Revitalizing the Waterfront for Community
Revitalizing
the
Waterfront
for Community

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Revitalizing the waterfront for community
acknowledgements

A creative artist works on his next composition because he was not satisfied with his pervious one.
-Dmitri Shostakovich

thank you to those who encourage me to be me my parents, my grandparents, my husband to be Lucas, and my dear friend Leslie

I would like to thank my professors and classmates at Ball State University for pushing, prying, and or encouraging whenever possible. The biggest lesson I learned was you never stop learning.

And a special thanks to “the girls” for life long friendship and endless inspiration.
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abstract

In recent history we have witnessed the “progression” of technology and subsequent degradation of our communities. While technology claims to connect and bring people together through ideas like the world wide web, this type of connection and technology in turn discourages local community values. The loss social interaction and recreation within our own homes, towns and landscapes deteriorates our communities. Recent changes in technology has removed the once strong connection each of our communities had to their landscape.

The Great Lakes communities and landscapes are of the most obvious examples of the effects technology has had on the integrity of our communities. These towns were once centered both socially and economically on their landscape, their identity and culture was defined by it. As technology shifted to the highways the communities began to lose their connection to the landscape and each other.

As designers, more specifically Landscape Architects, we have the ability and knowledge to discourage the effects our shifting technology has and provide for or improve the quality of life for a community. This study attempts to identify and utilize a community’s needs, both social and economic, and their local history to reconnect and revitalize the physical landscape, as well as, the social culture and identity.

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Throughout Great Lakes history, waterfront towns developed and flourished from the social and economic benefits the waterfront provided. The waterways played a vital role within our transportation and economic systems; establishing these towns as a vital parts of our society. These waterfront communities developed rich cultures and identity from the relationship and connection to their landscape. As changes in our technology occurred this connection was weakened, weakening the community, culture, and identity of the area. By reconnecting this community to its landscape the overall community, culture, and identity will improve.

The White Lake region and the town of Whitehall serve as excellent examples of this type of Great Lakes history and community culture. Located on a natural inlet off Lake Michigan, the history of the White Lake region is directly related the unique waterway connections originally settled by Native Americans. The area of Whitehall this study will focus on is the northwest corner where several opportunities and activities have existed throughout its history.

From studying the profession of Landscape Architecture I understand some of our primary concerns are people, community, quality of life, environments both man-made and natural, and how each of these relate to and interact with each other. This study aims to research and understand the social and physical structures of

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introduction

these historic communities as an aid in the redevelopment of the towns relationship, connection, and community identity as it relates to their history, the site and their waterfront. By reintroducing the local community to this lost amenity a revitalization in the communities identity and culture will occur. In the end this study will represent an alternative approach for communities along the Great Lakes to reconnect and develop their waterfronts and communities connections.
background

- History: Great Lakes and the White Lake Region

The history of this natural inlet, White Lake, is similar to that of many communities along the Great Lakes. The White Lake area was first recognized by the Native Americans who migrated along the system that flowed along the White River into White Lake and out to Lake Michigan. This extensive water and transportation system soon attracted other settlers. Fur trappers and traders were soon followed by industries such as logging.

During the lumber era this waterway was impeccable for clearing out and shipping inland forests with little work or effort. This era in our history was significant for the Great Lakes and their communities. Their location alone secured these communities with job and economic stability. As technology evolved industries followed leading to the development of the railroads and highway systems that enabled industry to move away from the shores.

While their removal improved the ecology and aesthetics of our shoreline, it also disconnected a culture and vitality that existed within these waterfront towns. The removal of this industry and activities that existed resulted in a decrease in property value. The land was viewed as no longer vital to the economy and dismissed. Soon private residents and industries began filling the shores.
background

- Current developments along the Great Lakes

Recent developments in similar waterfront communities have followed a few trends. Many of these towns have attempted to hold on to or reinstate some of the character and structures that are reminiscent of the industries that once fed the economies. This type of preservation and development are excellent for building and retaining community identity, and attracting tourists.

Tourism is an entire industry of its own and one of the primary trends. This trend has been taking place within several of these communities as a remedy for their economies, after the deterioration of waterway industries. This trend typically leads to a dependence on seasonal incomes for the residents of the community. Ultimately decreasing the vitality and stability of the local community. A prime example of a tourist based town is Mackinaw City Michigan. Their economy is based on the number of visitors the Mackinaw Island, St. Ignace, and Mackinaw City area attract every year.

