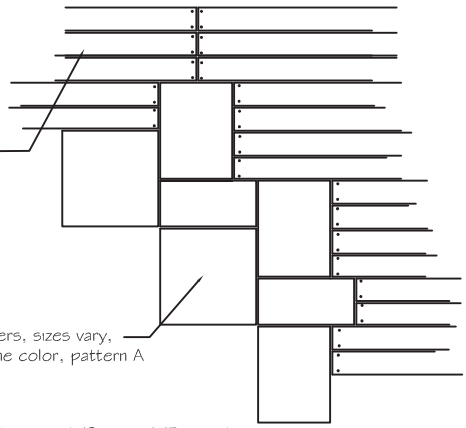
Patio / Deck Detail

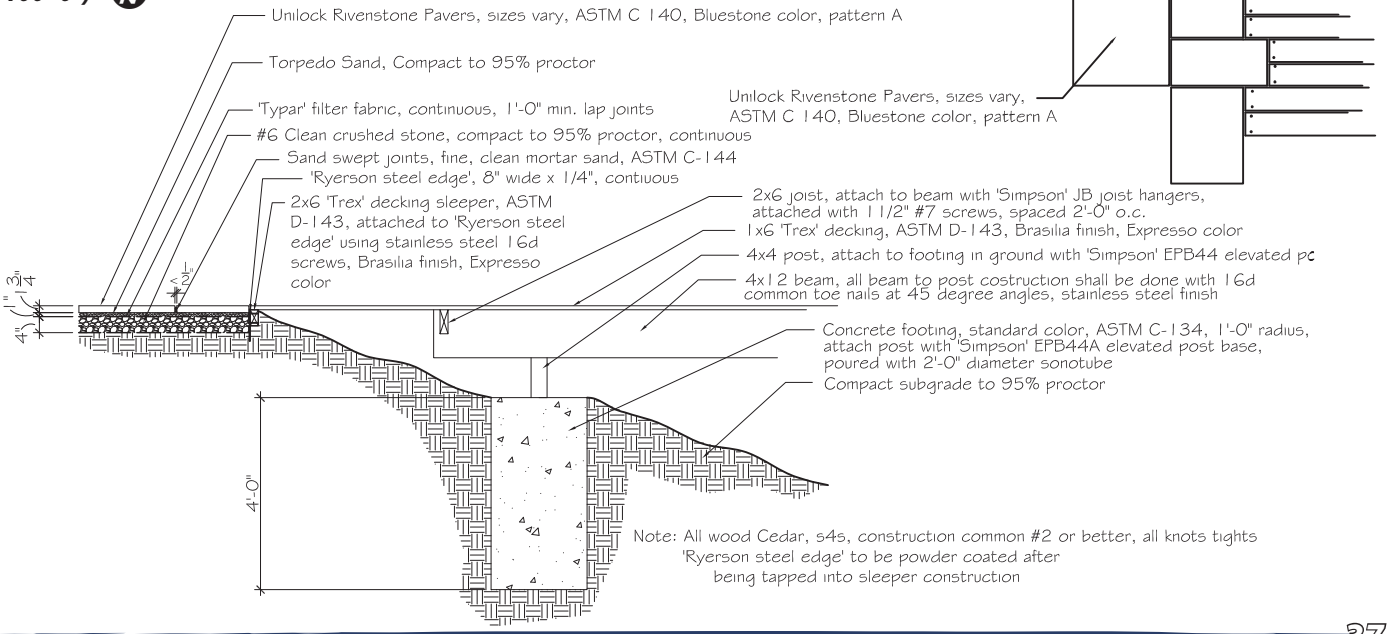
Scale (1/4"=1'-0")

