

An aerial photograph of a city street with a green remediation strip. The strip is a long, narrow, rectangular area of green grass and plants, running parallel to the street. The street is paved with asphalt and has several cars parked along the side. The surrounding area is a mix of green grass and dark asphalt. The strip is located in the middle of the street, between the sidewalk and the road.

# Remediation in Urban Ecology

A close-up photograph of green grass, showing individual blades and the texture of the lawn. The grass is vibrant green and appears to be growing in a well-maintained area.

How Remediative Park Design in Montgomery, Al.  
can Influence its Future Development

Justin Pasley  
Thesis 2011





# Remediation in Urban Ecology

How Remediative Park Design in Montgomery, Al.  
can influence its Future Development



Figure. 2

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May 2011

# Dedications

This book is dedicated to my Mother and Father who have always believed in me.



# Acknowledgements

I am very grateful to all the people who supported me in this research project along the way. I would like to give special thanks to Rod Barnett, Charlene Lebleu, and Jacqueline Margetts for all their critiques and support throughout my time spent in the MLA program.

I would like to thank my closest family and friends who have been there for me through this emotional roller coaster we call life. Without all your help I would not be where I am today. With your motivation and encouragement I have now become the first person in my family to graduate from college.

# Table of Contents

Title Page	3
Dedications	4
Acknowledgements	5
List of Illustrations	7
Abstract	8
Introduction	9
Definition	10
Project Goals	11
Chapter 1 History and Context	13
Chapter 2 Methodology	29
Chapter 3 Theoretical Framework\Driving Force	37
Chapter 4 Design Process	41
Chapter 5 Final Design	51
Conclusion	74



# List of Illustrations

Figure. 1-2	Created by author
Figure. 3-4	Created by author and base map from Bing maps
Figure. 6-9	Images drawn by author
Figure. 10-12	Created by author and base map from University of Alabama Library
Figure. 13-33	Created by author
Figure. 34-39	Pictures taken by author
Figure. 40-43	Created by author
Figure. 44	Image drawn by author
Figure. 45-46	Created by author and base maps from Bing maps
Figure. 47	Image drawn by author
Figure. 48	Created by author and base maps from Bing maps
Figure. 49-74	Created by author
Figure. 75	Created by author and images from Bing maps
Figure. 76-91	Created by author

# Abstract

This design research project explores the possibility of connection between the riverfront and the downtown of Montgomery, Alabama by means of a remediative park system that encourages movement through the city. Currently the site chosen for this investigation does not acknowledge any remediative factors, movement from the downtown to the riverfront, or connectivity to its surroundings. Establishing connections between the downtown and riverfront could make an immediate impact on the city by providing many new infrastructure services. For example: walking systems, year around entertainment, visual and physical connections to surrounding neighborhoods, and educating citizens about remediation which can give them an opportunity to observe remediation processes which may then encourage them to make better decisions not only on their own behalf but also the city in general. After all, a site can make a city, but a city can also make a site. The project objective is a design that improves the city's image and wellbeing by drawing on and extending the image of the city. One cannot exist without the other and together they can form something special.



This thesis examines how a park with remediative technologies can influence development in Montgomery, Alabama. The downtown and riverfront area in Montgomery is suffering from sprawl because of the relocating of businesses to the outskirts of the city to be closer to the interstate highway system. Many attempts have been made to revamp these areas, but the current infrastructure is not enough to be as successful as it could be.

The riverfront has a newly built Riverwalk Stadium (for the Montgomery Biscuits professional baseball team), Riverfront Park, and Overlook Park which are meant to help rejuvenate the city by bring in visitors and giving the people of Montgomery something to enjoy. The main problem is they do not succeed in doing this. The parks are empty unless there is a festival or concert in them and the stadium is only used for baseball games. These areas could provide something more for the city if the areas surrounding them were being developed.

There are areas in the downtown and riverfront which are visitor attractions that do benefit the city like the following: Old Alabama Town, State Capital, Hank Williams Museum, Civil Rights Memorial, and Rosa Parks Museum. The problem with these sites is the lack of connection between them. There is nothing links them together that allows them to function as whole for the city of Montgomery. With the revitalization of the riverfront area, by means of redevelopment, the people of Montgomery and its visitors can experience the city in a different way. There will not be just nodes of attractions spread out over the riverfront with no connection between them. With new development like shops, cafes, bakeries, and other forms of new development the riverfront can have a connection to its surroundings which it has never seen before.

# Definition:

(Remedi)-(ation)

Remedy

To remove, counteract, or rectify

ation

indicating an action, process, state, condition, or result

the removal of contaminants from environmental media such as soil, groundwater, sediment, or surface water for the protection of human health and the environment.

to correct or improve a deficiency or problem

When a site is suspected of being contaminated there is a need to study the contamination. Usually the assessment begins with a Phase I Site Assessment. The historical use of the site will determine the type and extent of sampling a chemical analysis to be conducted. It is not always possible to determine the contamination of a site from previous use alone as sometimes contaminated soil may be imported from another site. For example: a parking lot may have been constructed by using contaminated soil as fill material brought in from elsewhere. After tests have been performed and a site is considered contaminated, then a Phase II Site Assessment will be performed for a more detailed chemical analysis.

# Remediation, Montgomery + Public Space

Remediation in public spaces such as parks can educate and influence people to make rational decisions on their city's future development.

Montgomery is a very contaminated city with great potential to be a very clean, friendly, and vibrant place. Since it is our state capital, it can be a great model and inspiration to other cities in the state.

Public space can link different sites together so they do not feel as separated from each other. Sites linked by public space can be beneficial to one another by making them operate as a whole instead of separate entities.



# Chapter 1

## History and Context

Downtown Montgomery is located along the Alabama River which is about six miles downriver from the confluence of the Coosa and Tallapoosa Rivers. The downtown contains many state and local government buildings which include the Alabama State Capitol and the local government buildings. The downtown also includes Dexter Baptist Church, the First White House of the Confederacy, and Union Station. The train service shutdown in 1985, but today the Union Station is part of the Riverwalk park development, which includes an amphitheater, a riverboat dock, and Riverwalk Stadium. As little as three blocks away is Old Alabama Town which includes more than fifty restored buildings from the 19th century. The riverfront area also includes a large convention center which was built in 2007 to further encourage growth in the downtown area. The Riverwalk is part of a master plan to revamp the downtown area.

In 1886 Montgomery became the first city in the United States to have a city-wide electric street car system. This in turn causes the city to depopulate the downtown residential areas and move beyond the downtown. This was first sign of the never ending suburban movement in Montgomery. With the relocation of residents to the city outskirts the downtown seemed to be only occupied by industrial and commercial businesses.

# Location of Montgomery in Alabama

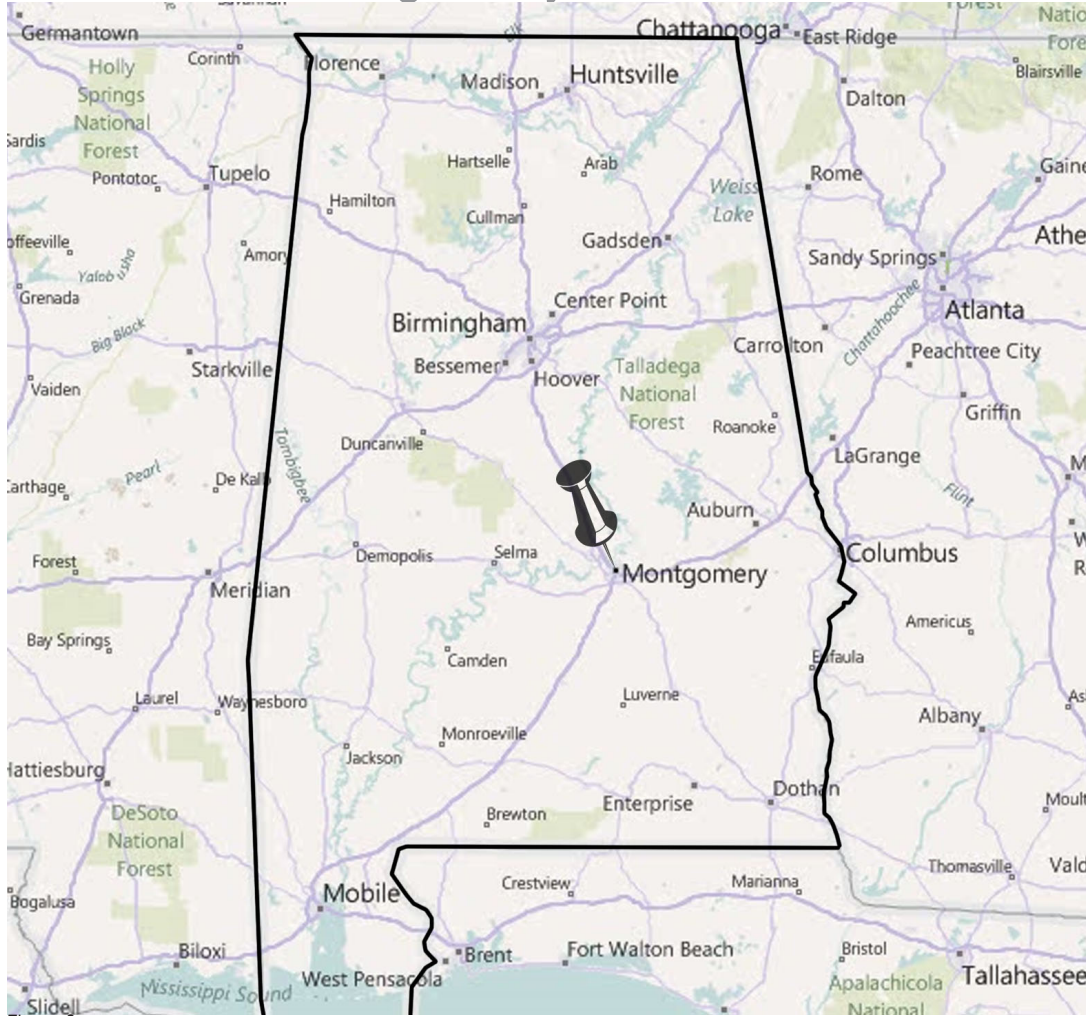


Figure. 3

Montgomery is the capital of Alabama, but is a city with a declining downtown and riverfront due to sprawl. It is the second most populous city and the fourth most metropolitan area in Alabama. The downtown is in major decline because of sprawl and the relocating of residents and businesses to the outskirts of the city to be closer to the interstate. The decay of the downtown has caught city official's attention who have come to the conclusion that something drastic needs to happen. Multiple downtown and city-wide master plans have been conducted. These have led the city to undertake many construction projects to improve the city's functionality and image. The city's master plan shows that there is an interest in developing the riverfront and connecting it to the downtown area. The riverfront has great potential to be a key attraction and at economic benefit for the city of Montgomery.



# Location of Site in Downtown Montgomery



Figure. 4

The construction of Riverfront Park and Riverwalk Stadium has already taken place within the past few years, but their success seems to be limited by their surroundings. Areas to the north and east sides of these properties has yet to be developed. These areas are either blacktop parking lots or overgrown abandoned sites that do not contribute to the city. The areas to the south of these two sites are the restaurant district and business district which have slowly been redeveloping thanks to the dedication of the city to improve them. Since the riverfront is beginning to be more recognized as a developable site, it is a perfect opportunity to propose a design for this area. This research project examines this site and explores ways that can remediate the area at the same time as providing an area near existing amenities that can help them grow and prosper.

# How Railroad Layout has Changed Over Time

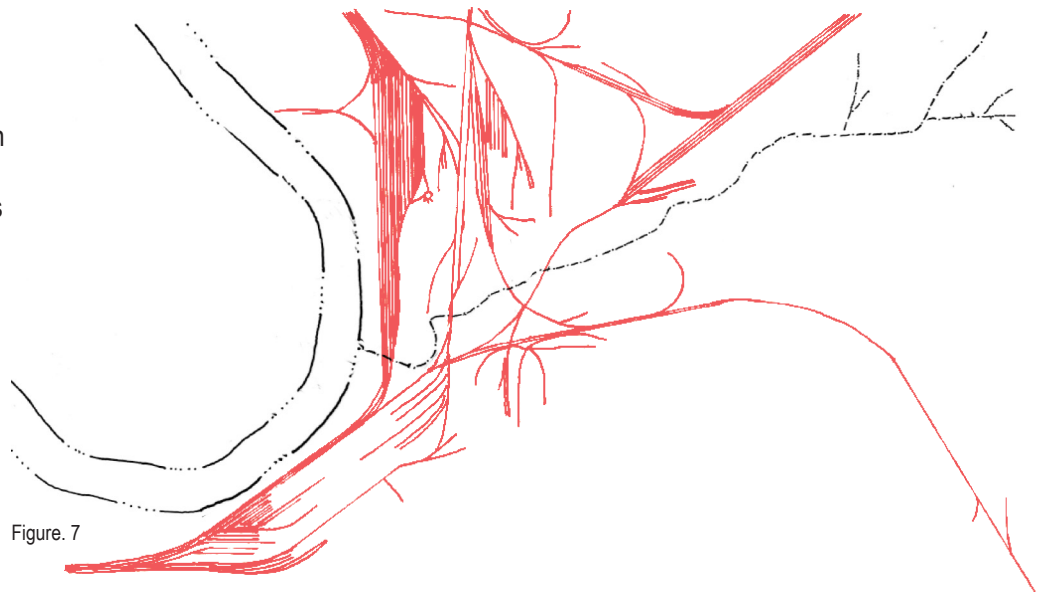
1887



Study of how the railroad layout along the riverfront has changed over time.

2006

Over the past century the downtown of Montgomery has changed drastically. Once the downtown was mostly residential with very little industry. Today, nevertheless, is a much different story.