Another trend that could happen as a result of tourism is an increase in the number of seasonal residents within a community and an increase in the local property values. Both of which result in a depletion of the local population and community stability. Examples of communities that have become dominated by seasonal incomes and second home residents are Harbor Springs.
background

and Petoskey. Through several return visits to this area, several trends have appeared in these towns. The beautifully maintained Victorian homes that line the street as you drive into Petoskey are only occupied or rented in the summers or on the weekends. The old town facades on the main street stores in Harbor Springs are purely for aesthetics and charm, they contain the high end retail shops and merchandise found in larger cities. While in a manner of speaking these towns are successful and wealthy, the towns usually lack the group pride, trust, and familiarity other more economically and socially diverse communities have.

- Community: historic and present

The important factor in these historic waterfront communities is the connection they had as a group to their landscape. If you examine the basic set up of a waterfront community(fig.5-1) it would be concentrated in a circle or half circle along the waterfront. This basic form stems from the logic of convenience, people wanted to be as close as possible to the things they needed. This tight, concentrated form enabled people to become familiar, comfortable and social with each other. These communities gave their citizens pride, familiarity, identity and contentment. Following the shift and “progression” of technology the connection was lost and the residents were able to spread out away from the waterfront, as shown in fig.5-1. Over time this began to divide people who were once neighbors, the community’s culture began to fade and the commercial

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area moved to the highway (as shown in fig. 5-2). This loss of connection to their landscape or waterfront brought disconnection, isolation and unfamiliarity into the community.

At the heart of these towns was the local community, providing for their needs were what these towns were designed to do. As designers we should learn from the success these historic waterfront towns had in providing for people, encouraging culture and establishing identity. Through researching for this study an article, titled Landscape Architecture as Art: Carl Theodore Soreneson. A Humanist, provided a theory on designing for human needs. It was this theory that became the basic idea behind the conceptual phase. Sorensen was a Dutch landscape architect who specialized in park design. Through his design career he developed and used a theory based on the needs of children in daily and development activities. He believed there was three basic things children needed in their lives, “a beach”, “a meadow”, and “a forest”. They needed “the beach” to “play in”, a space in interact, engage and actively learn and socialize. “A meadow” to “run in” a place to feel free to make their own decisions, and “the forest” to “hide in”, escape, or relax in. This theory contains similarities to the stages of development and the types of needs all humans need.

- **Status of Whitchall**

  The city of Whitchall has retained an advantage over some of the other towns discussed earlier,
background

they have been able to offer, maintain and produce a stable economy for their residents. They are not reliant on a yearly quota of tourist for their incomes, nor have they turned people out of the town to make room for summer or vacation homes.

Through studying and analyzing the land uses and activities within the city the northwest corner of Whitehall has a significant amount of activity, and variety in land use and history, which made it an ideal site to focus these revitalization efforts on. There are several amenities that exist and collide at this corner of the city. The existing commercial district, highway corridor, and marina/park all meet and generate activity. With the addition of the Rails-to-Trails through all these areas the amount and variety of activities taking place within this region will provide a type of energy and livelihood that will aid in the reconnection of this community to their landscape.

Rails-to-Trails

Rails-to-Trails is the process of turning abandoned rail corridors into trail systems for recreational use. They are constructed by local, state, and federal agencies with the help of non-profit organizations. The Rail-to-Trail that the State of Michigan is extending through the city of Whitehall and the site is the Hart-Montague Trail State Park. This trail has been extremely popular with people all along the western Michigan area, and will provide the city and site with people constantly during the season.
Introduction

Site Context

The town of Whitehall, Michigan is located along both the White River and White Lake. White Lake is a naturally occurring harbor on the eastern shore of Lake Michigan. It measures approximately seven miles long and one mile across. A deep channel connects White Lake to Lake Michigan and serves as a refuge for smaller boats off Lake Michigan. The town limits encompass 3.5 square miles and a population of 3,027.

The region of White Lake and the City of Whitehall were chosen both for their attributes and faults. This region has many of the historical characteristics of the Great Lakes region and a fairly large current community. Their existing town plan appears to have followed some of the trends and movements away from the waterfront. Also this city has done something that very few have managed, remain economically strong without losing the local community to seasonal housing and residents.

The specific site within the city of Whitehall is the northwest corner. It includes approximately 6000 linear feet of shoreline, most of which lies on White Lake the rest is part of the wetland region White River. This section of Whitehall was chosen for the opportunities it provided including proximity to the commercial area, amount of public land, and the states decision for an existing Rails-to-Trails system to be extended through the town.

revitalizing the waterfront for community
**project requirements**

- **Purpose**
  This study will represent an alternative approach for communities along the Great Lakes to reconnect and develop their waterfronts and communities connections.