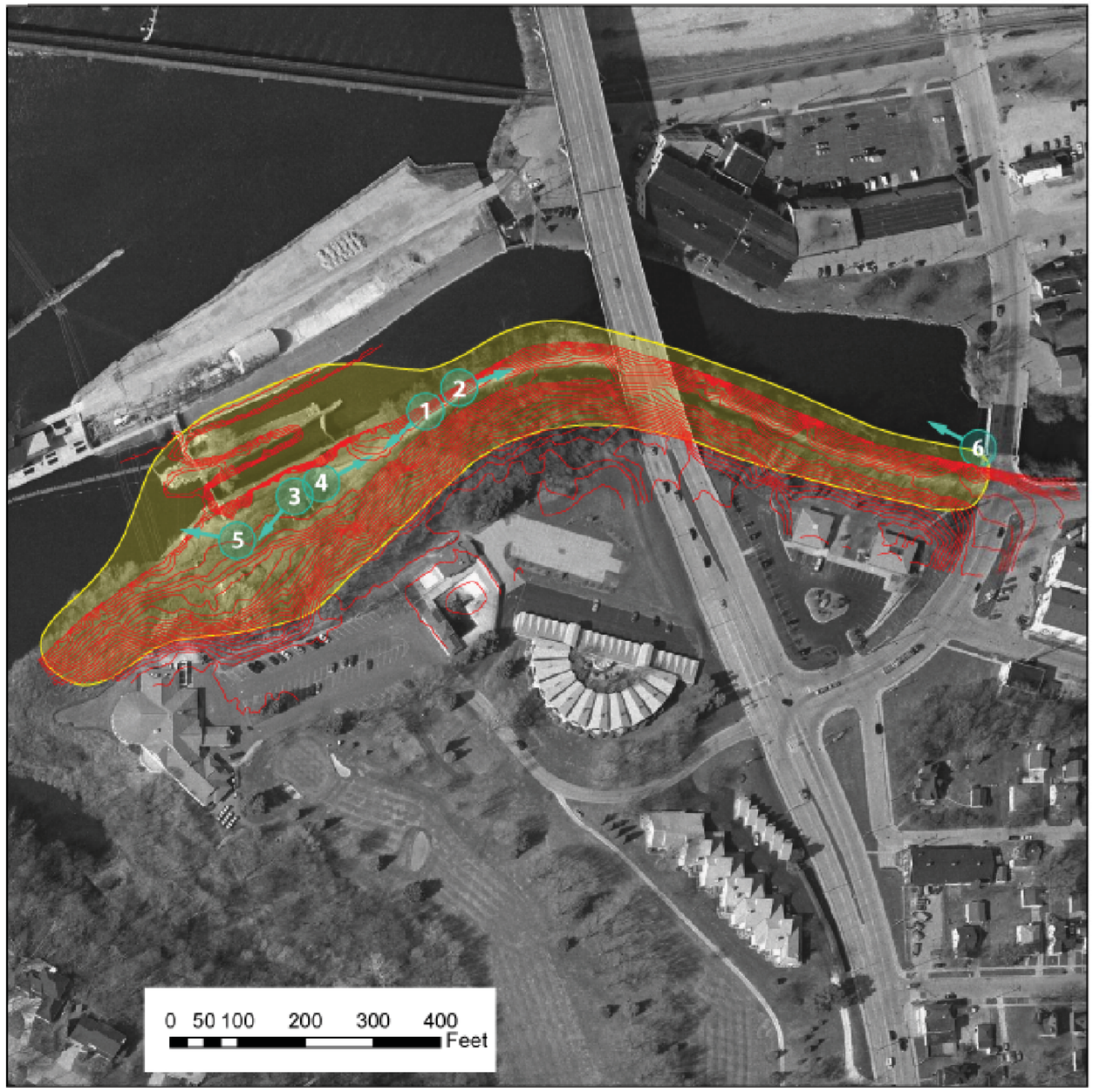
This detail illustrates the construction of the patio and deck, highlighting the transition between Bluestone pavers and Trex decking. The transition would be a unique jagged form from one material to the next. The construction would be completed by attaching a sleeper into the Ryerson steel edge along the edge of the pavers.

Scale: (1"=100'-0")

Plan View Scale (1/8"=1'-0")