# How Road Layout has Changed Over Time

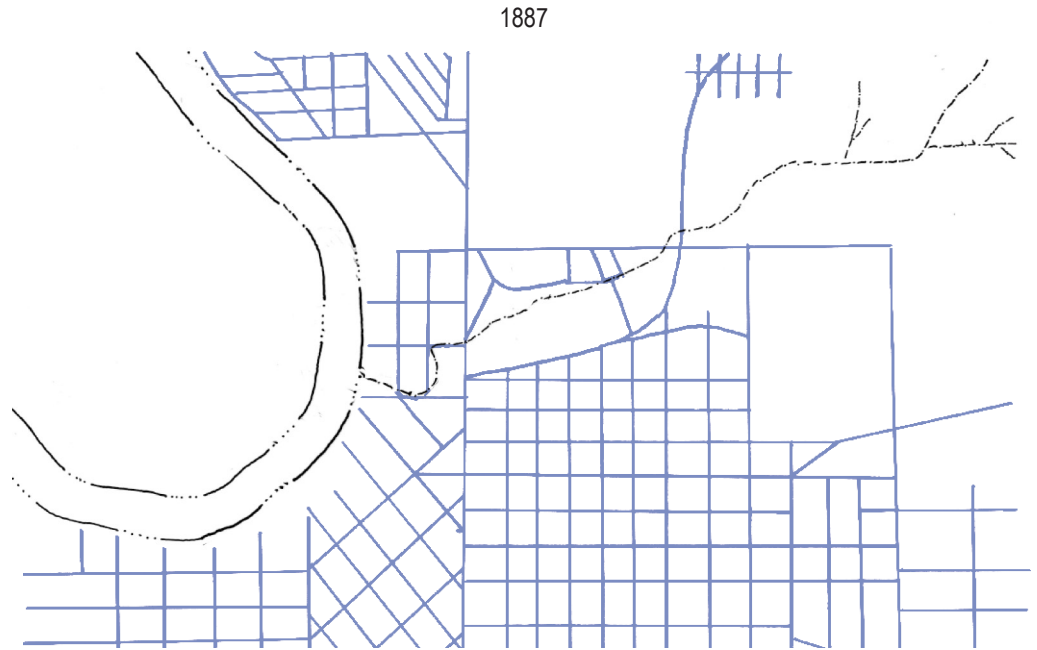
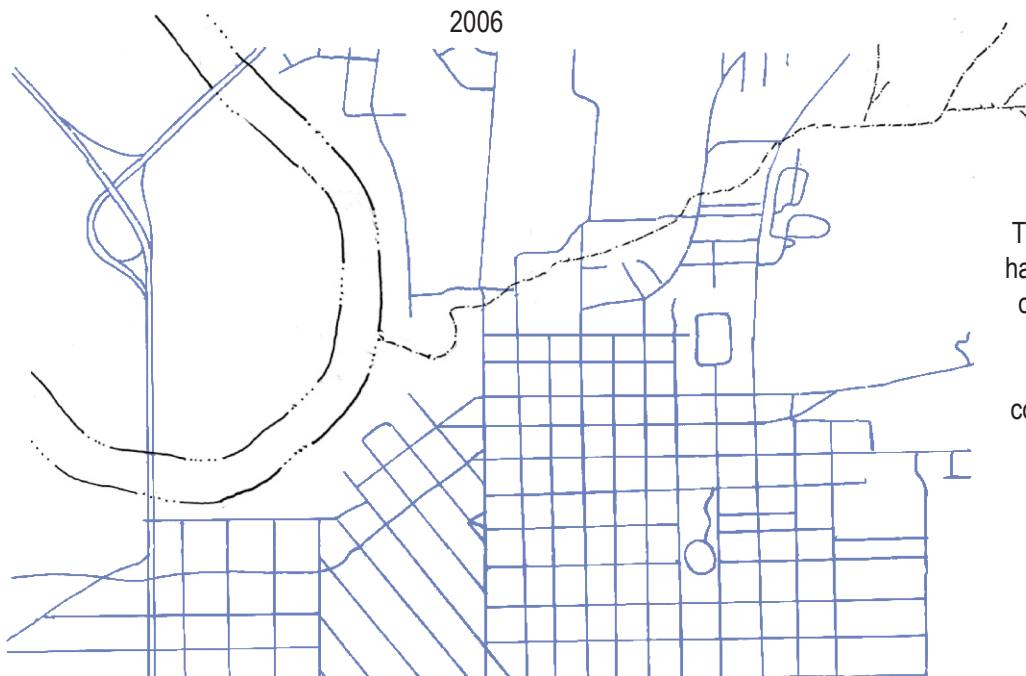


Figure. 8

Study of how the road layout along the riverfront has changed over time.



The residents in the downtown area have been driven out by industry and commercial businesses. This large growth in industry has led to the railroad and paved road to completely dominate the landscape.

Figure. 9



# Change Over Time

Montgomery has undergone much changed from the late 1800's to the present day.

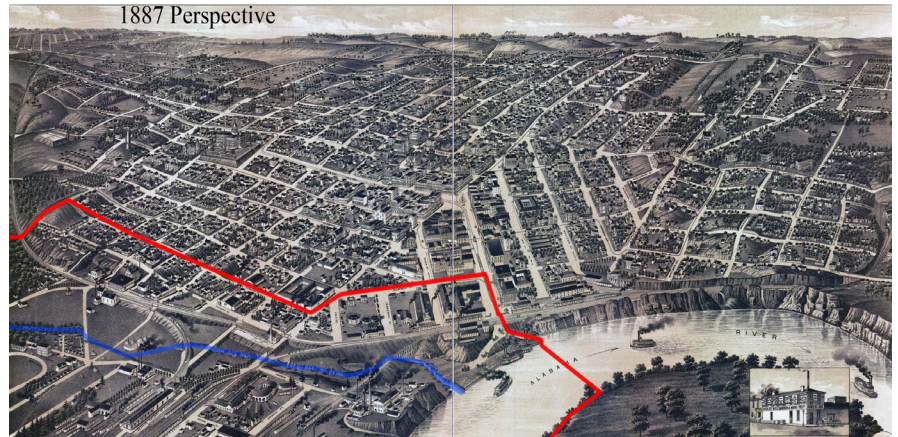


Figure. 10

Residential once made up most of the downtown.

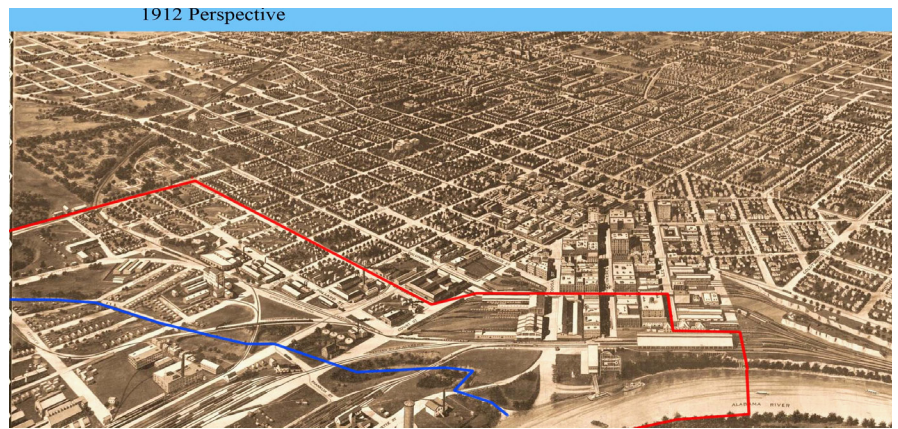


Figure. 11

Now industry and business has taken over the city and has driven the residential areas to the outskirts of the city.

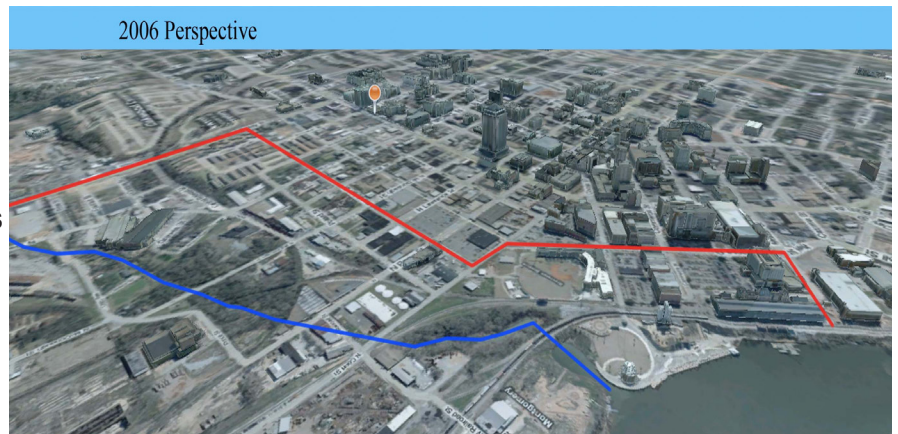


Figure. 12

# Hydrology

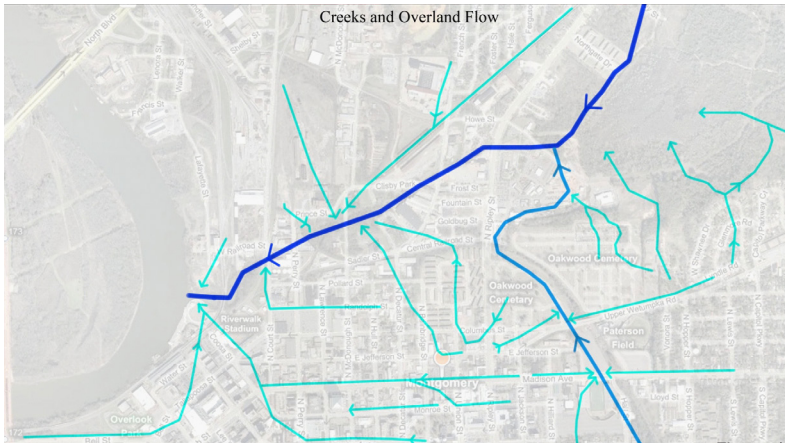


Figure. 13

Study of water flow to the Alabama River.

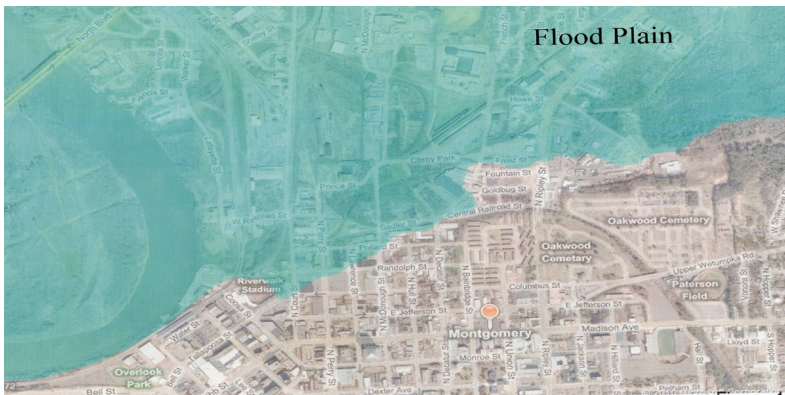


Figure. 14

Map of 100 year floodplain.

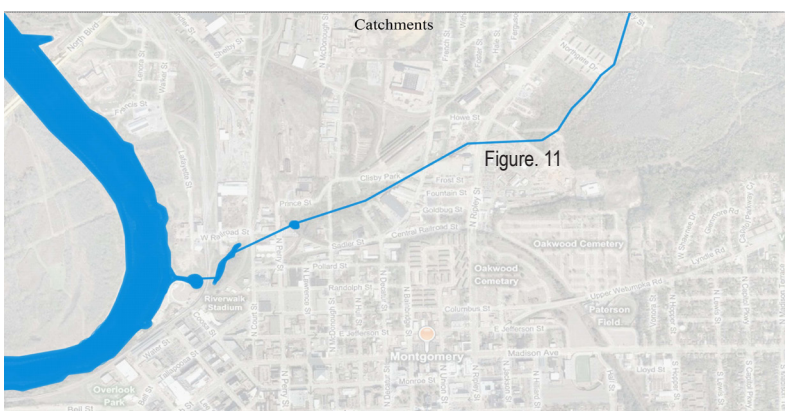


Figure. 15

Hydrology (Alabama River and Cypress Creek)



# Mapping

Map of the public green spaces

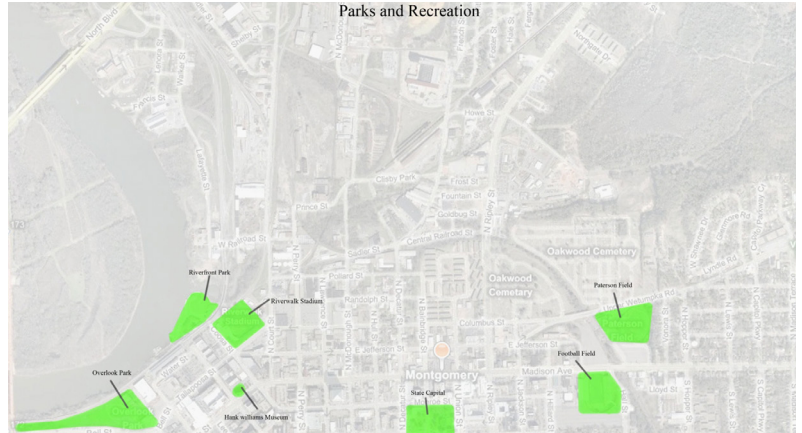


Figure. 16

Topography map (10' contours)

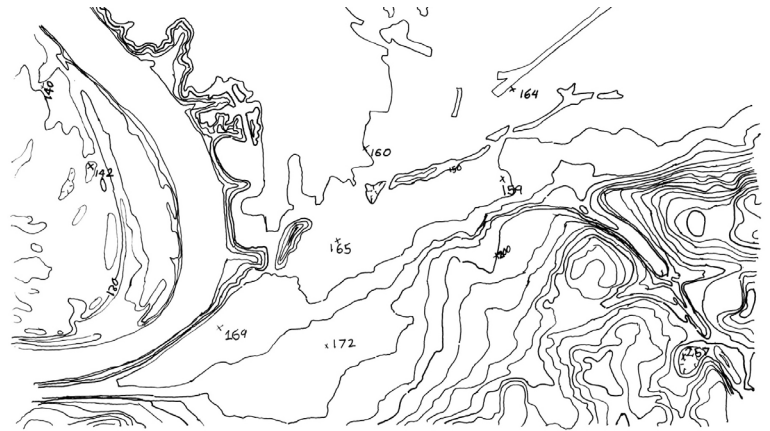


Figure. 17

Current vegetation map

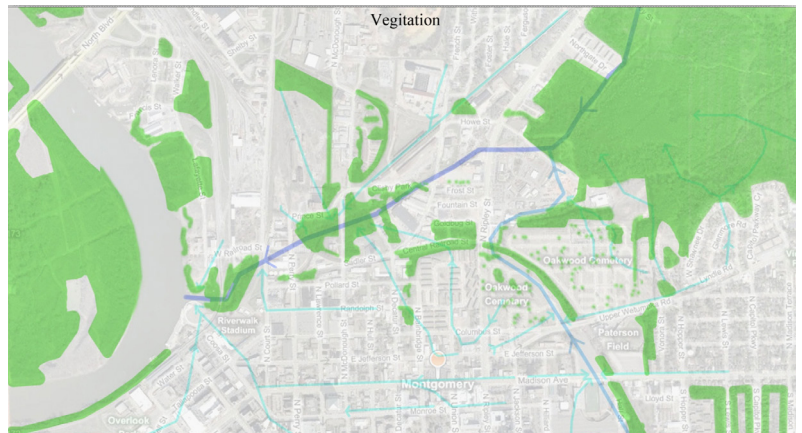


Figure. 18





Figure. 19

Map showing the building and parking lot foot prints layout in the flood plain.