- **Goals**
  To strengthen the community and local identity of Whitehall they need to reestablish the connection to their landscape. To sufficiently resolve this design problem this site must be examined from a social, spatial, and ecological position.

  **Socially**
  - study the heritage and history of these past communities and reinstate some of these attributes to improve the existing community and identity.
  - improve the emotional and physical health.
  - provide various spaces for social gathering.

  **Spatially**
  - reconnect the downtown and community to the waterfront both physically and functionally.
  - revitalize the importance of the waterfront.
  - respond to the energy that will result from the addition of the rail to trail.

  **Ecologically**
  - provide recommendations for ecologically aware design practices and techniques to improve environmental health.
Project Requirements

- Client Description

The client is the City of Whitehall, its local community and general public. The goal of this study is to redesign the waterfront area for the social and economic benefit of the local community. There will be two primary user groups to consider in the redevelopment of this area: the local public or community and the general or outside public. Each of these user groups will require different considerations within the site. While both groups will be considered for this study to accomplish its goals, the local public or communities' needs will rank slightly higher than the general or outside public.

- Assumptions

For this study, the primary concern was resolving issues, concerns, as well as the quality of ideas and design. While attempts were made to observe and regulate property lines, existing structures, and overall cost, there was no limit placed on the design. It was assumed that the city and community would together for any rezoning or right-of-ways, and funds could be raised or grants obtained to fund the project possibly in phases.
Inventory & Analysis

By identifying and studying the current land uses within the City of Whitehall some of the current needs and activities can be seen. For example the commercial area within the city limits appears to be moving toward and concentrated along highway 31. This shifts removes economic activity from the historic commercial district and the waterfront area.

It is also important to note that the primary commercial area and city center is concentrated to the north, thereby separating or disconnecting itself from a large portion of Whitehall. This new Rail-to-Trail could be used as link or connection within the City. This map also shows the small amount of public land along the shore and within the City limits. This small amount of park and open space could be expanded or enhanced by the linear connection of each one to the system.

As discussed earlier the performing of this inventory aided in the decision to focus on the northwestern corner of Whitehall. The concentration and variety of different land uses combined with the activity from business 31 and the proposed Rail-to-Trail made this area a prime location for a community development.
Inventory & Analysis

The following images guide you around the northwest corner of Whitehall. Beginning with the four lane bridge along business 31 that enters Whitehall at Covell Park and cuts through the site. This low bridge prohibits access into the wetland region for large boats.

Next to it in the causeway is the abandoned rail bridge that will become part of the new Rail-to-Trail system. This trail currently sits up higher on a mound compared to the rest of Covell Park.

Following the rail line next to the wetland we can get a wonderful view of this rich wildlife and nature area. Current attempts at developing amenities along the wetland exist at Lions park.

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Inventory & Analysis

Just off the rail line and next to Lions park sits this caboose. While it is extremely well kept it remains somewhat hidden from the public at the bottom of a hill in a park few seem to visit.

Looking down the hill from the commercial area you can see Lions Park and the wetland. The system of docks and stairs that exists receives little use, possibly possibility from the lack of visual or physical connection to their rest of the area.

From the same spot looking toward the downtown you can see the relationship Lions Park has with the commercial; it sits at the end of a dead end street down a steep hill with little visual cues or even signage.

The downtown area shown here is has been relatively kept up in the traditional style of “main streets”. Some restoration of store front and maintenance are needed, but over all the character is not lost. With the exception of a new building that has been placed at the entrance of the commercial area, the stores have the traditional two-story main street façade.
Looking east into the commercial this view shows the large bend business 31 takes into town. At this point the road is four lanes wide, it does not narrow to two lanes for a couple of blocks. This causes the public to speed into and through half the town.

On the opposite side of business 31 there is a shoreline park with a trail, benches and lighting. While there is a good view of the Lake there is little opportunity to interact or approach the water with the rip rap edges.

Next to this park is the municipal marina. While the marina itself functions fine it does little to relate or attract the public to this park area or the marina.
Inventory & Analysis

From studying the circulation of this portion of Whitehall several concerns arose. The existence of business 31 through the site and commercial area is beneficial for the opportunity it has to bring people to the area, but the manner in which it approaches and enters the site and commercial district is not beneficial to these shops or the town in general. This vast road with relatively high speeds does not promote walking within the commercial area or toward the waterfront from there.