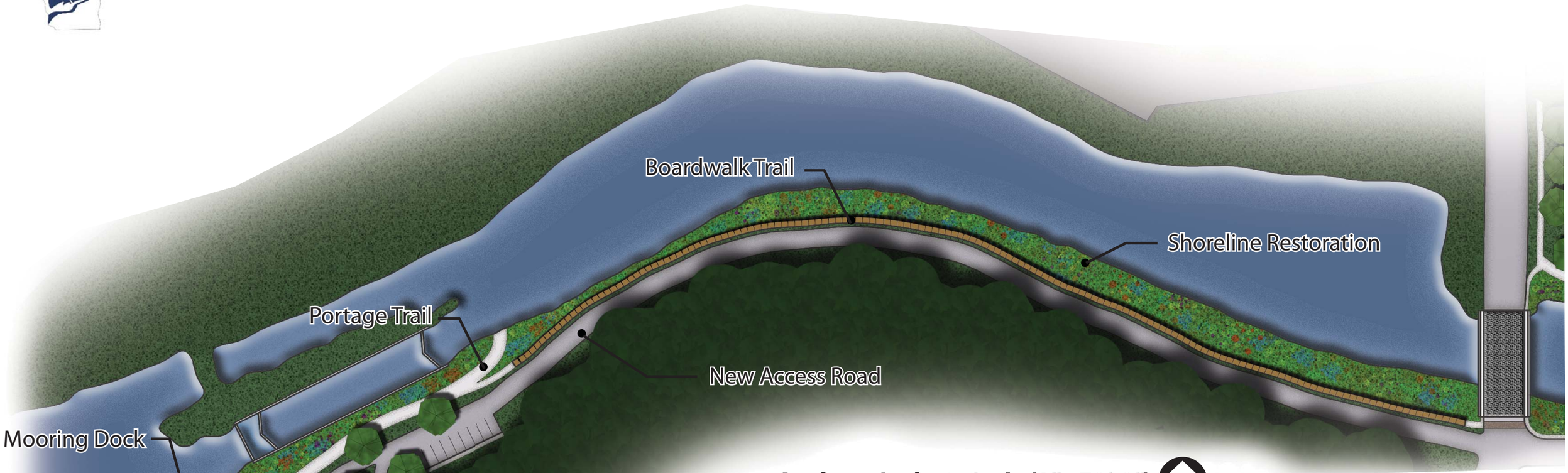




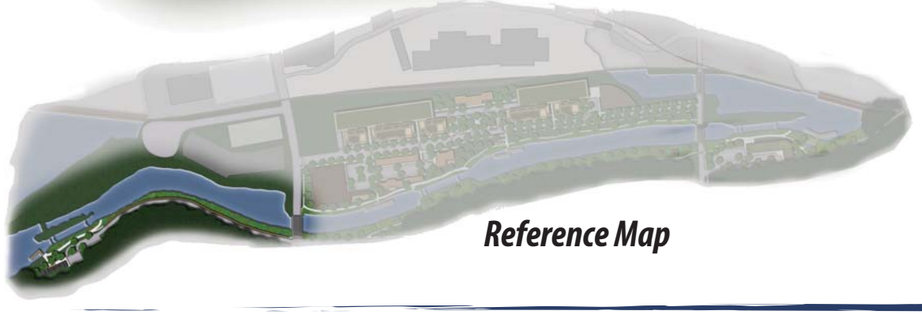


The bed and breakfast is located at Appleton lock #1 just west of the visitor center. It also is located in a quieter bay along the river, shown slightly in view #5. It is also set back in more of a wooded setting with many mature trees, shown in view #3. Like the visitor center, the southern end of the site is bordered by a steep slope. The bed and breakfast site is very close to local attractions such as Trolley Square, Between the Locks entertainment center, and the Paper Industry Hall of Fame, and is also still within walking distance of the downtown. There is an existing narrow gravel access road, view #1 and #2, leading to the site and the historical lock tender's house, seen in view #3. The gravel road travels under the Skyline Bridge that crosses the entire Fox River, shown in view #4 and #6. The current shoreline is heavily vegetated, view #2 and #6, blocking many of the ideal views of the river.

Bed & Breakfast Site Plan (Phase 2)



Appleton Lock #1 Scale (1"=70'-0")



Reference Map

Bed & Breakfast Development

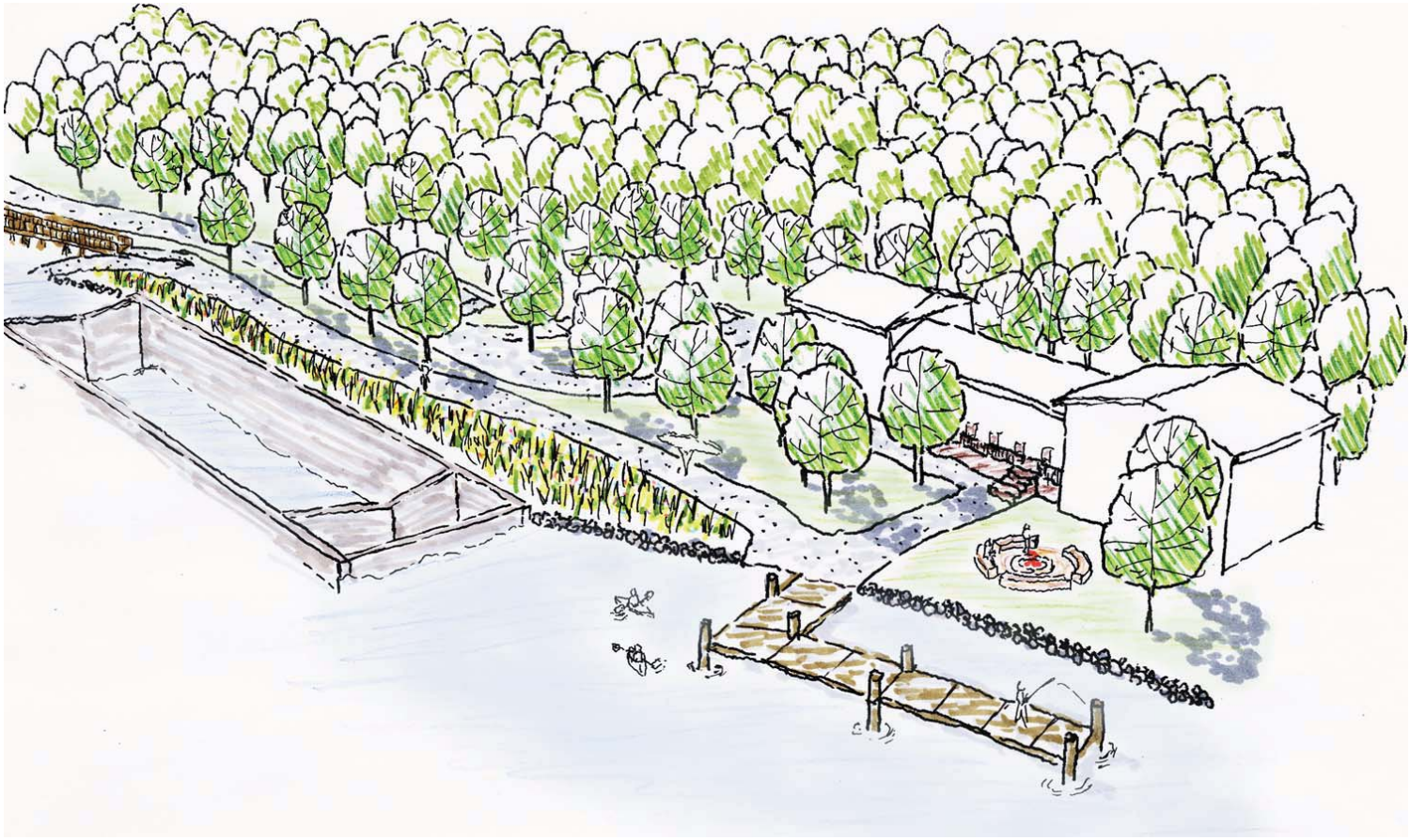
The bed and breakfast development will serve the Parkway by providing a place for visitors to stay, allowing them to plan longer trips and explore more of the Parkway and local communities increasing the economic gains brought into the area and the Parkway. Restoring and developing the old lock tender's house into a bed and breakfast would utilize the old house as an important piece of the Parkway. Adding an addition on to the old house would allow for the accommodation of more visitors. The entire site is made accessible by creating a new access road into the site. Currently there is an existing access road but it is not paved and is very narrow. The new road would lead into parking for visitors staying at the bed and breakfast. There are also a number of passive recreation options including a rocking porch on the outside of the house for visitors to relax and enjoy views of the river. There is also a fire pit council ring as another option for visitors to relax. Other recreation options on site include a portage trail and mooring dock for visitors traveling by boat. To connect the site for users who choose to travel by bike or foot there is a boardwalk trail that connects up to the Newberry recreational trail and Parkway Visitor Center. Similar to the Visitor Center the major environmental improvement on the site is the restoration of the shoreline. Removing all invasive and unhealthy species and introducing native slope stabilization species to improve the shoreline functionally and aesthetically.