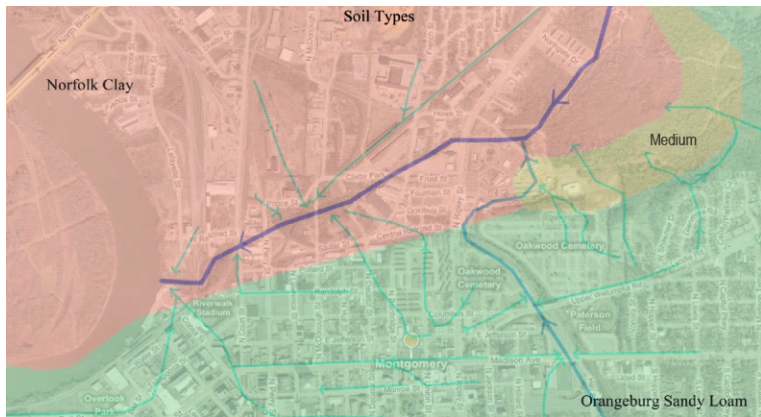


Figure. 20

Soils map overlaid on hydrology flow map

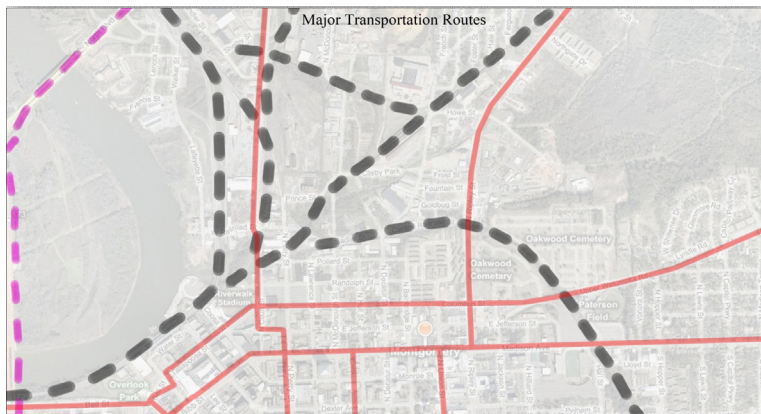


Figure. 21

Major transportation routes

# Contamination

The maps show contaminated sites and types of contamination.

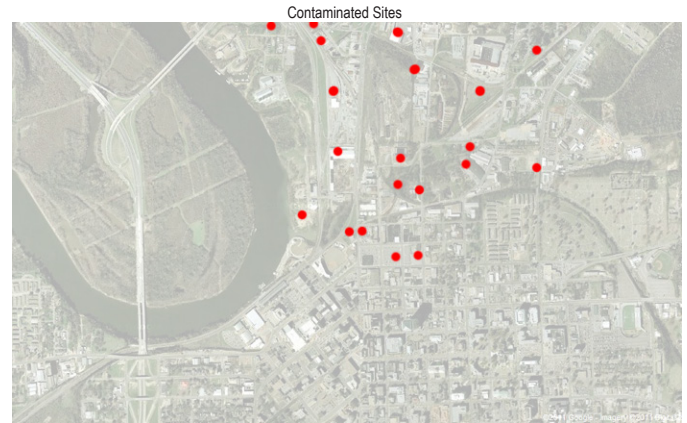


Figure. 22

Toxic Release Sites



Figure. 23

Air Emissions



Figure. 24

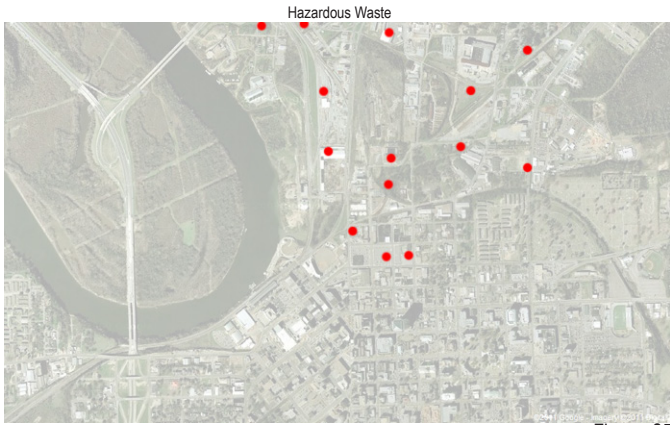


Figure. 25

Hazardous Waste

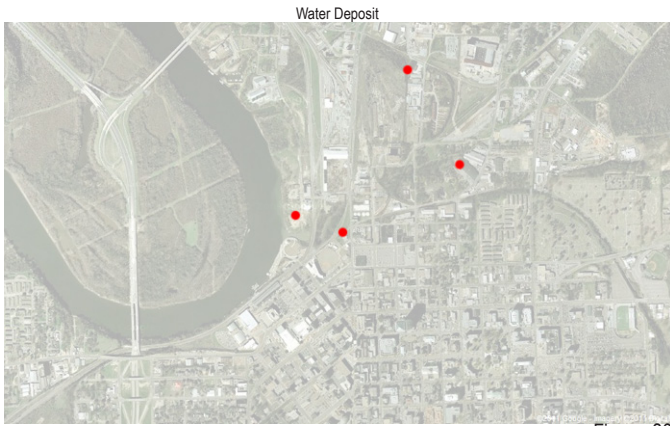


Figure. 26

Water Deposit



Figure. 27

Superfund Sites



# Mapping

Names of the Contaminated Sites

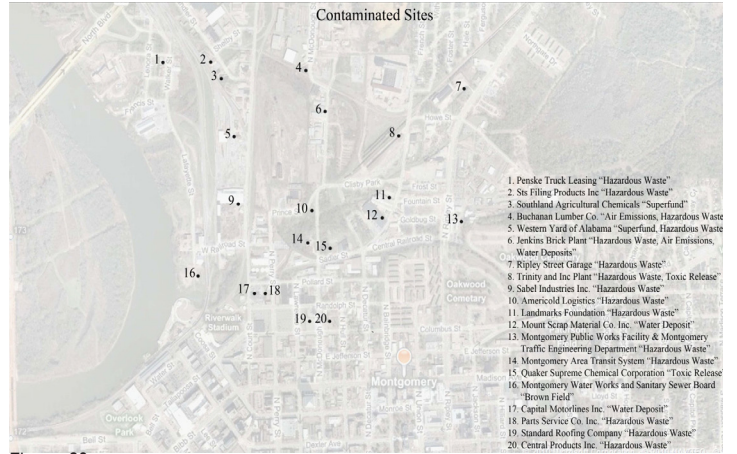


Figure. 28

Cypress Creek points of intersection with roads and rail

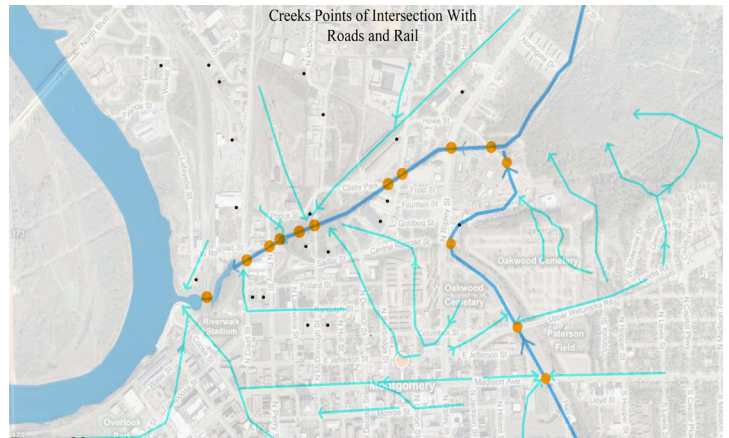


Figure. 29

Hydrology overlaid on soils map

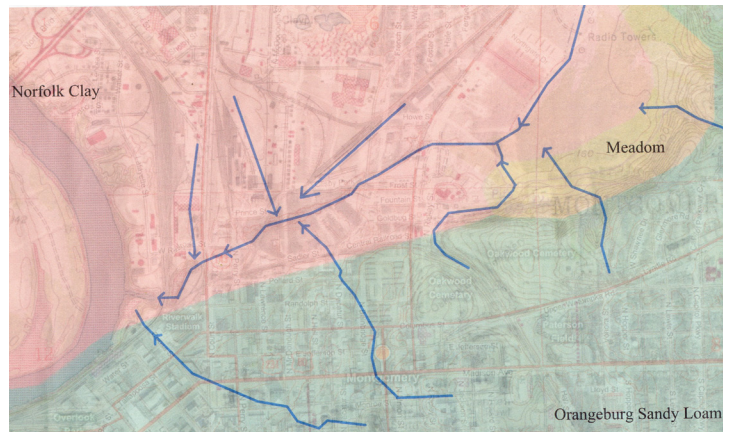


Figure. 30

# Potential Sites of Interest

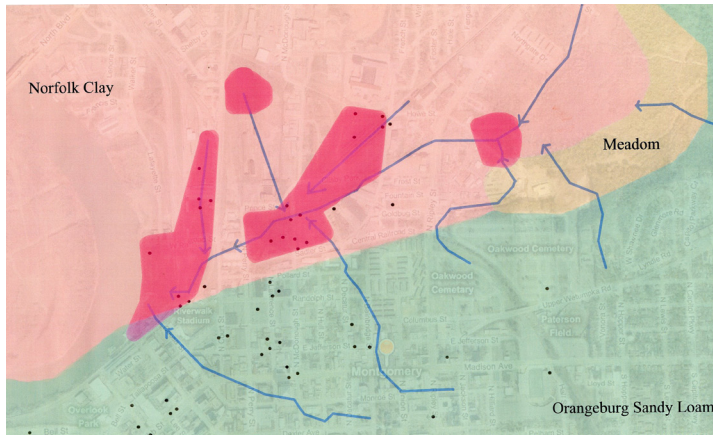


Figure. 31

Potential sites of interest (area with most potential of remediative cleanup) overlaid on contaminated sites and soil map

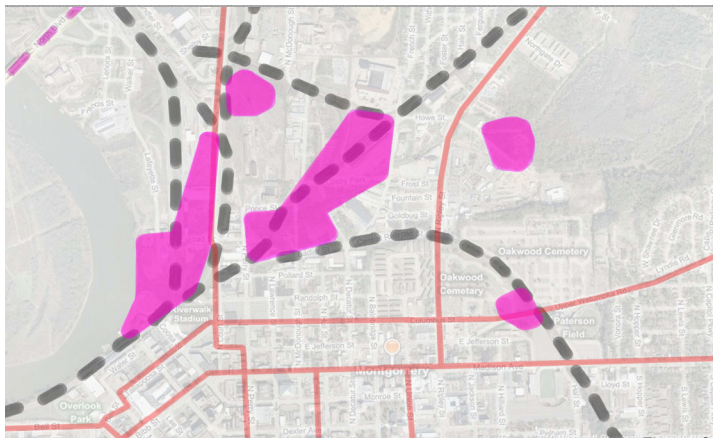


Figure. 32

Potential sites of interest overlaid on major transportation routes

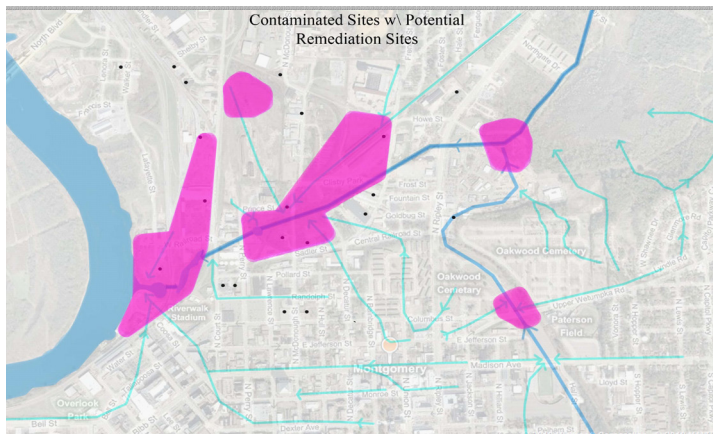


Figure. 33

Potential sites of interest overlaid on hydrology flow map



# Pictures of Contamination

The Alabama River has large amounts of trash floating by its banks and has some flowing with the current which will end up downstream at another location.

Cypress Creek



Figure. 35

The contamination is not only affecting the soil and water source, but is also affecting the local wildlife and the people of Montgomery.



Figure. 34

Alabama River

A close up study of Cypress Creek and the Alabama River was conducted to see how the local contaminated site has affected them. After just one site visit, one could come to the conclusion that the local water resources are contaminated. One cannot miss the foul smell lurking from the creek which can be smelled from over a hundred feet away.

Alabama River



Figure. 36





Trash in creek

Figure. 37

Trash buildup on overflow pipe which leads to Alabama River from Cypress Creek.

Trash in creek



Figure. 39

Site visits revealed trash buildup on banks of creek.

Trash in creek



Figure. 38

Close up study of contaminated Cypress Creek revealed thick dark colored water which is one of the many reasons for the foul odor lingering from the creek.



# Chapter 2

## Methodology

A mapping investigation revealed connections between contaminated sites, transportation systems, land use, and topography. Areas of concern were identified and a more detailed mapping process was conducted which will be revealed further in the research. The mapping explorations revealed details in contaminated sites, contamination flows, and walking distances for the riverfront.

Revitalizing the riverfront is one of the main priorities for the city of Montgomery. Many case studies revealed examples of how other cities have attempted to encourage development around their riverfront parks. Although many of them are not successful, some examples of good connections and development were uncovered. Developing Riverwalk Stadium into a more year-round attraction is important to the development of the riverfront. Case studies revealed examples of connections and development around various stadiums around the country.

Site visits revealed the lack of connection of Riverfront Park, Riverwalk Stadium, and other existing amenities to their surroundings. When one is experiencing these various sites, they feel a sense of emptiness and loneliness. This can be fixed by a public space that encourages development to its surroundings while also fixing contamination problems at the same time. After case studies, site visits, and various mapping exercises were conducted, design explorations were timely. By exploring different ways to achieve connections to encourage development, designs will start to unfold.

# Mapping of Riverfont

Contaminated sites overlaid on hydrology map.



Figure. 40

Contamination flow of the riverfront area.

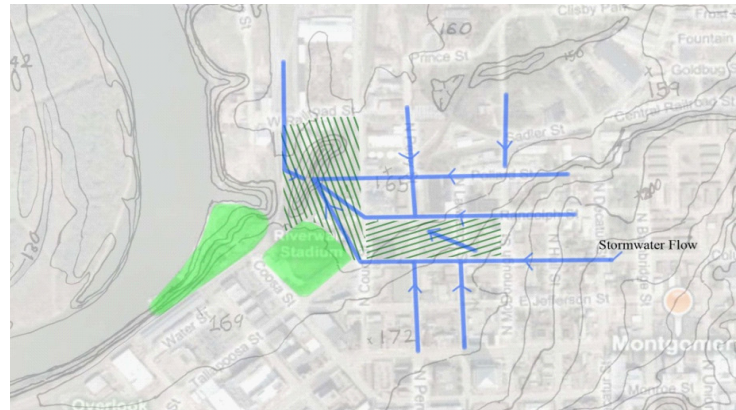


Figure. 41

Ten minute walking distance of riverfront.