Aside from the characteristics of business 31 the other concern is with the amount and location of the one-way roads within the site. The section of road within Lions Park seems extremely unnecessary. It remains closed during the winter for safety, and the only thing located on it is a parking lot for the park that does not get used. The one-way streets within Goodrich Park access a few existing structures and the marina, but this land may prove to more beneficial as part of the park.

- Proposed Rail-to-Trail

As discussed earlier the extension of this Rail-to-Trail through the city and site will be extremely beneficial to Whitehall both socially and economically. This recreation corridor could possibly be connected and accessed by neighborhoods and residents throughout the Whitehall as an alternative transportation method within Whitehall and other local towns. It will improve Whitehall economically by bringing people into the town and into the commercial district.

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The primary opportunities within this site include the amount and variety of activities that exist in this small area. The addition of this recreational corridor to the existing park and commercial settings will provide opportunities for all guests of the site.

The site includes the largest amount of public shoreline in the city limits of Whitehall and should be designed for the community to take full advantage of it.

The current circulation patterns begin to relate strong site lines to both waterfronts and this idea could and should be developed upon within the commercial and park area.
Current conflicts within this site are primarily related to the current traffic routes and how they impact the site itself as well as the character and experience the town offers its community and visitors. Some of primary concerns stem from business 31, the four lane traffic and current speed divide the site and discourage pedestrian or recreational movement.

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## Concepts

As stated earlier, the historic waterfront communities responded to the needs and wants of the citizens. The community had a direct relationship or connection to their landscape both economically and socially. Much of their livelihood came from the activities that occurred at the waterfront and within the town. This direct relationship developed the culture and identity that we associate with this time and place today. These communities gave their citizens identity, familiarity, and contentment.

To accomplish the goal for the community needs, it became necessary to decide and analyze these needs within the realm of design. The feeling of identity, familiarity, and contentment became derived as the key social needs of community. Each social need related directly to and described spatial needs for the community. The table to the left illustrates the transition from social to spatial needs.

To move to the step of a graphic concept these spaces had to begin to relate and interact with each other. The definition of the words used in each area began to characterize what the area was about or would include. They developed the relationship to the left based on the amount of physical land required. Spaces designed for large social events require less land per person than spaces designed for individual activities for the same amount of people.

### Social Needs

<table>
<thead>
<tr>
<th>Social Need</th>
<th>Spatial Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>Formal Social Icon</td>
</tr>
<tr>
<td>Familiarity</td>
<td>Non-Programmatic Area</td>
</tr>
<tr>
<td>Contentment</td>
<td>Informal Secluded Spaces</td>
</tr>
</tbody>
</table>

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Greater quantity is needed for $x$ number of individual activity areas.

A smaller quantity of space is needed for $x$ number of individuals in a social activity.
Concepts

There were numerous similarities between the social and spatial needs of Whitehall and the article about the ideas of Sorenson. His theory of the basic needs of children from their environment could also be applied to the basic needs of communities from their environments. All human needs are relatively similar, they may be carried out differently depending on age, but children and adult both require similar needs. These social and spatial needs fit the character of Sorensens representative landscape spaces.

The need for identity within a community is key to instilling pride and associations. Identity usually comes from common activities or practices within the area. Since it is common among the group it becomes social for them. For Sorenson "the beach" was a place to interact and engage in activities among or with others. This type of interaction is important for communities, it promotes and provides spaces for interaction with neighbors and friends. Listed are some of the key words, characteristics and spaces that describe this space.

Possible elements:
fountains, plazas, markets, parks, gateway, bridges

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- notes and diagrams -

**Concepts**

<table>
<thead>
<tr>
<th>Social needs</th>
<th>Spatial needs</th>
<th>Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>identity</td>
<td>formal social icon</td>
<td>“a beach”</td>
</tr>
<tr>
<td>familiarity</td>
<td>transition/non-program</td>
<td>“a meadow”</td>
</tr>
<tr>
<td>contentment</td>
<td>informal/secluded</td>
<td>“a forest”</td>
</tr>
</tbody>
</table>

*Familiarity comes from exposure or knowledge of someone or something from several different experiences or settings. For the citizens of Whitehall to become more familiar with their neighbors they must have constant opportunities to bump into or leisurely meet them. Formal social setting can be intimidating spaces for people to meet one another and this transition area is necessary to promote casual contact and activities.*

*Sorenson’s theory of “the meadow” was about providing a space for running and jumping, or a variety of possibilities. This was a transition space between the social play and individual escape.*

**Possible elements:**
- open fields, trail systems, lookout points, visual connections, hills, docks, boardwalks
- revitalizing the waterfront for community

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**Concepts**

All humans need space, and places to escape from life or stress. For this design to provide for the community's needs it must provide for the individuals' needs as well. This community in particular is extremely involved in fishing, which is typically an individual activity.