Bed and Breakfast Aerial

Appleton Lock #1 During Lock Restoration

This aerial view shows the existing site conditions at the Appleton lock #1, the future site of the Bed and Breakfast. This picture was captured during the restoration of the lock. You can see the existing lock tender's house tucked back in the woods. The existing gravel drive is faintly visible coming into the site on the left side of the image.

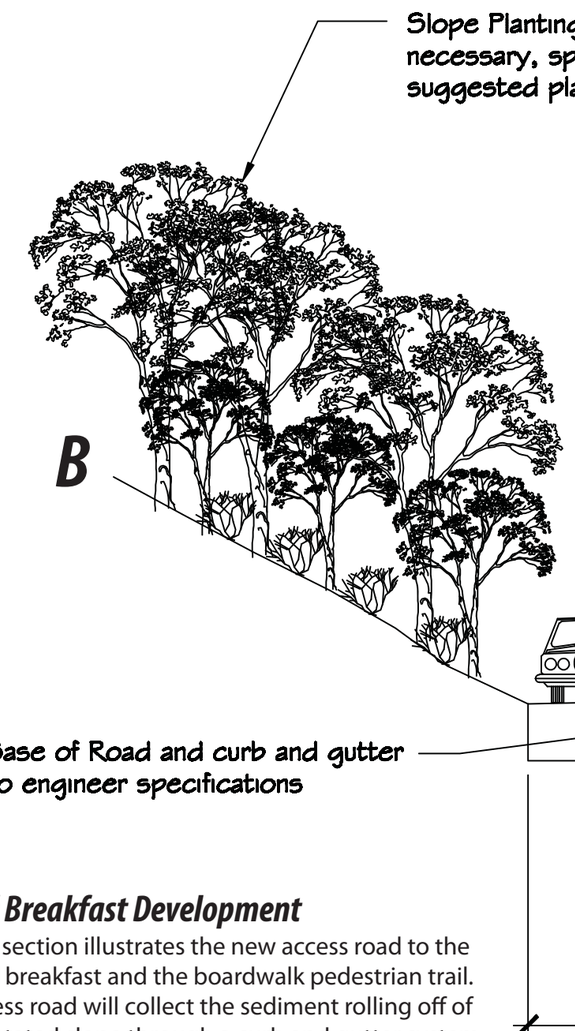
Looking east from water

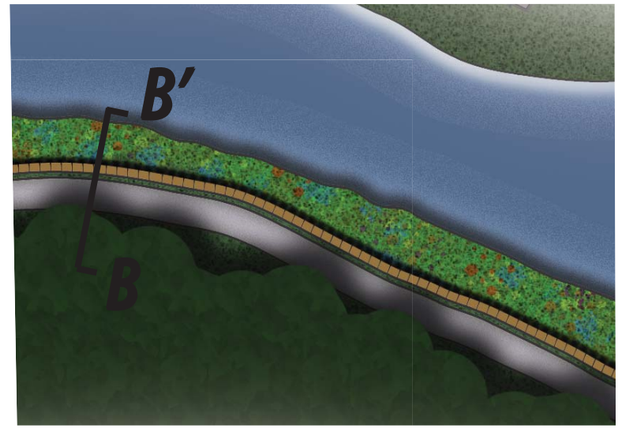


This perspective of the Bed and Breakfast is taken from the water looking east into the site. In this illustration you can see many of the proposed design features. The mooring dock and the beginning of the portage trail come up just before entering into the lock. The restoration of the shoreline is depicted along the length of the lock. Many of the recreational opportunities are highlighted as well. The fire pit council ring is shown along the shoreline, and up against the house you can see the rocking patio set out in front. The vegetated slope is shown flowing down into the site. Finally, the beginning of the boardwalk trail is shown at the far left of the illustration.

Access Road, Boardwalk, Slope & Shoreline Management

Scale (1 1/2"=1'-0")





Scale (1"=70'-0")