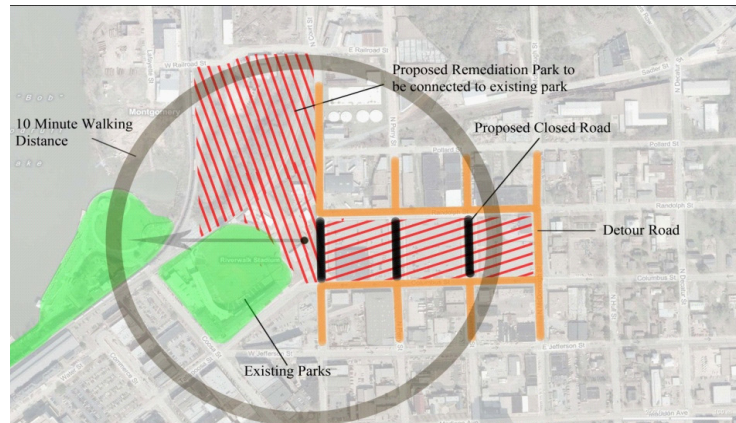


Figure. 42



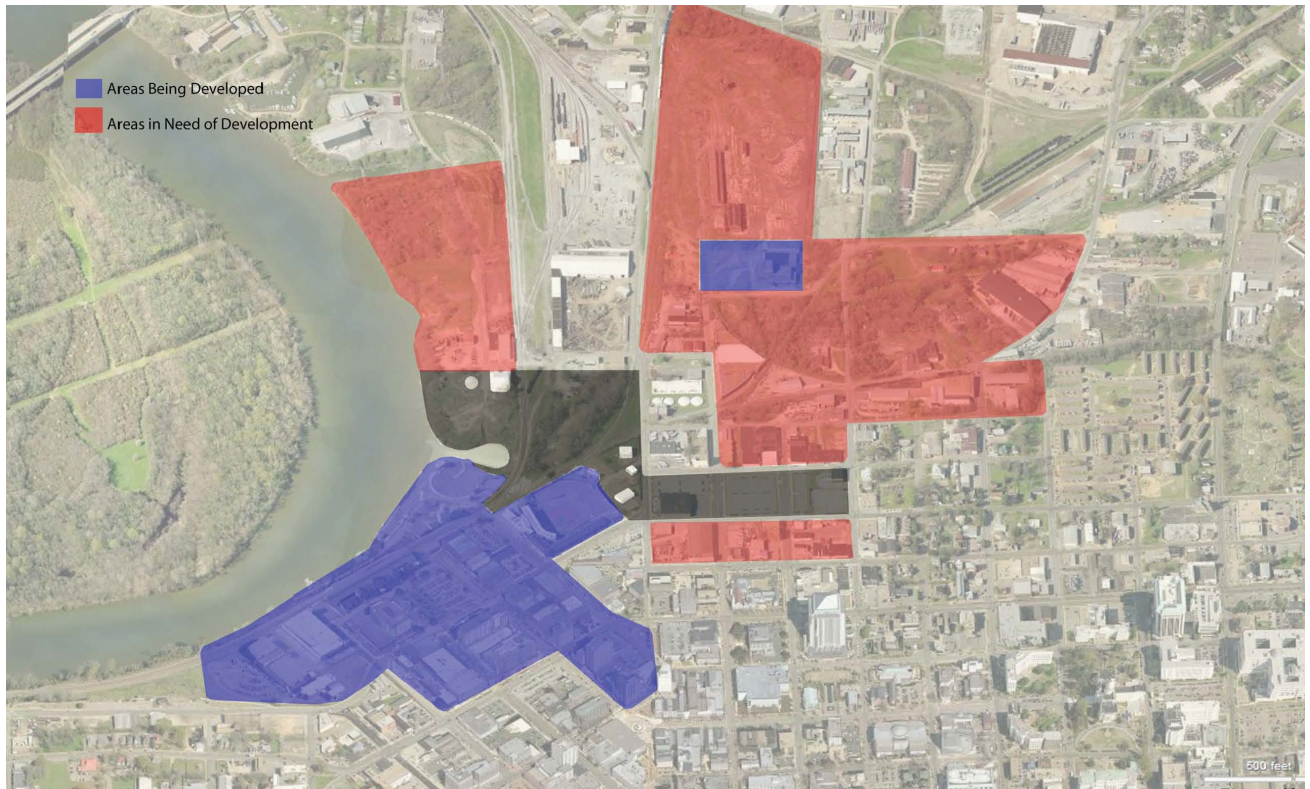


Figure. 43

The areas in blue are key areas along the riverfront currently being developed. These areas include the restaurant district and a small portion of the commercial district. However, the areas in red consist of dilapidated, abandoned, or rundown sites that need to be closely looked at and considered for future development. The area in black is the area of most potential because of its adjacency to the Alabama River, Riverwalk Stadium, three rarely used parking lots, and Riverfront Park.

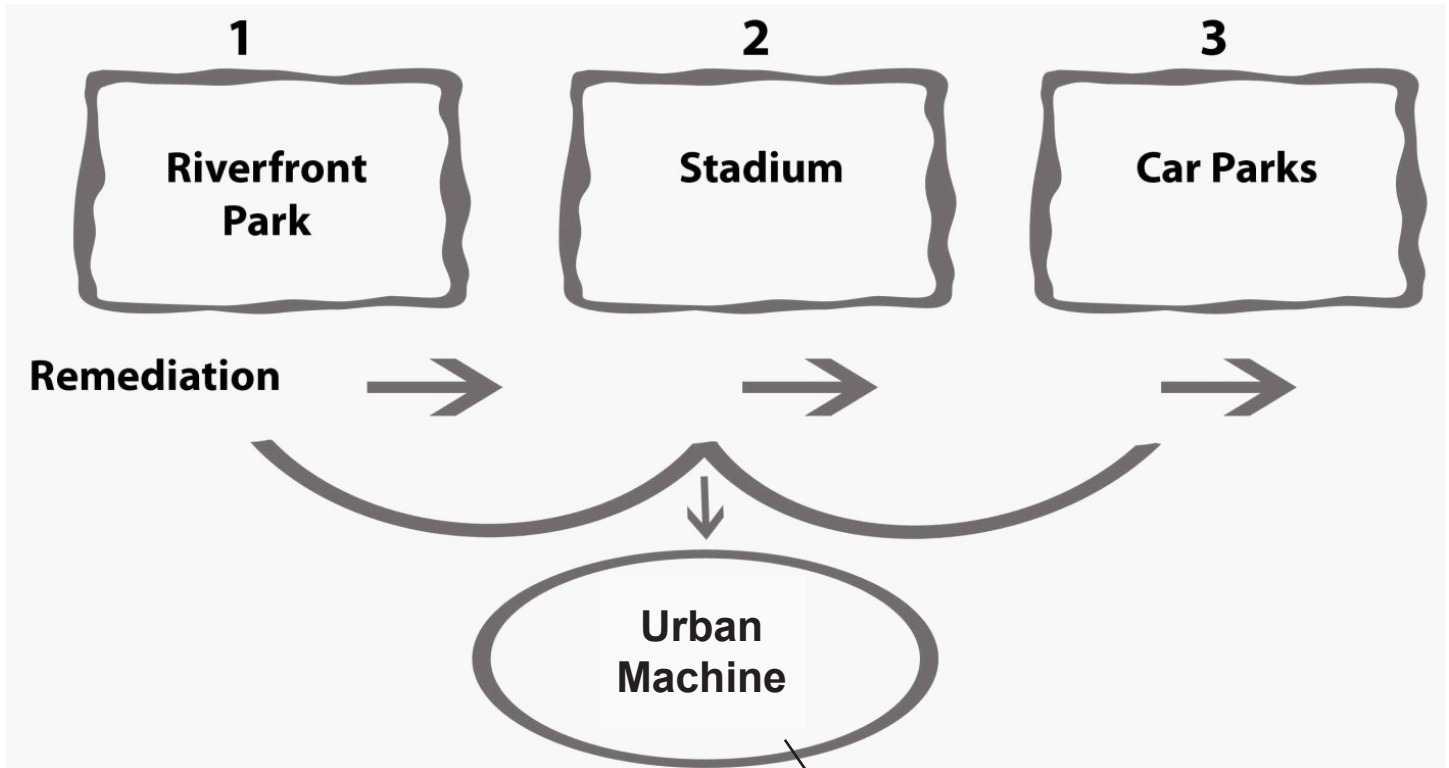


Figure. 44

- What can Montgomery sustain?
- What can 1, 2, and 3 provide?
- What can I do to help?

To create this urban machine the following issues have to be addressed:

- There needs to be a revitalization of the city.
- The downtown and riverfront needs to be developed.
- People need to be brought in like a centripetal force from the outskirts of the city to the downtown and riverfront area.
- The stadium needs to be a year round destination.
- Connections need to be made from sites to their surroundings.



# Development of Montgomery

## Montgomery's existing master plan

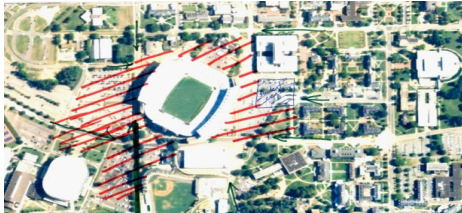
- Organize development around open spaces and civic centers.
- Preserve and enhance the city's open space systems.
- Design centers and corridors in context.
- Each activity center should be unique.
- Maximize accessibility in activity centers.
- Pedestrians should not be forced to walk through parking lots and across driveways and traffic to reach their destinations.
- Expand downtown's green and civic space.
- Reinforce connections to the river front.

# Mapping Connections with Stadiums

A study was conducted on various stadiums around the world and how they connect to their surroundings.



Good connections to their surroundings

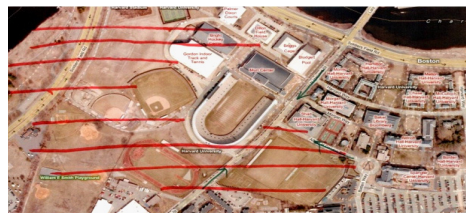


Slight connections to their surroundings



Figure. 45

Bad connections to their surroundings



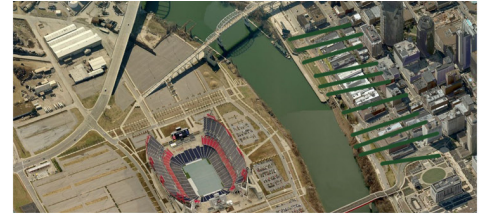


# Mapping Connections with Riverfront Parks

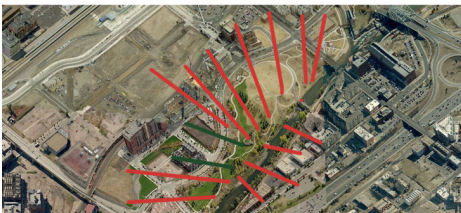
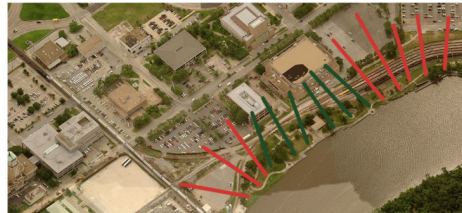
A study was conducted on various Riverfront Parks around the country to see how they connect to their surroundings.



Good connections to their surroundings



Slight connections to their surroundings



Bad connections to their surroundings





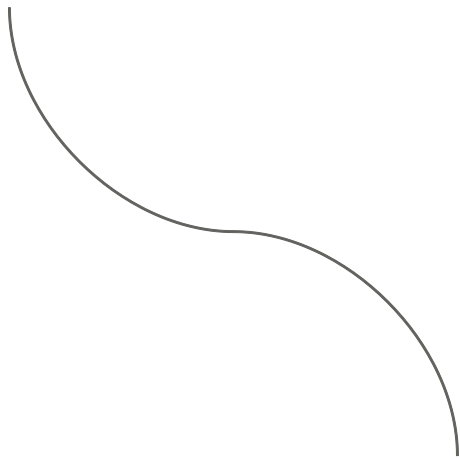
# Chapter 3

## Theoretical Framework/Driving Force

After the various studies of stadiums and mapping of the river front one could see the potential of having all of these sites working together as a machine that could offer the city something more than they could do on their own.

Create an urban machine

- The machine does not need to mimic nature.
- It is meant to act as an ecological service, but in an urbanized way.
- The urban machine working together with its surroundings will create an urban field.



Natural Curve



Urban Curve

Figure. 47

# Site Selection

After researching downtown Montgomery, the riverfront area seemed to have the most potential for development. The next detailed mapping will focus on the riverfront area.



Figure. 48



# Mapping of Riverfront

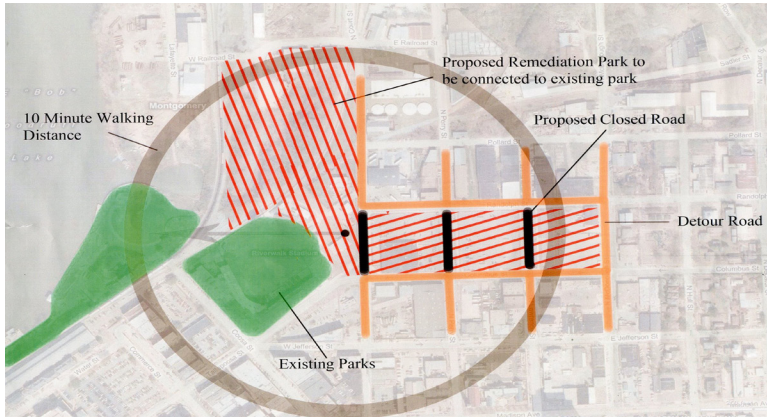


Figure. 49

Ten minute walking distance for the riverfront

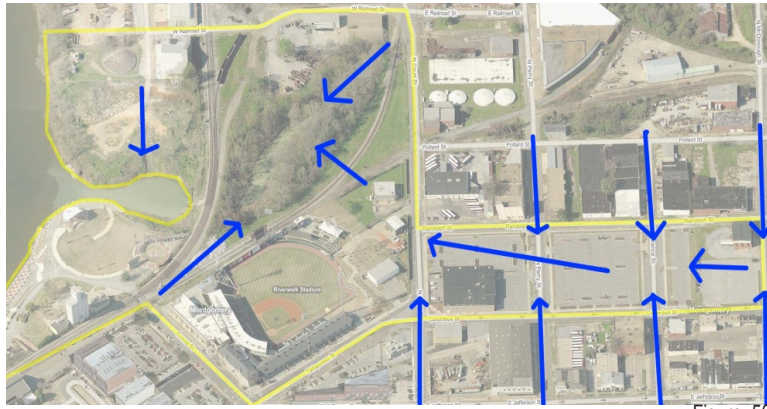


Figure. 50

Contamination flow of selected site

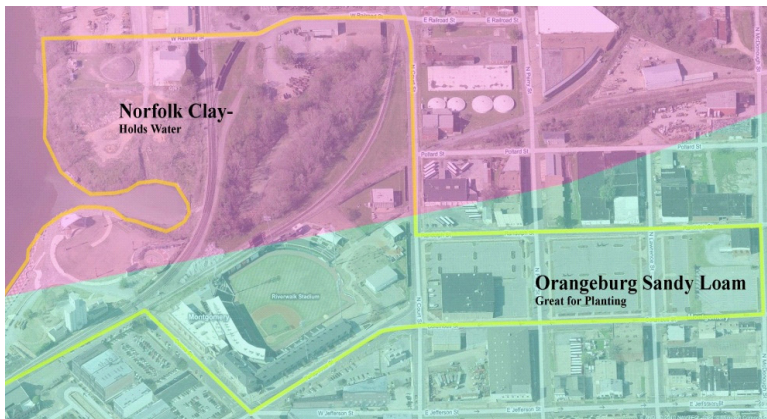


Figure. 51

Soil types for selected site





# Chapter 4

## Design Process

Following the mapping exercise, the next step was to move into design explorations. After studying the geometry of the city one could see how it could be blended with ecological services. Experimentations were conducted to explore the idea that ecological services can be introduced in the urban condition without clashing. The idea that nature does not need to look “natural”. Ecological conditions can be blended in with the urban fabric by intersecting and blending with existing conditions.