Sorenson's idea of "the forest" encouraged escape and imagination as well as individualism within a child. Encouraging them to be comfortable with themselves, most adults still need this escape but more to reflect and remind themselves who they are and what is important.

**Possible elements:**
docks, trails, boardwalks, rest nodes, nature centers, educational nodes, fishing, boating, wildlife sanctuaries, bird watch

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Concepts

Using the relationship diagram two concepts were developed, one for each user group.

The first concept dealt with the local public or community. This attempted to arrange the social spaces where they would encourage or lead the community to the waterfront, by using sight lines and existing activity areas.

Concept two was concerned with the tourists and visitors from both the proposed Rail-to-Trail and business 31. To encourage the trail users, and vehicle traffic to participate within the commercial district and park system's social spaces would be located directly beside these transportation corridors.

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The third concept attempted to combine concepts one and two to provide for both users and encourage social and economic growth. This concept attempted to utilize waterfront space and sight lines, as well as, encourage visitors from the corridor area to participate in these spaces.

The schematic shows how this might begin to look on the landscape with some basic features such as parking and trails.
As mentioned earlier in the study, the State of Michigan has already begun the process of extending the Hart-Montague Trail through Whitehall. This is currently a 21-mile trail that is extremely popular within the regions. The addition of this trail will provide some of the energy and activity mentioned for the revitalization of this landscape and community. To encourage the incorporation of this trail in this revitalization design, as well as, other areas within the city a conceptual character plan has been provided.

The first sketch looks at a renovation of the rail bridge with a central trail land and pedestrian walks on either side for fishing.

Sketch number two is approaching the tunnel that takes the trail under business 31. Today this area is overgrown and somewhat intimidating next to the concrete wall.
To the left is a renovated bridge that currently exists along Lake Street. This old bridge adds a great deal of character to this part of the waterfront, especially for those driving in this area, since there are few spaces to view the water.

Just past this bridge is an abandoned store or warehouse. Directly behind and above it is the rail line. This structure may be able to be retrofitted for a store or shop along the trail system.

In between some residential areas the rail line moves within a ditch with the neighborhoods on high slopes above. The pedestrian bridge shown is an existing feature that connects these neighbors.

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~notes and diagrams~

Master Plan

Pedestrian/Trail Bridge
Fishing Dock
Business 31
Boardwalk
Fishing Overlooks
Marker
Boat Launch
Municipal Marina
Pier
Amphitheater
Central Circle/promenade
Bike Path
Rail to Trail
Boardwalk
Bike Path
Abstract Timeline Walk Historic Caboose

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Master Plan: Recreational Circulation

This trail stop was located within the commercial district of Whitehall to encourage establish Whitehall as a destination along the trail.

This stop includes a shelter, bike racks, informational and educational signage, benches and restrooms. The design of this area is based on abstracted nautical elements that recall boats ranging in size from canoes to steam engines.
Master Plan: Vehicular Circulation

There are two primary vehicular entrances for this site and the commercial area. The entrance from the north, along Business 31, is represented as a gateway into Whitehall with vertical sculptures reminiscent of ship masts. The eastern entrance, also along Business 31, is developed as a sight line toward the waterfront using several vertical elements to carry the visitor into the site.

Section A: Existing Commercial Area

Section B: New two-way road within commercial area

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Master Plan: Central Circle

The sight line which travels along the road and through the commercial area becomes a promenade or circle drive as it enters the site. This new two-way drive enabled the removal of unnecessary one-way roads within the site. This design also provides the downtown with a formal end or plaza space that could be used for festivals or parades within the city.

Central gazebo modeled after a historic lighthouse

The lighthouse gazebo stands 20 feet high with a weather station on top. This vertical element is centered along the sight line established by the commercial area.

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Master Plan: Amphitheater/ Plaza

In the center of Goodrich Park and along the established sight line is the amphitheater/plaza area. The design for this social space was based on a nautical heritage. The central seating mound is a scale replica of the White Lake inlet from Lake Michigan. The stage, seating areas and surrounding retaining walls represent a sextant and a top a nautical grid map.