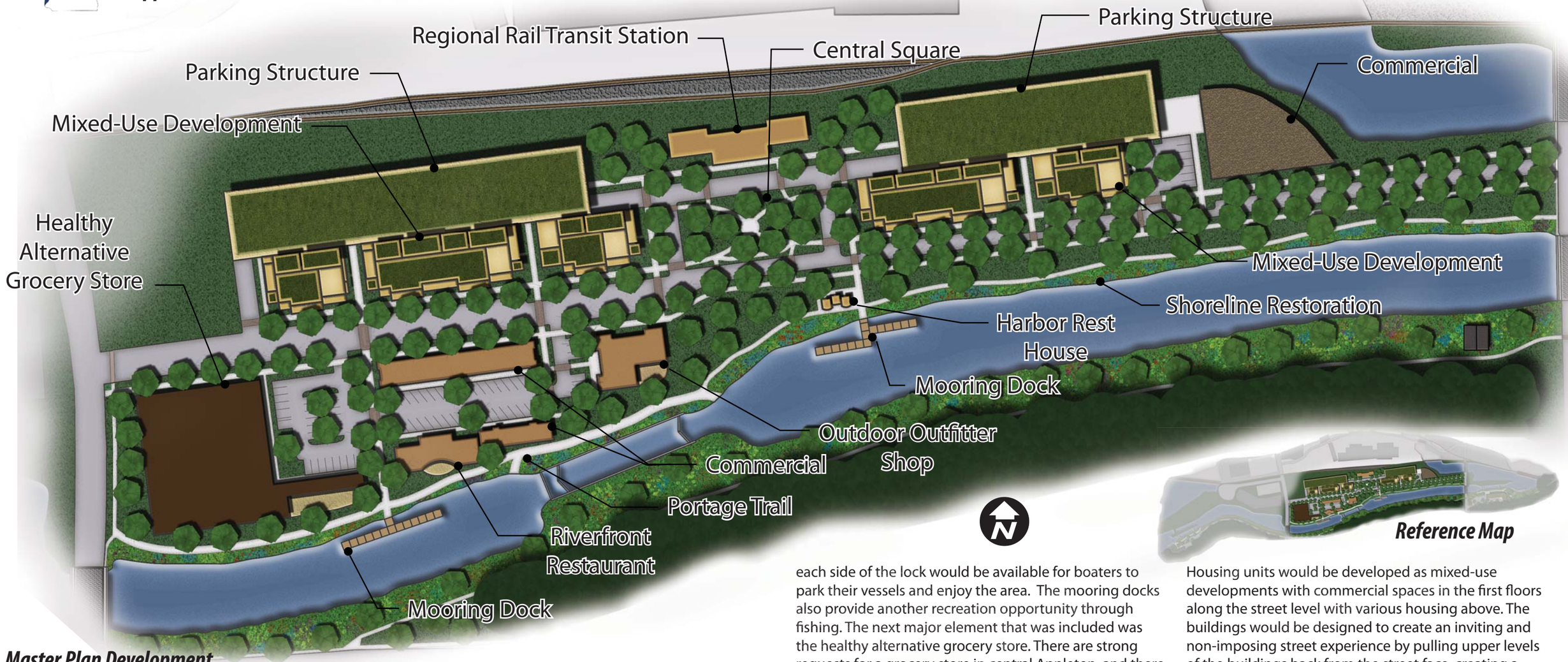
Bed and Breakfast Development

This section illustrates the new access road to the bed and breakfast and the boardwalk pedestrian trail. The access road will collect the sediment rolling off of the vegetated slope through a curb and gutter system. The concrete face between the boardwalk trail and the road would be finished with a formliner for aesthetic purposes. The boardwalk trail would be finished out of Trex decking for more durability and less maintenance. The shoreline species are also addressed here and will be specified in the planting section later in the document.

Note: In all planting zones invasive species removed
All Shoreline Plantings species selected from Shoreline Species planting list see suggested planting lists

Mixed-Use Development Master Plan (Phase 3)

Appleton Lock #2 Scale(1:120)