After mapping exercises, site visits, and case studies were explored a series of design explorations were conducted. Experimenting with connecting the riverfront to its surroundings, remediating contaminated soils and water systems, and also encouraging development around the existing amenities in the river front area. A series of sections, perspectives, plans, and diagrams were conducted to study spatial qualities of the design. Through this design process a final design was developed that is successful in meeting all the needs of the river front.



# Design Investigations

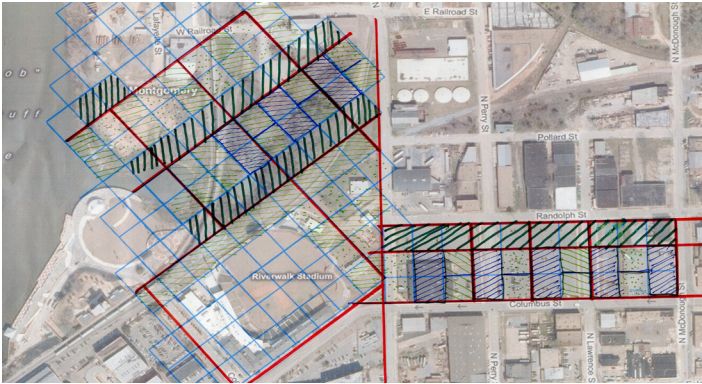


Figure. 55



Figure. 56

Series of design investigations that explored various concepts. These concepts concentrated on stormwater catchments and various planting patterns which could change the experiential qualities of the site, making it something different from other sites.

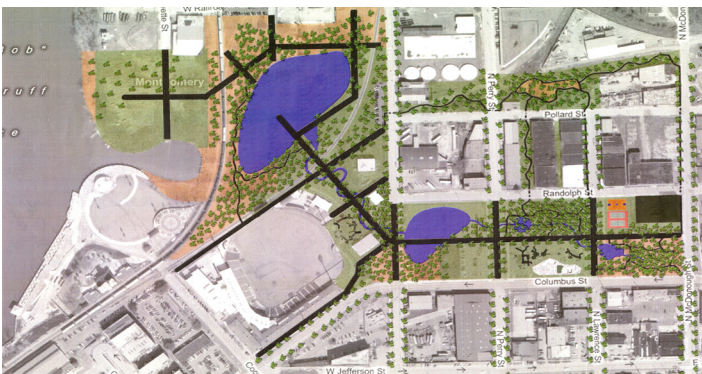


Figure. 57



# Design Investigations

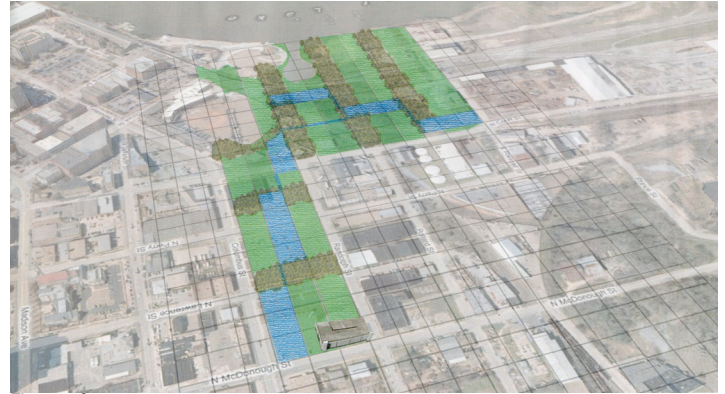


Figure. 58

Design explorations that experiment with various city grid patterns, constructed wetlands, rows of vegetation, and green space.

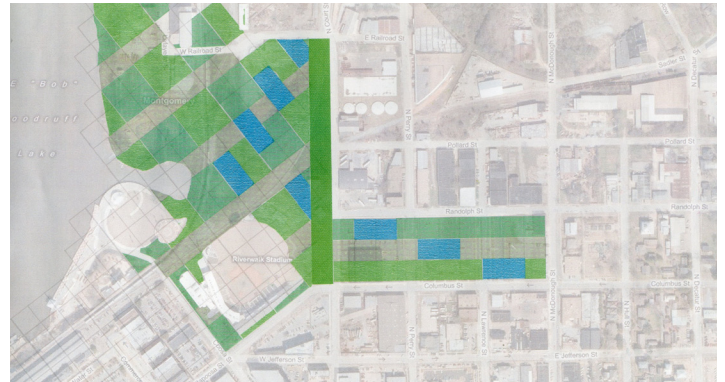


Figure. 59



Figure. 60



# Design Investigations

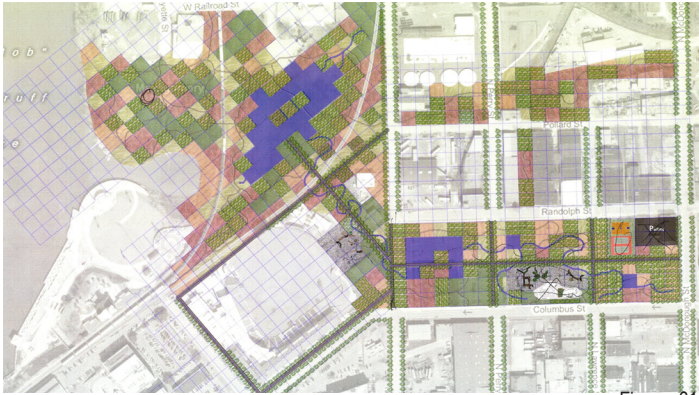


Figure. 61



Figure. 62



Figure. 63

Designs that experiment with various geometrical patterns that could enhance one's experience in the site. They explore vegetation plantings of many colors, shapes, and sizes.

# Design Investigations



Figure. 64

Various sections and perspectives showing spatial qualities of a design idea.



Figure. 65

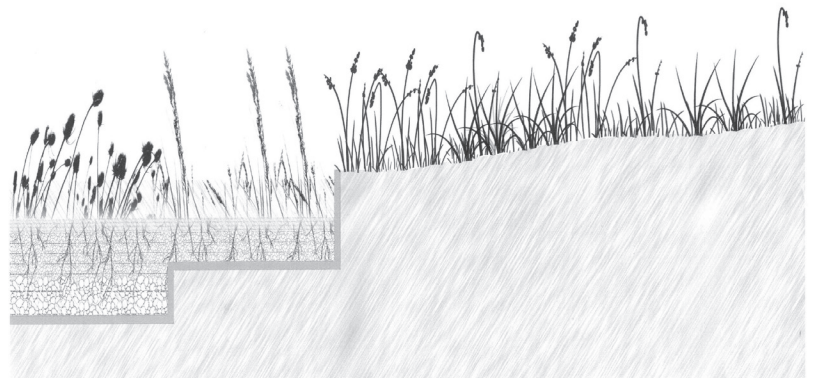


Figure. 66

# Design Investigations

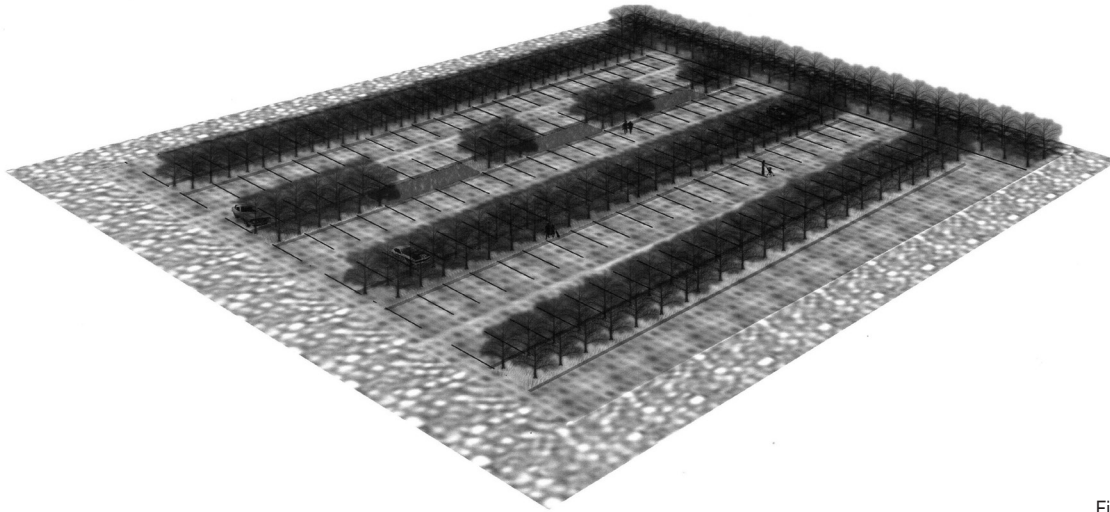


Figure. 67

Various sections and perspectives showing spatial qualities of a design idea.

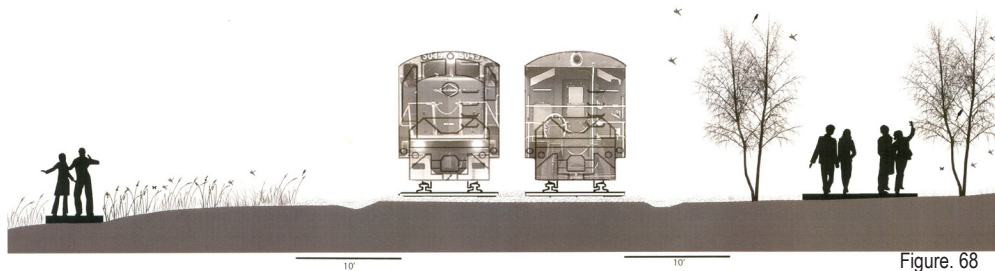


Figure. 68



# Design Investigations



Figure. 68

Various sections and perspectives showing spatial qualities of a design idea.



Figure. 69





Bird eye view perspective was conducted to show spatial quality of trees and wildflowers. Grid layout and urban geometry is apparent by the vegetation plantings.

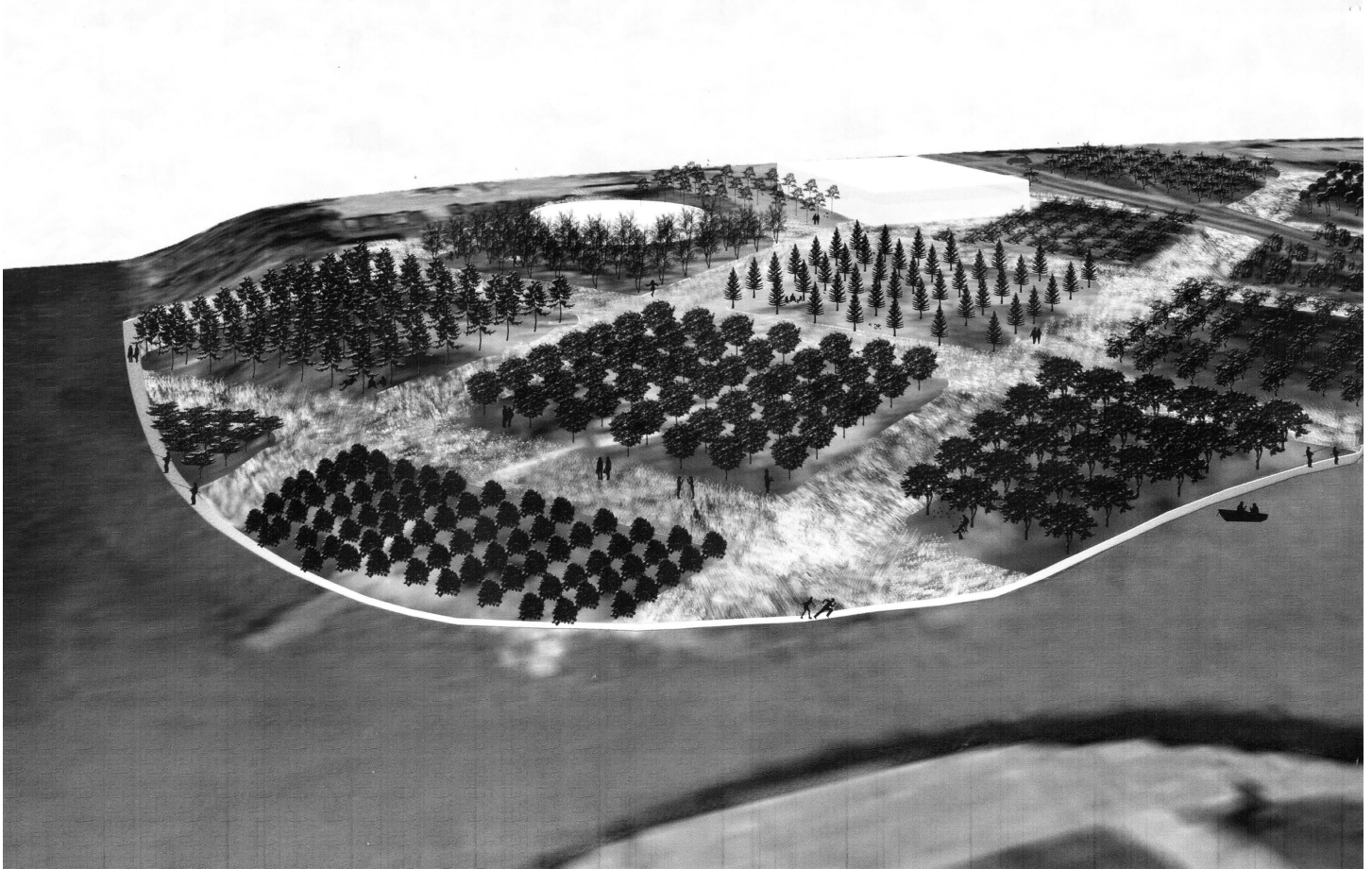


Figure. 70



# Chapter 5

## Final Design

After many design explorations and research taking a step back was timely. Exploring what the site itself was offering that could influence design was of great importance. Studying how contamination actually flows across the site and where the point source contaminated sites are located with respect to the selected site was an important step before a final design could take place.

The current soil conditions of the selected site were of great interest due to the fact they could affect the design in many ways. Studies revealed there are many different types of soils located on the site due to past construction and also by the dumping of various soils from other sites in the city. Also, since there is a creek running through the site and the site is adjacent to a major river is of great importance to identify which parts of the site are predominantly wet or dry.

There are many things located in and around this site therefore understanding their uses is of great importance to the design. These different sites are diverse in uses and are all used in some way or another. Therefore linking them together by providing a space of many uses between them could be beneficial to their survival.

# Taking Another Look

Map of the existing conditions contamination flow from point sources and how they affect the riverfront area.