The placement of the grass mound and terraced areas allow the plaza to accommodate various sizes of audiences or groups.
Master Plan: Pier

The pier extends the sight line into the water. It allows for greater public enjoyment of the waterfront area. By connecting the municipal marina and the public pier it encourages a variety of activities and interaction within the community.
Master Plan: Goodrich Park

The overall plan for Goodrich Park retained the type of amenities that previously existed and expanded on new activities or amenities aimed at the community’s needs. Amenities such as the amphitheater and market were added to provide for a continuous and varied use of this site.

Section A: Fishing docks along Shoreline

Section B: Typical shoreline and Boardwalk

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Master Plan: Covell Park

This peninsula is designed for relaxation and recreation. The entrance of the White River and the Rail line will encompass the majority of social spaces within the site. Locating a naturalistic park setting at the entrance of this community will enhance the general character and appearance to its visitors.
Master Plan: Lions Park

This design for Lions Park, to the north of the commercial area, took advantage of surrounding land and existing views. The road that ran through the site was removed and parking lots were placed at either end for users of this park and the chamber of commerce building. This park should be admired for its dramatic topographic views. The vast hill was left open for winter and summer enjoyment.

Using vertical elements and steps a sight line was enhanced by a walkway that leads out into the wetland. The walkway is an abstract timeline of Great Lakes development and industrial history. The north begins with Native Americans and the south leads to present day. To encourage use and visibility of the caboose it has been relocated into the center of walkway within the rail section.

Abstract linear representation of developmental history in Whitehall

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A community's social needs can be met in a variety of ways and spaces, ranging from fountains to amphitheaters. The point of these areas is to bring people together and engage socially. These spaces represent the various levels of activities and spaces within this design. Each area adds to the overall identity of this community.
As a meadow allows for individual interpretation and decision making. This spaces consisting paths, field, and and overlooks allows the individual to determine the use. This group of images show the idea of several non-programmatic spaces for recreation and leisure activities within the site.
contentment ○ informal/secluded "a forest"

The informal areas are located along the shoreline and heavily vegetated to give the impression of being secluded from the rest of the space, like a person would feel in a forest. Their location and design offer the best conditions for peaceful reflection by the water or fishing in reeds.
Ecological Issues

Part of improving the overall community and their relationship to the water front includes improving waterfront itself. For communities located along the waterfront special care and consideration should be taken when developing or constructing anything within the flood plain.

By addressing the existing regional issues of erosion and drainage within this new master plan these recommendations can illustrate and demonstrate to the community and other waterfront towns the functionality and necessity of these details along waterfront properties.

The wetland basins, located around parking and pavement, were designed as retention areas in times of rain or snow drainage, they would not contain standing water, only filter it slowly. This type of system would eliminate the need for installing drainage. These basins will also slow water draining into White Lake, reducing the amount of erosion.

The erosion techniques shown would be used in the construction of the Rail-to-Trail and along shorelines. These illustrated use a combination of techniques to ensure success. All methods use plant and natural materials to stabilize the soil.

Lakeshore erosion control using a combination of coir fascine, and wetland plants

www.ianr.unl.edu/pubs/Soil/g1307.htm

revitalizing the waterfront for community
Ecological Issues

By using a combination of coir fascine, wetland plants, prevegetated mat and live plants on the shoreline areas it will improve the overall success of these bioengineering techniques.

Coir Fascines

Coir fascines are wattles constructed out of fibrous coconut husk. They line the shore and accumulate sediment providing a space for plants to root and stabilize the shore.

Prevegetated mats contain live plants on an organic material. They are most commonly constructed with coir material and wetland plants. They range in thickness and size, some of the thicker mats require heavy machinery to move and set them in place.

Contour wattling is used to shorten steep slopes into shorter more gradual slopes. It involves staking, trenching and placing wattles, bundles of sticks or fascines, along the contour of the slope.

www.ianr.unl.edu/pubs/Soil/g1307.htm

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Conclusion

While technology will continue to evolve it is increasingly important for us as a society and as designers to make a conscious effort to promote community ideals, culture and identity, as well as, a connection between a local community and its landscape.

This design study sought to restore vitality and community interest into a forgotten amenity. By studying and applying knowledge of both the social and physical needs of the local community the intent was to restore the energy, identity and activity that was there historically.

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revitalizing the waterfront for community
Master Plan

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Revitalizing the Waterfront

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