Master Plan Development

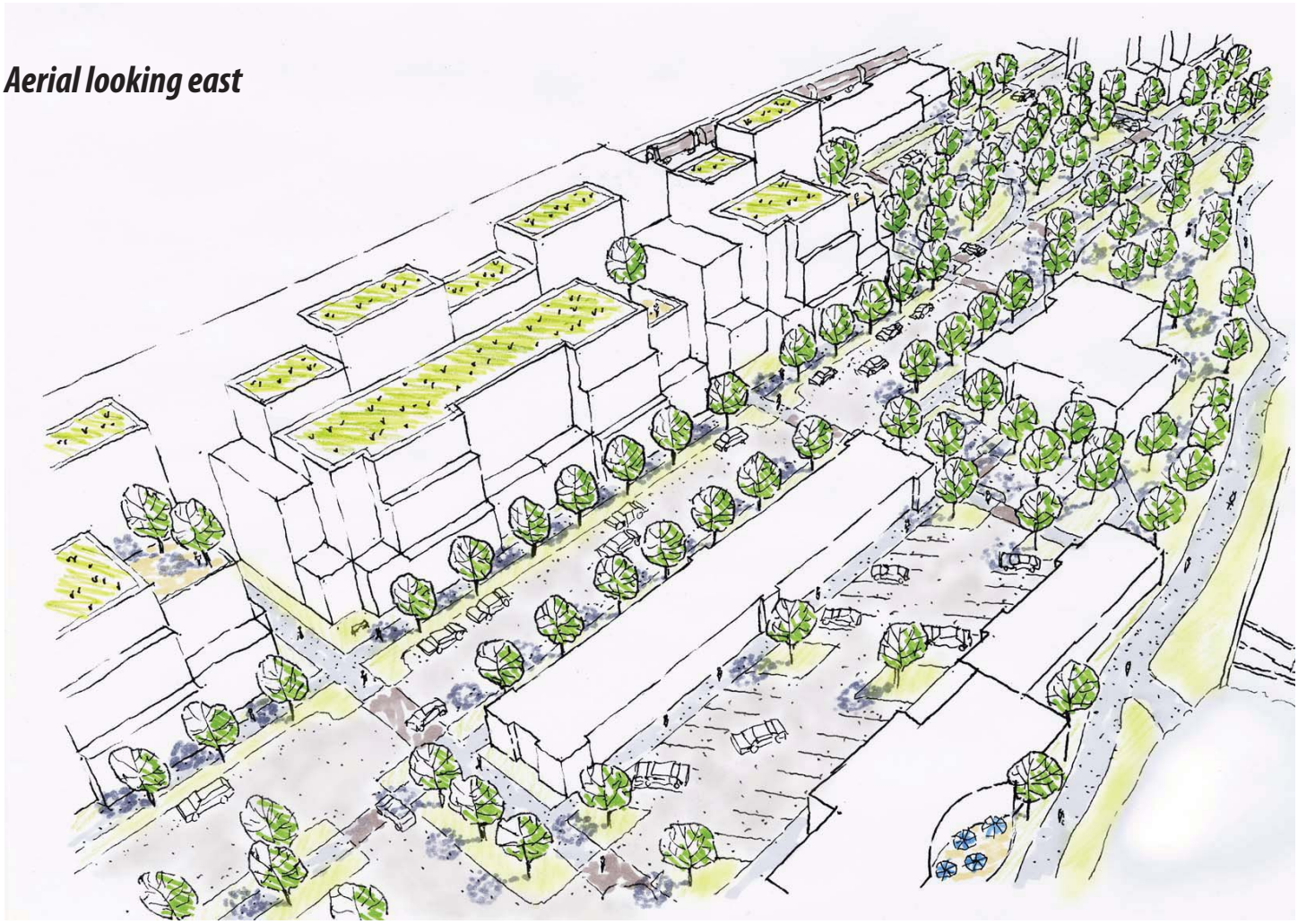
This mixed-use development is a long range plan for the development of an abandoned paper mill site. The site was designed off the main axis road that is currently existing. Entering the site from the west the road is two-way with two-sided parking. Once you reach the central square the road turns into a one-way road continuing to the east side of the site. This was designed to take into consideration the narrow strip of land between two bridges. An intersection at this location allowing cars to turn left into the site from the east would only create traffic conflicts. The road at the eastern part of the design is an exit only. The next major focus was to open up as much public waterfront access as possible for the community. A recreational trail was designed to run the entire length of the site creating three different experiences along the way. The western part of the site is more of a commercial, social feeling with patios and commercial interaction. The central section of the trail is a more formal civic feeling with a public rest house for travelers to relax and refuel their energy. The same section of the trail is located on an axis with a central square and the regional rail transit station. The last section of the masterplan is more of a passive nature trail with open green space. Two separate mooring docks, one on each side of the lock would be available for boaters to park their vessels and enjoy the area. The mooring docks also provide another recreation opportunity through fishing. The next major element that was included was the healthy alternative grocery store. There are strong requests for a grocery store in central Appleton, and there is a need for a healthy alternative grocery store in the Fox Valley. The idea of a healthy alternative grocery refers to stores similar to Trader Joes or Whole Foods. The store would also have a small cafe or deli with an outdoor patio along the river. The riverfront is a great setting for a restaurant and providing a place to experience good food in a good setting along the river. The restaurant would also provide outdoor patio seating. The next business to fit down on the riverfront would be an outdoor outfitter shop that would be able to utilize the river and the portage trail as a space to do product demonstrations, give lessons, and allow customers to try out equipment. Housing units would be developed as mixed-use developments with commercial spaces in the first floors along the street level with various housing above. The buildings would be designed to create an inviting and non-imposing street experience by pulling upper levels of the buildings back from the street face, creating a better streetscape experience. Green roofs would also be incorporated into these developments as well. Parking structures would be located directly behind the mixed-use to accommodate residents, workers, and consumers. Other commercial spaces would be developed as well, to accommodate a wide variety of businesses. The last element to be incorporated into the site would be a regional rail transit station that would take advantage of the existing rail lines. As the industrial uses of the railroads start to decline, the railroads could then start to transition into the development of a mass transit system to serve the entire Fox Valley and other surrounding regions.

Mixed-Use Development Aerial

Vacant Wisconsin Paper Company (Appleton Lock #2)

This aerial view shows the existing site conditions at the Appleton lock #2, the future site of the mixed-use development. In the image you can see the existing abandoned paper mill towards the bottom, and then separated by the railroad is the operating paper mill to the top of the image. Along the bottom of the image you can see the river flowing through the site.

Aerial looking east



This perspective of the mixed-use development is an aerial view looking east into the site. In the illustration you can see many of the proposed design features. The main road is shown running through the site. The mixed-use buildings are shown with the multiple levels of housing and commercial space with green roofs atop. At the top right of the illustration you can see the central square with the regional rail transit station at the edge of the square. Also shown in the illustration are the riverfront restaurant with its outdoor patio along the edge of the pedestrian trail looking out onto the river. The outdoor outfitter shop and two other proposed commercial buildings are also depicted with available parking for all developments in the area.

Pedestrian Trail Perspectives

Looking east from water

This perspective of the mixed-use development is looking east along the pedestrian trail. In the illustration you can see many of the proposed design features. The patios of the grocery store deli and the riverfront restaurant are shown. The shoreline restoration runs the length of the river, and one of the two mooring docks on the site is shown.