Figure. 71



# Existing Conditions

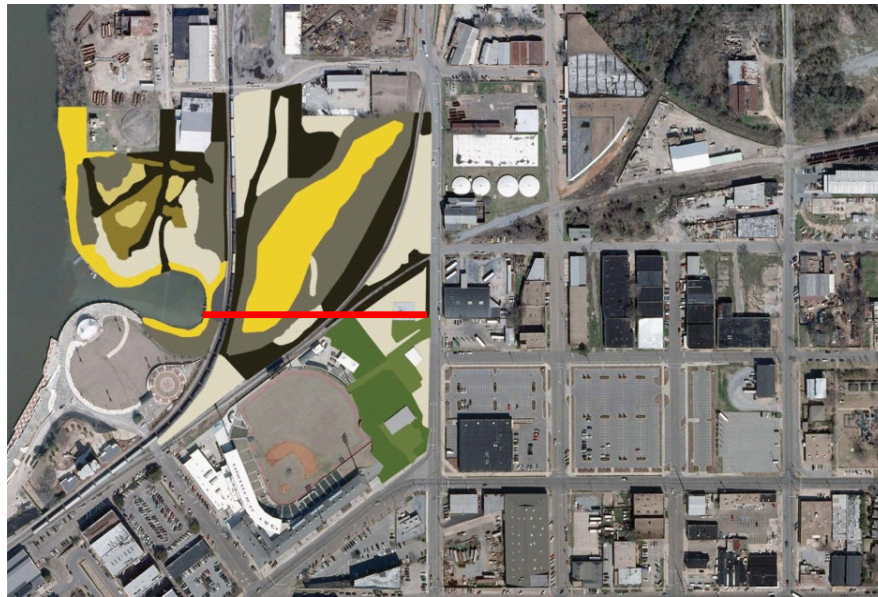


Soil conditions (wet/dry)

Figure. 72

Studies have revealed the many different soil types and soil conditions on the site. These different soils are of great importance to the site design and will be one of the main parts of the design methodology.

Study of on-site soil conditions.



Various soil types throughout the site

Figure. 73

# Existing Conditions

Study of the soil conditions on site. One section shows various soil types and the other shows the soil conditions. Area where section derived from can be seen on previous page.

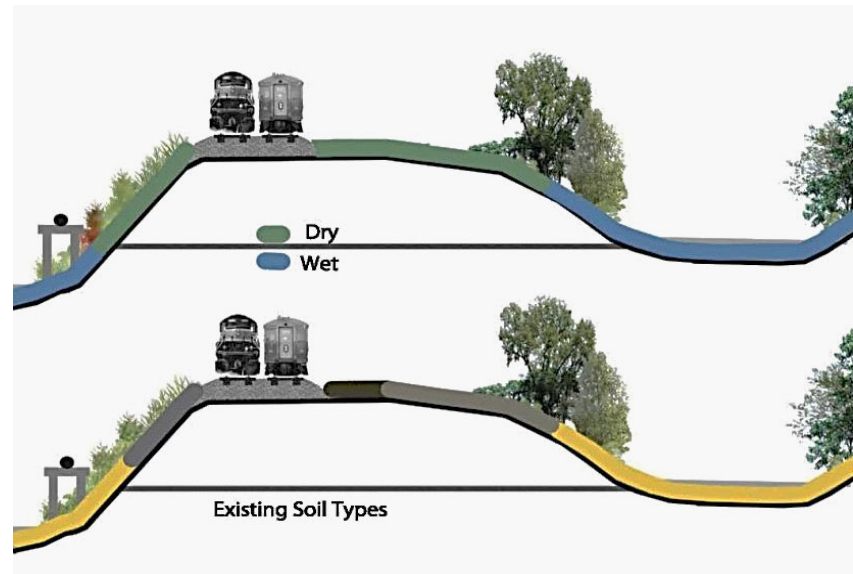
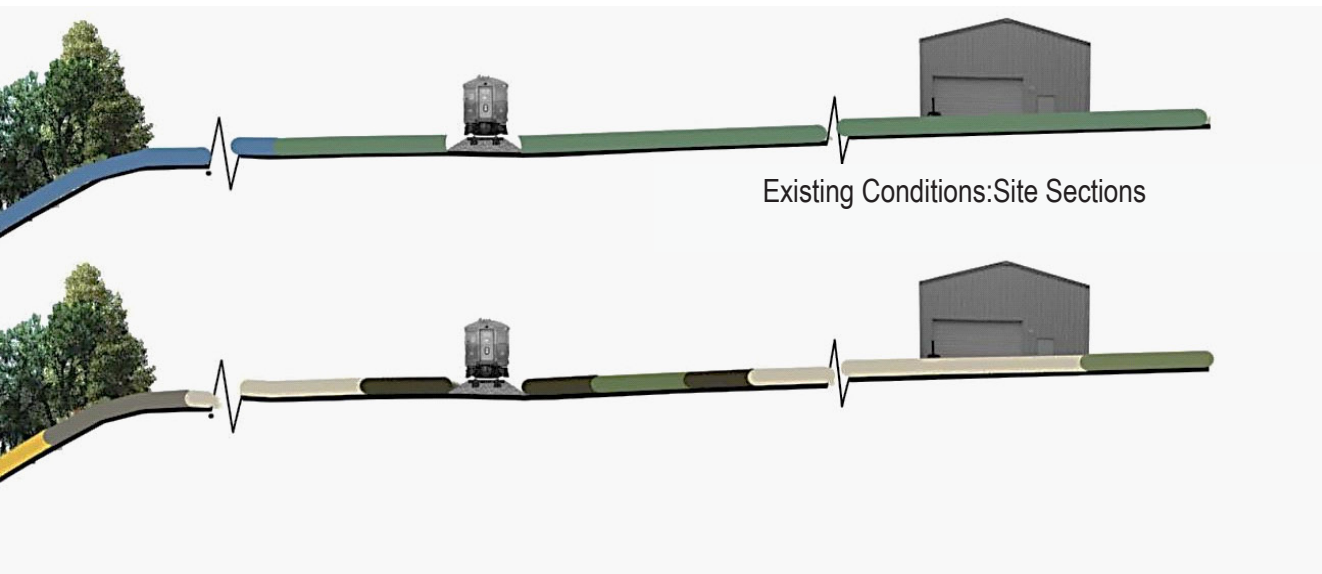


Figure. 74

# Site Sections



The different colors on the existing soil types section represent the many different soil types which can be found in one section cut.



# Existing Conditions



Recently-built Riverfront Park was intended to be a year-long attraction for the city, but actually fails to attract visitors except for the occasional concert.



Area in the Northwestern part of the site has served as a dumping site of various soils from outside sources.



Cypress Creek, a contaminated stream system, runs to the Alabama River. Stormwater runoff flows directly into the creek polluting a water source which could have a positive impact on the city.



Riverwalk Stadium, home to the Montgomery Biscuits, is one of the few reasons why anyone comes to Riverfront Park. This potentially active area should not depend only on a few games to help bring people to the area.



Figure. 75



The existing car park has over 600 spaces. The problem is that the parking lot is only ever partially filled for a small fraction of the year.



# Final Design Proposal

Final design proposal diagrams.

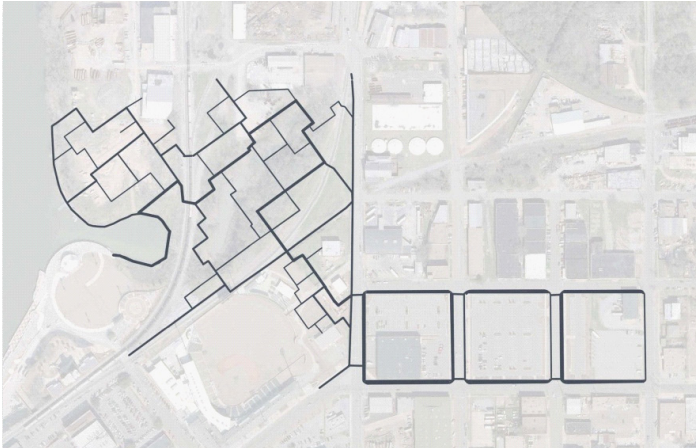


Figure. 76

Circulation plan designed to enhance experience of the constructed wetland and other areas of the site. The various paths weave in and out of planting scheme and all paths are in straight lines to enhance the representation of the geometrical patterns of the city. The paths are also different widths which determine whether they are a primary, secondary, or tertiary path.

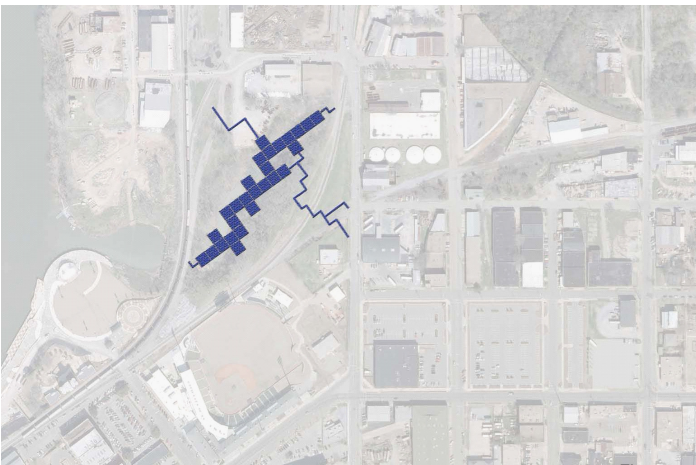


Figure. 77

Constructed wetland designed to filter out contaminants flowing onto the site. The wetland filters Cypress Creek and overland flow which is caught and directed by swales as well as water captured by the permeable parking lot.

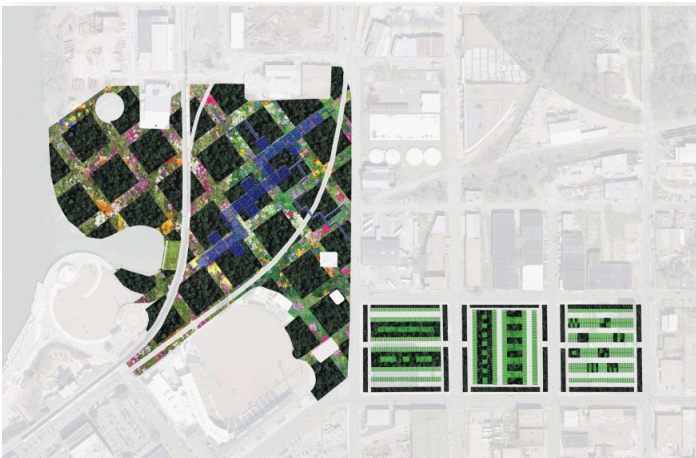


Figure. 78

Vegetation planted in the same pattern of the city grid. Trees are planted in smaller versions of a city block, but each block is a selected species of tree. Wildflowers are planted in rows that represent the streets of the city. The wildflowers are spread in these rows as a seed mix. The certain site conditions will determine which plant comes up where.



# Final Design



Figure. 79



The final proposal is a remediative design that is continuously working to clean overland water flows, Cypress Creek, and the soil located on site. The vegetation palette is one of the main forces working toward this. All the plants proposed in the design have remediative technologies. They uptake contaminants through their roots to either break them down or store them in the plant itself. The constructed wetland is the main remediative factor for the design proposal. Cypress Creek flows directly into it which is then filtered before it can be deposited into the Alabama River. Also, the constructed wetland filters some of the overland water flow which is directed to it by swales or pipes.

The design is meant to enhance to geometrical patterns of the city grid. The city has two current grid systems which run north to south and the other runs adjacent to the Alabama River. Emphasizing this was of great importance to the design and therefor enhancing this layout was key to its success.





# Development

The proposed site is surrounded by potential development areas and existing areas of amenities. The sites with amenities will directly benefit from the proposed site design. The design provides a place where the people of Montgomery and its visitors can go to relax, tailgate, have picnics, or just be with their family in an environment that's unlike any other in Montgomery. The other areas surrounding the site are areas of potential new commercial and residential development. With this new development between existing amenities the area surrounding the park will become a livelier place and due to the sites multifunctional use.



-  Potential new commercial and residential
-  Existing tourist and visitor amenities



Figure. 80



The proposed vegetation is a diverse palette meant to react differently to the existing soil conditions. Trees are planted in a block to enhance the grid system of the city. The blocks are the size they are so visitors can see how the different soil on the site determine how the trees grow. Certain soil conditions will limit the growth of the tree and others will enhance its growth. The wildflowers are a seed mix spread out over the grid like pattern of the site. The different soil conditions will also determine the performance of the plant and which grows where. The vegetation in the parking lot is meant to provide shade for cars and visitors. The plants are meant to be spacious thus providing an area for friends and family to enjoy. To show how the plants react to certain soil conditions a series of sections were conducted to show plant growth in ten and twenty years.

# Vegetative Response

After 10

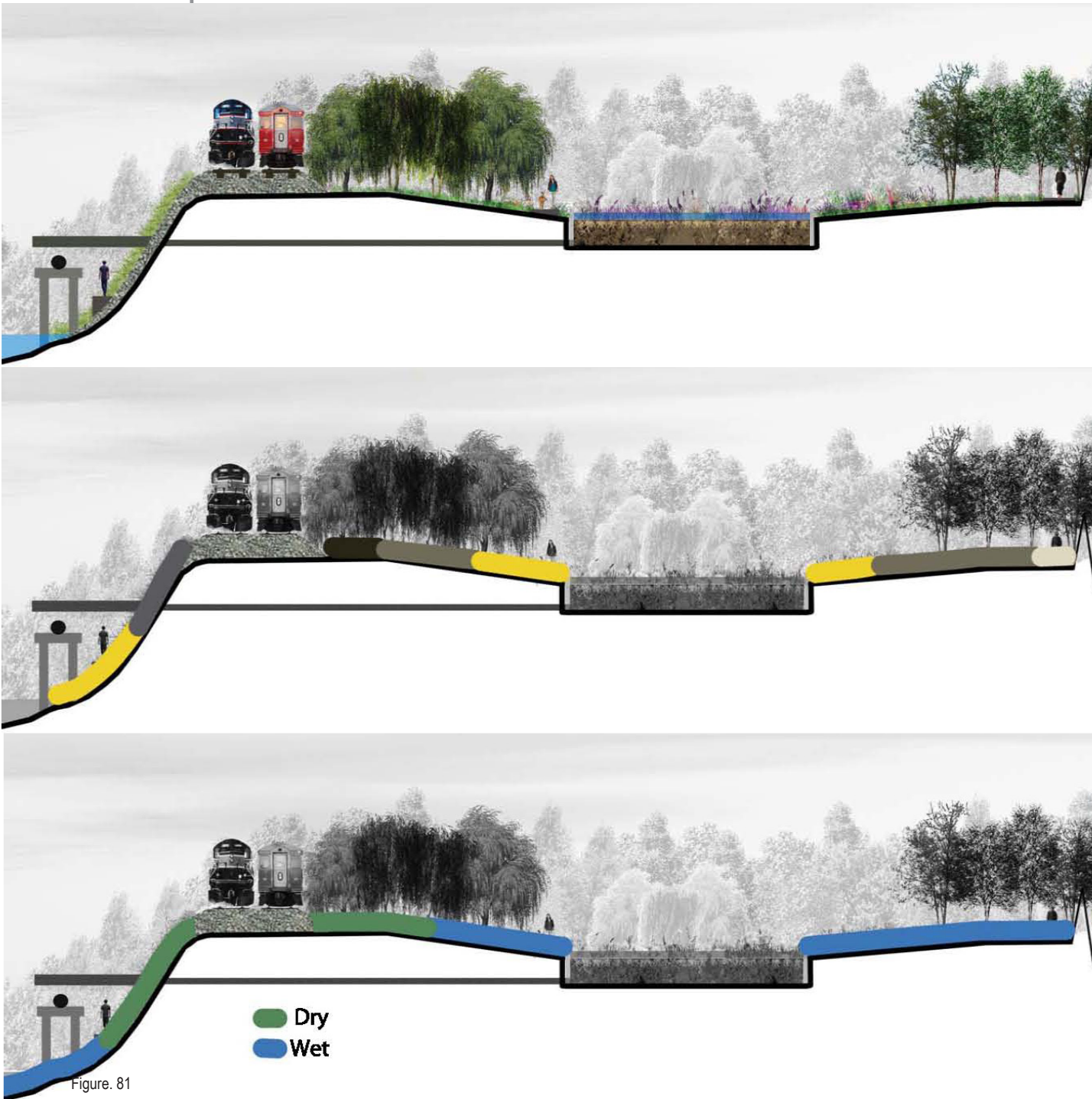


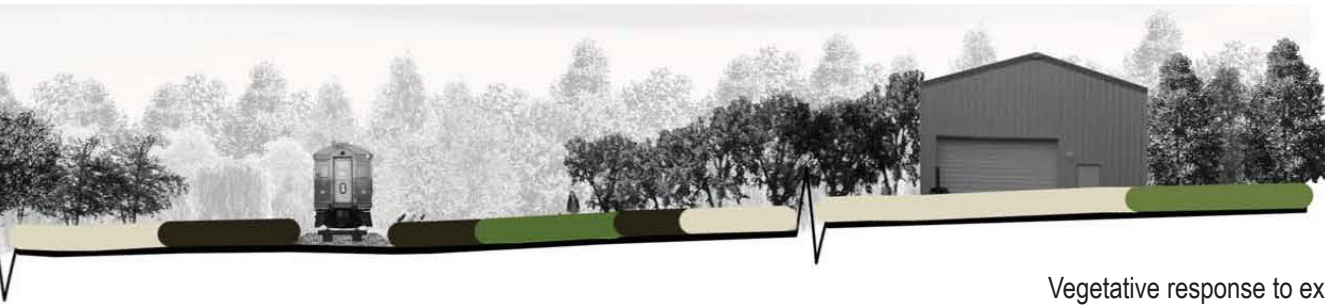
Figure. 81

Years

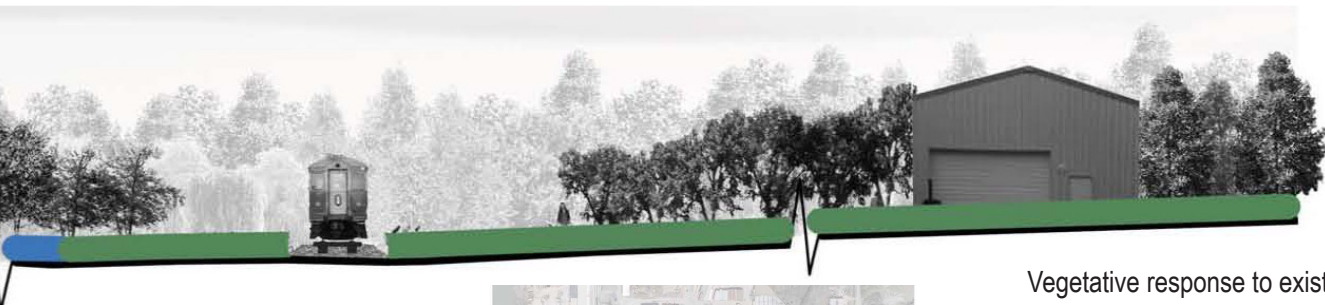
To Existing Site Conditions



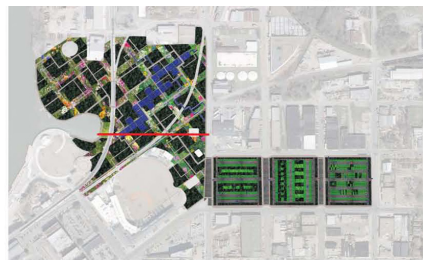
Site Proposal



Vegetative response to existing soil types



Vegetative response to existing soil conditions



Section Key



# Vegetative Response

After 20

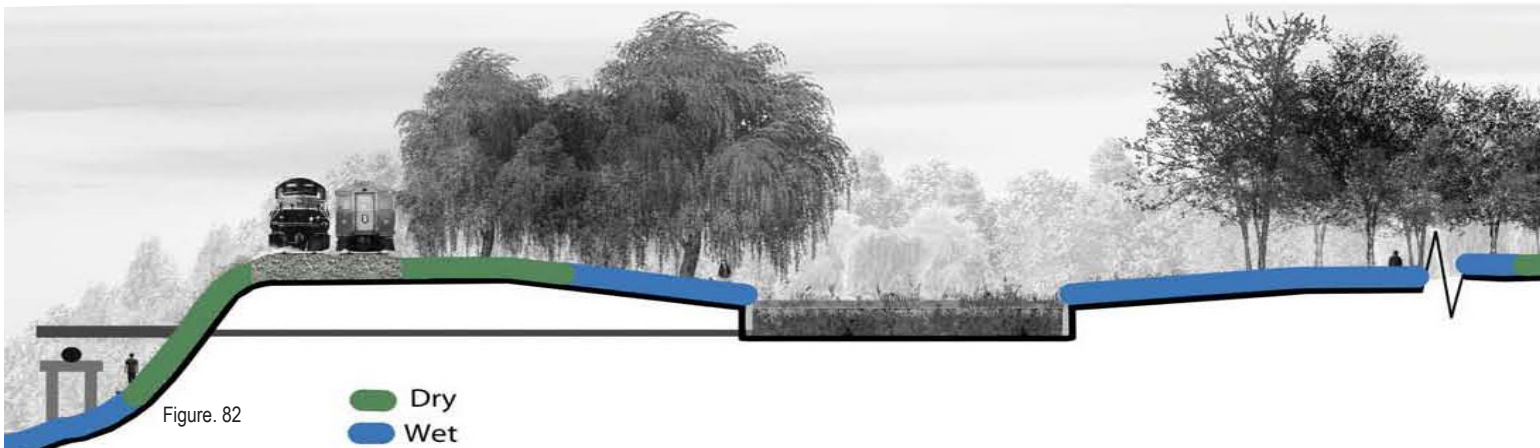
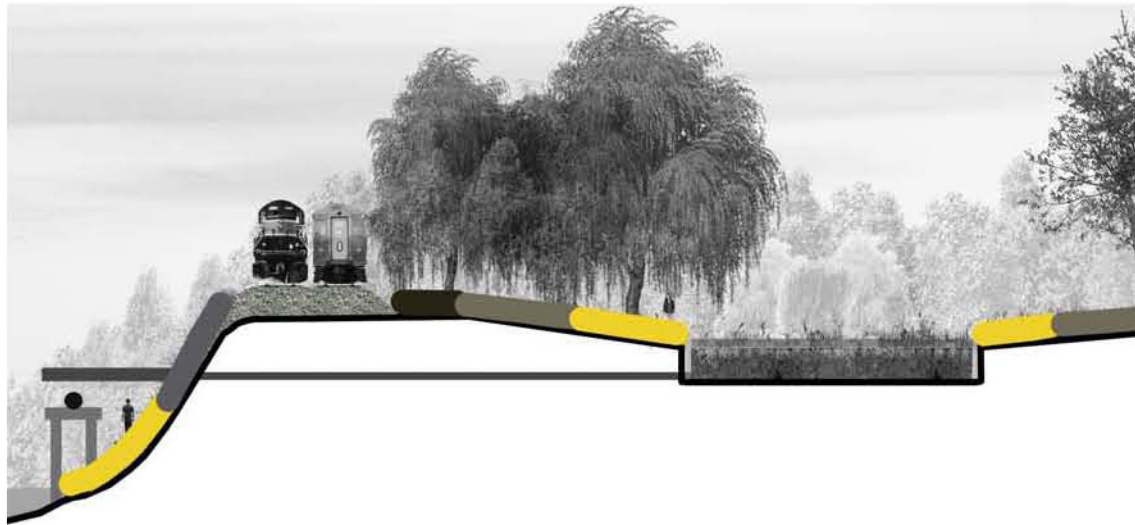
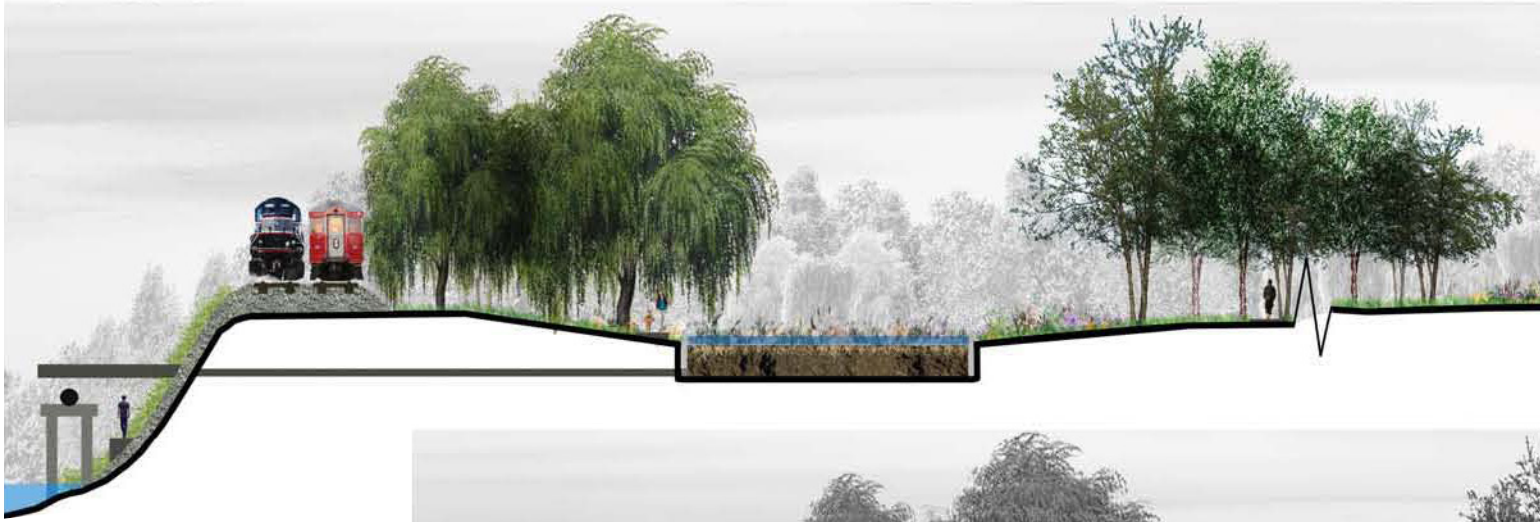


Figure. 82

● Dry  
● Wet

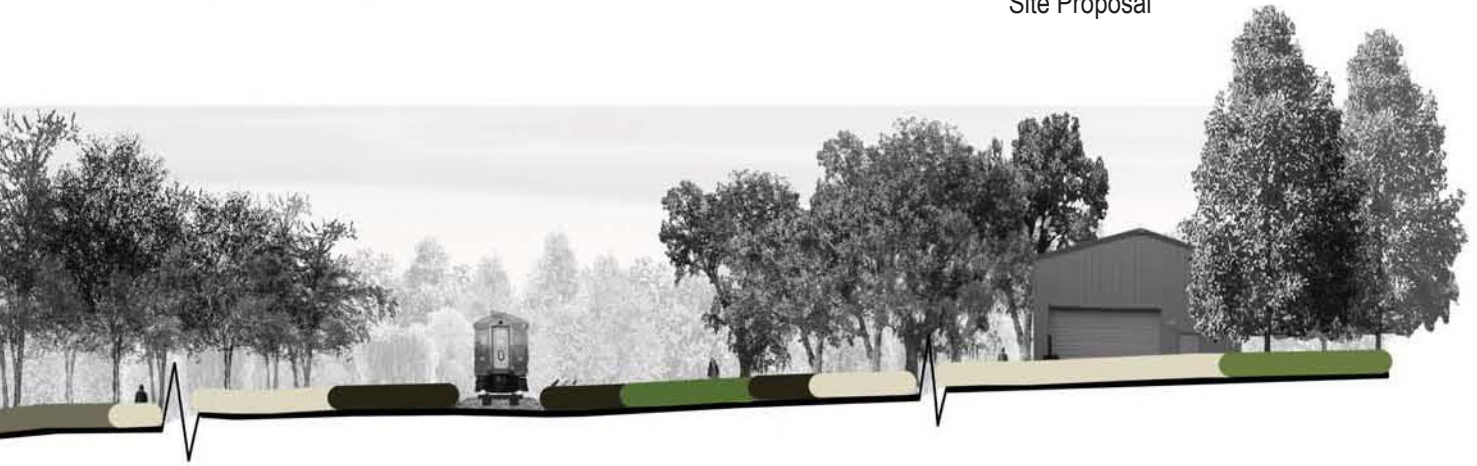
Years

To Existing Site Conditions



Section Key

Site Proposal



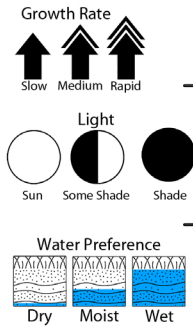
Vegetative response to existing soil types



Vegetative response to existing soil conditions



# Vegetation




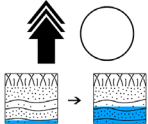

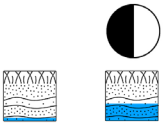

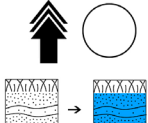

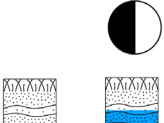

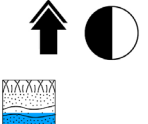

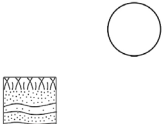

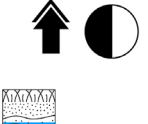

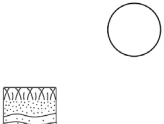



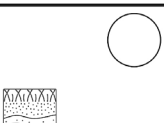



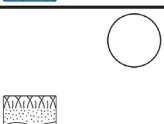

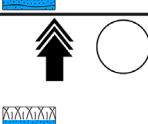

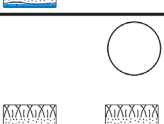

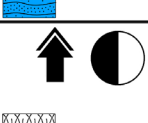

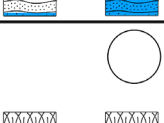



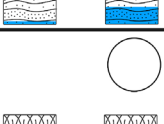

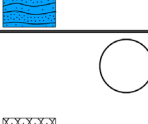

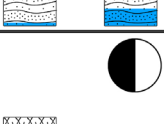

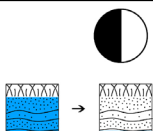

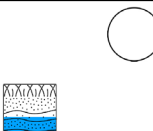

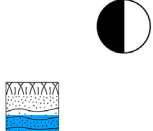


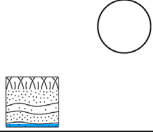


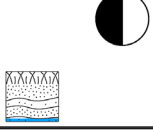


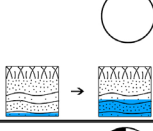


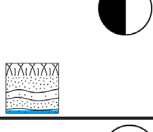


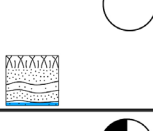
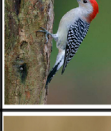