Looking west from water

This perspective of the mixed-use development is looking west along the pedestrian trail on the other side of the lock as the above illustration. In the illustration you can see many of the proposed design features. The harbor rest house is shown just off the riverfront just above the second mooring dock on along the water. Also shown in the background are the mixed-use buildings, and in the back on the right side the central square can be seen through the trees.

Mixed-use Phasing Plan

Mixed-use Phasing Plan

The development of the mixed-use masterplan has been phased out to be developed as more and more interest is drawn to the site. The commercial end of the plan would be developed first to create and economic base for future developments. The commercial sites would establish a solid base of visitors to the site attracting more economic viability for future development. Another way to bring people into the site would be to develop the public shoreline. The shoreline would open up more riverfront access for the public, drawing them in to experience the river.

Phase two would bring the development of housing and more commercial spacesthrough the developement of the first mixed-use building. This would allow people to make a permanent home down on the river, which is always a desired location to settle. Parking would also be constructed for resident parking and also to accommodate the increasing numbers at the phase one commercial spaces and for the new commercial spaces in the mixed-use building on the first floor. Also developed in phase two would be the harbor rest house. As this development becomes more desirable to in, increasing amounts of people will be interested in stopping along their journey and exploring the develpments along the river.

The third phase adds another mixed-use building for commercial and residential, and another commercial building that would take advantage of the prime views of the river looking northeast. The last major feature to be developed would be the central square and the regional rail transit station. This development is all dependent on the transition of the railroads from industrial to public transportation. More and more interest in the site and the creation of more live, work, and recreation spaces would allow for a transit station to accommodate all the people coming into the site.

Suggested Planting Species

N.T.S.

Shoreline Species

Emergent Species

Iris versicolor	Wild Iris
Scirpus fluvalitis	River Bulrush
Scirpus validus	Softstem Bulrush

Wet Soil

Asclepias incarnata	Marsh Milkweed
Carex crinita	Caterpillar Sedge
Carex stricta	Tussock Sedge
Carex vulpinoida	Fox Sedge
Juncus effusus	Soft Rush
Lobelia cardinalis	Cardinal Flower
Lobelia siphilitica	Great Blue Lobelia
Varonicastrum virginicastrum	Culver's Root

Drier Soil

Aquilegia canadensis	Columbine
Echinacea purpurea	Purple Coneflower
Elymus canadensis	Canada Wild Rye
Panicum virgatum	Switchgrass
Rudbeckia subtometosa	Sweet Black-Eyed Susan
Schizachyrum scoparium	Little Bluestem
Solidago speciosa	Showy Goldenrod

Shrubs

Amelachier x grandiflora	Apple Serviceberry
Cornus stolonifera	Red-Twig Dogwood
Viburnum trilobum	Highbush Cranberry

Trees

Betula nigra	River Birch
Betula papyrifera	Paper Birch
Quercus bicolor	Swamp White Oak

Open Space Plantings

Grasses

Chasmanthium latifolium	Northern Sea Oats
Sorghastrum nutans	Indiangrass Plant
Sporobolus heterolepias	Prairie Dropseed

Medium to Small Trees

Amelanchier laevis	Allegheny Serviceberry
Betula allegheniensis	Yellow Birch
Betula nigra	River Birch
Cornus alternifolia	Pagoda Dogwood
Crataegus viridis 'Winter King'	'Winter King' Hawthorne
Hammamelis virginiana	Common Witchazel

Large Trees

Quercus alba	White Oak
Quercus rubra	Red Oak

Evergreen Trees

Picea glauca	White Spruce
Pinus strobus	Eastern White Cedar

Street & Parking Plantings

Grasses

Sorghastrum nutans	Indiangrass Plant
Sporobolus heterolepias	Prairie Dropseed

Large Trees

Acer x freemanii	Freeman Maple
Acer miyabei 'State street'	State Street Maple
Celtis occidentalis	Common Hackberry
Gleditsia triacanthos var. inermis	Thornless Honeylocust

Swale / Remediation Species

Trees

Betula nigra	River Birch
Crataegus viridis 'Winter King'	'Winter King' Hawthorne
Ostrya virginiana	Ironwood

Shrubs

Aronia melanocarpa	Black Chokeberry
Cornus stolonifera	Red-Twig Dogwood
Corylus americana	American Hazelnut

Groundcovers

Convallaris majalis	Lily-of-the-Valley
Echinacea sp.	Conflower sp.
Eupatorium maculatum	Joe-Pye Weed
Matteuucia struthiopteris pensylvanica	Ostrich Fern
Panicum virgatum	Switch Grass
Rudbeckia hirta	Black-Eyed Susan
Sedum sp.	Sedum sp.

Green Roof Species (extensive)

Groundcovers

Apocynum androsaemifolium	Spreading Dogbane
Asclepias tuberosa	Butterfly Weed
Lupinus sp.	Wild Lupine
Petalosteum purpureum	Purple Prairie Cover
Phlox divaricata	Wild Blue Phlox
Polygala incarnata	Pink Milkwort
Sedum var.	Sedum var.
Soldiago sp.	Goldenrod

Conclusions and Reflections

As I finish up this capstone project I reflect back on the entire experience. Looking back at where I was at when the year started I am happy with all of the progress that I have made and am very proud of the project that I have produced. I am very honored to have had the opportunity to work on this extremely significant and important project for the entire State of Wisconsin. I hope this work that I have produced will be of great benefit to the development of the Parkway. I plan to stay involved in the project as it continues to develop. I feel that this project would be an amazing addition to the State of Wisconsin but more specifically the City of Appleton, where I focused my designs. I was born and raised in Appleton and am very proud the city and feel that developing its riverfront would only make it a better place to live than it already is.

Personally, I am pleased with the finished product , although I am a strong believer that there is always room for improvement and always strive to do the best work I can produce. I am happy with all that I have learned through this project. I have become more skilled with my computer graphics, hand-graphics, design development, and technical writing skills, but most importantly project management skills. Taking a project, individually developed through collaboration with a professional client, from start to finish and accomplishing all of the tasks in between was a great achievement. Having the freedom on this project to really approach it in the way that I felt would produce the best results really allowed complete control on every aspect of this project. I learned to plan and manage all of the elements involved and bring them all together to produce this final document. I found that compared to all my previous years in the program, this capstone year I was more organized, focused, and prepared for all of the deadlines and obstacles along the way. I managed my time and used it in the most efficient ways. I feel the main reason for this was having an individual project and the freedom to make it what you ultimately wanted. From the beginning to the end of this project I have not lost a bit of interest, and stayed driven to produce a successful project. It was important for me to have such strong personal ties to this project and helped me stay motivated along the way. After completing this project and from my four years in the program here at the University of Wisconsin-Madison I feel that I am prepared for a professional career and confindent that I can and will be successful; accomplishing great things with great people for great people.

Lastly, I would like to thank everyone for the support along the way, not only through this project but my entire time here. It's truly been a great experience and time that will never be forgotten. Thanks.

Appendix A-1: Stormwater Calculations

RUNOFF VALUES									
PRECONSTRUCTION CONDITIONS			Choose Correct						
Enter Landcover Type	Area (sq. ft.)	Area (acres)	C Value	Design Storm (10/100)		Q (GPM) 10 yr	Q (CFS) 10yr	Q (GPM) 100 yr	Q (CFS) 100 yr
Impervious (Roofs, Pavement)	75095	2	0.95	2.50	3.00	1853.3786	4.0944	2224.0543	4.9132
Vegetation (Steep Slopes)	119623	3	0.35	2.50	3.00	1087.7078	2.4029	1305.2494	2.8835
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
Total Area	**194718**	**4**			**Q Total (per hr.).**	**2941.0865**	**6.4973**	**3529.3038**	**7.7967**
					Total CF @ 2hr.		**46780.2893**		**56136.3471**
POSTCONSTRUCTION CONDITIONS			Choose Correct						
Enter Landcover Type	Area (sq. ft.)	Area (acres)	C Value	Design Storm (10/100)		Q (GPM) 10 yr	Q (CFS) 10yr	Q (GPM) 100 yr	Q (CFS) 100 yr
Impervious (Roofs, Pavement)	47375	1	0.95	2.50	3.00	1169.2365	2.5830	1403.0838	3.0996
Green Roof	11550	0	0.40	2.50	3.00	120.0249	0.2652	144.0299	0.3182
Green Areas (Plantings)	33321	1	0.30	2.50	3.00	259.6981	0.5737	311.6377	0.6885
Permeable Pavement	4726	0	0.40	2.50	3.00	49.1115	0.1085	58.9338	0.1302
Vegetation (Steep Slopes)	97746	2	0.35	2.50	3.00	888.7847	1.9634	1066.5416	2.3561
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
		0		2.50	3.00	0.0000	0.0000	0.0000	0.0000
Total Area	**194718**	**2**			**Q Total (per hr.)**	**1598.0710**	**3.5304**	**1917.6852**	**4.2364**
					Total CF @ 2hr.		**25418.5744**		**30502.2893**

Stormwater Calculations (Delta Q = -3.5603)

Total Watershed = 194,718 square feet or 4.47 acres

100 year storm Pre-Q = 7.7967 cubic feet per second
(Impervious & Vegetated Surfaces)

100 year storm Post-Q = 4.2364 cubic feet per second
(Impervious, Green Roof, Planted, Permeable, Vegetated Surfaces)

Delta Q: 4.2364 - 7.7967 = -3.5603 cubic feet per second

Subsurface Storage Calculations (Total Storage = 7,825 cubic feet of storage)

30′ x 20′ Storage Basin
1′-0″ of #6 Stone / 2′-0″ of 3″ Stone / 3′-0″ of 8″ Stone
Total Storage = 1,290 cubic feet of storage

Perforated Spreaders
1,455 cubic feet of 3″ Stone
Total Storage = 509 cubic feet of storage

Pervious Trailways (4,726 square feet)
6″ of #6 Stone / 1′-0″ of 3″ Stone / 2′-0″ of 8″ Stone

Total Storage = 6,026 cubic feet of storage

Appendix A-2: Time Log

Time Log Summary

Fall Semester 2008

	Hours worked
Week 1	8.5
Week 2	8.5
Week 3	9.5
Week 4	15
Week 5	5
Week 6	8
Week 7	12.5
Week 8	14
Week 9	13.5
Week 10	19
Week 11	25.5
Week 12	23
Week 13	42
Week 14	21
Week 15	18
Week 16	20

Semester Total = 263 hours

Spring Semester 2009

	Hours worked
Week 1	14
Week 2	12
Week 3	15
Week 4	25.5
Week 5	16
Week 6	18
Week 7	36
Week 8	31
Week 9	18.5
Week 10	28
Week 11	28
Week 12	43
Week 13	36
Week 14	41
Week 15	45

Semester Total = 407 hours Project Total = 670 hours

Appendix A-3: References & Citations

References throughout the project

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