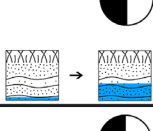
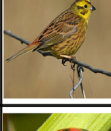

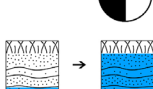

Scientific Name & Common Name		Characteristics	Scientific Name & Common Name		Characteristics
	<i>Populus deltoides</i> Eastern cottonwood			<i>Rudbeckia hirta</i> black eyed susan	
	<i>Fraxinus pennsylvanica</i> green ash			<i>Asclepias tuberosa</i> butterfly weed	
	<i>Acer rubrum</i> red maple			<i>Amorpha canescens</i> leadplant	
	<i>Betula nigra</i> river birch			<i>Cacalia atriplicifolia</i> pale indian plantain	
	<i>Platanus occidentalis</i> sycamore			<i>Coreopsis palmata</i> prairie coreopsis	
	<i>Liriodendron tulipifera</i> tulip-poplar			<i>Echinacea purpurea</i> purple coneflower	
	<i>Salix babylonica</i> weeping willow			<i>Dalea purpurea</i> purple prairie clover	
	<i>Quercus nigra</i> water oak			<i>Dalea candida</i> white prairie clover	
	<i>Cornus sericea</i> red osier dogwood			<i>Baptisia alba</i> wild white indigo	
	<i>Andropogon gerardii</i> big bluestem			<i>Monarda media</i> purple bergamot	

Figure. 83



	<i>Elymus racemosus</i> giant blue wild rye			<i>Ratibida pinnata</i> yellow coneflower	
	<i>Spartina pectinata</i> prairie cordgrass			<i>Apis mellifera</i> Honey Bee	
	<i>Sorphaatum nutans</i> indian grass			<i>Selasphorus rufus</i> rufous hummingbird	
	<i>Miscanthus sinensis</i> 'Strictus' porcupine grass			<i>Lanius ludovicianus</i> loggerhead shrike	
	<i>Schizachyrium scoparium</i> Little Bluestem			<i>Danaus plexippus</i> monarch butterfly	
	<i>Sporobolus heterolepis</i> prairie dropseed			<i>Cardinalis cardinalis</i> red cardinal	
	<i>Sporobolus airoides</i> alkali dropsed			<i>Melanerpes erythrocephalus</i> red-headed woodpecker	
	<i>Panicum virgatum</i> switch grass			<i>Colaptes auratus</i> (Linnaeus) yellow hammer	
	<i>Calamagrostis x acutiflora</i> feather reed grass			<i>Coccinella septempunctata</i> ladybug	

# Permeable Parking

- Paths
- Tress
- Grass Pavers
- Lawn
- Permeable Concrete

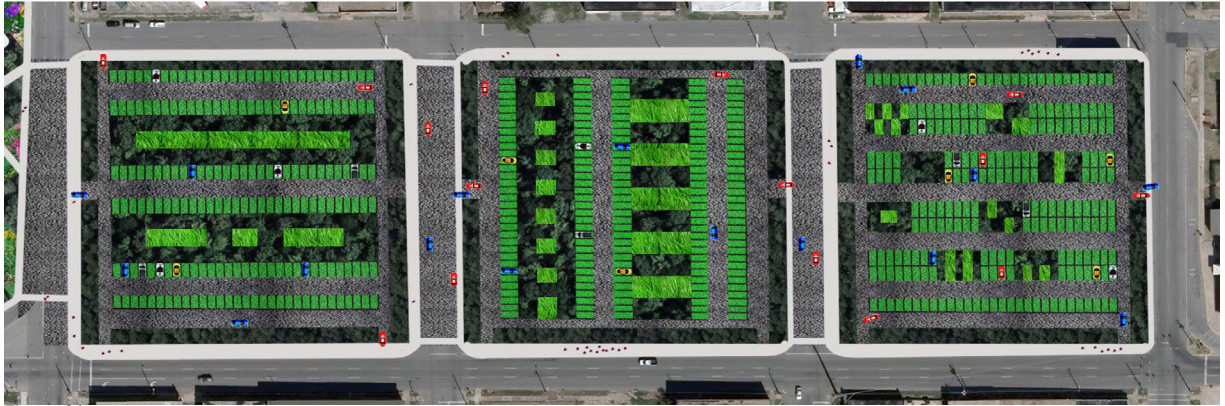
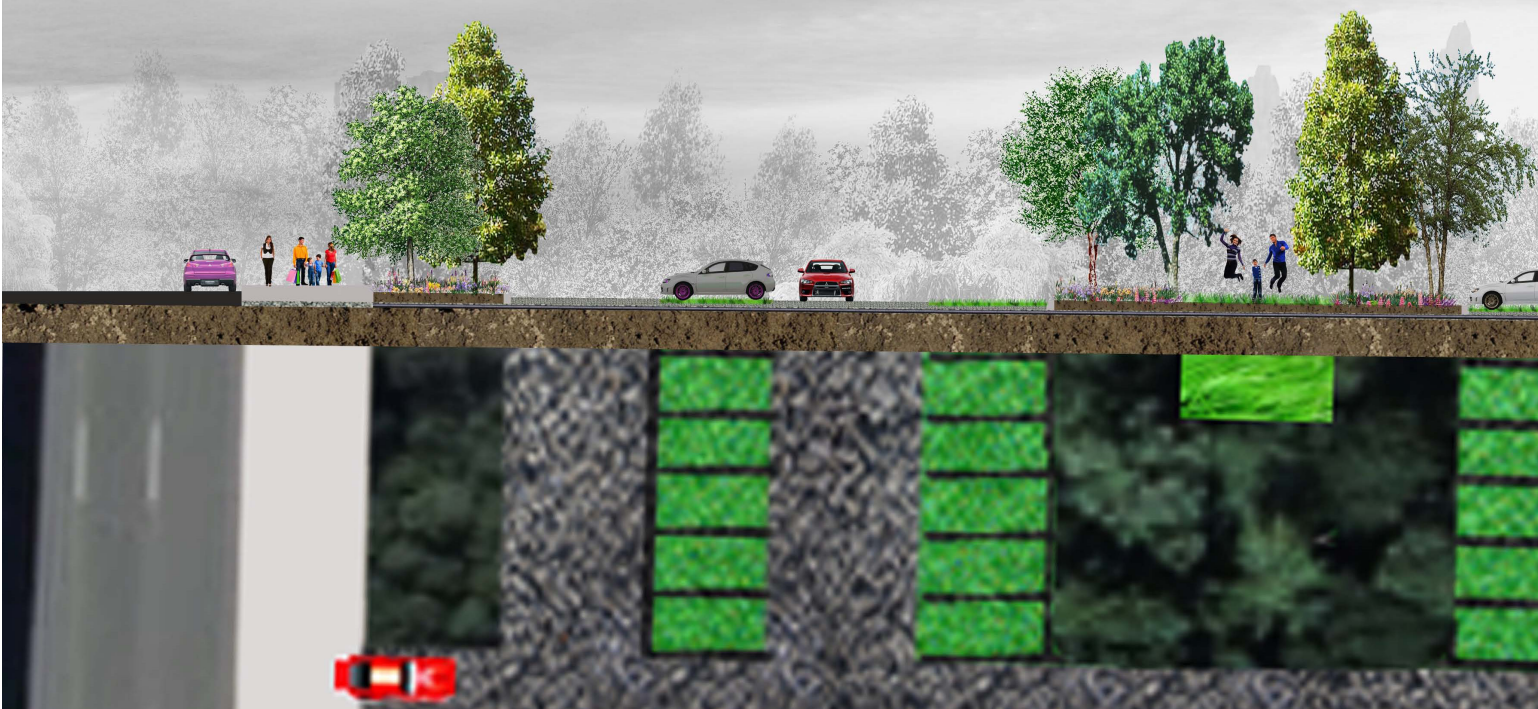


Figure. 84

Figure. 85





Parking lot is completely permeable which captures the stormwater and directs it to the constructed wetland. Ecological conditions are introduced into the parking lot so it functions for the pedestrian as well as the car. Since the parking lot is intended for the Riverwalk Stadium and Riverfront Park it is designed to accompany tailgating, picnicking, and relaxation for friends and family.

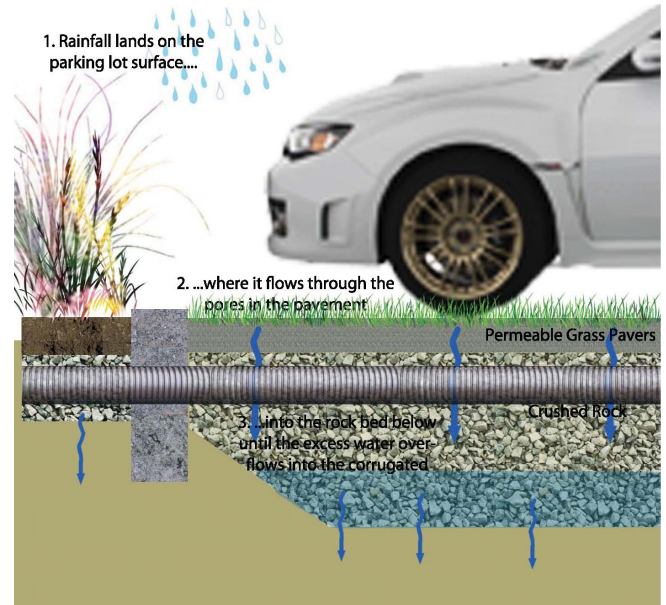


Figure. 86





# Constructed Wetland Diagram

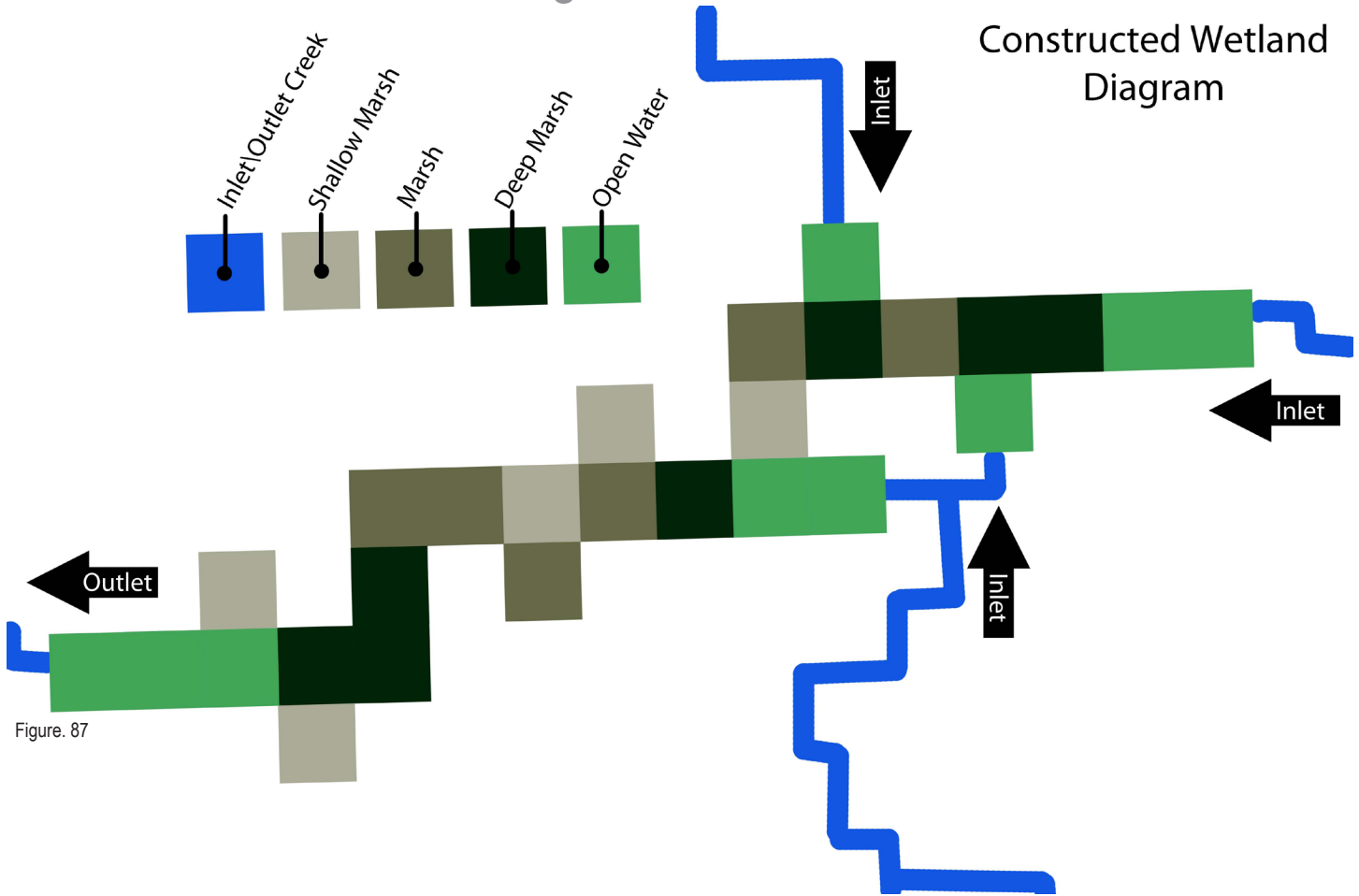


Figure. 87

Constructed wetland is designed to have cells which filter out certain contaminants in each cell. The water flows from one cell to the other to go through each step of filtration. Once the water is filtered it is then discharged into the Alabama River.

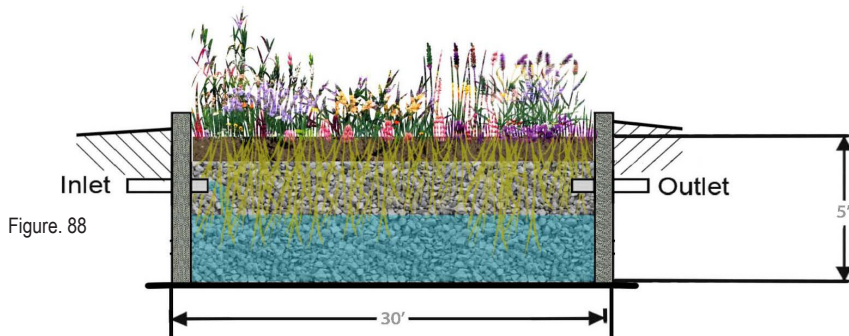


Figure. 88

# The Steps You Take

The steps you take in this site are very intentional. The wetland experience is intended to introduce people to remedial techniques so they can take that knowledge to other parts of the city. Since the experience is so important and the scenery is unlike any other, people will start to visit the site more and more. With more people coming to this area development such as shops and bakeries will start to follow. The diagram below show what one will experience when moving through the site.

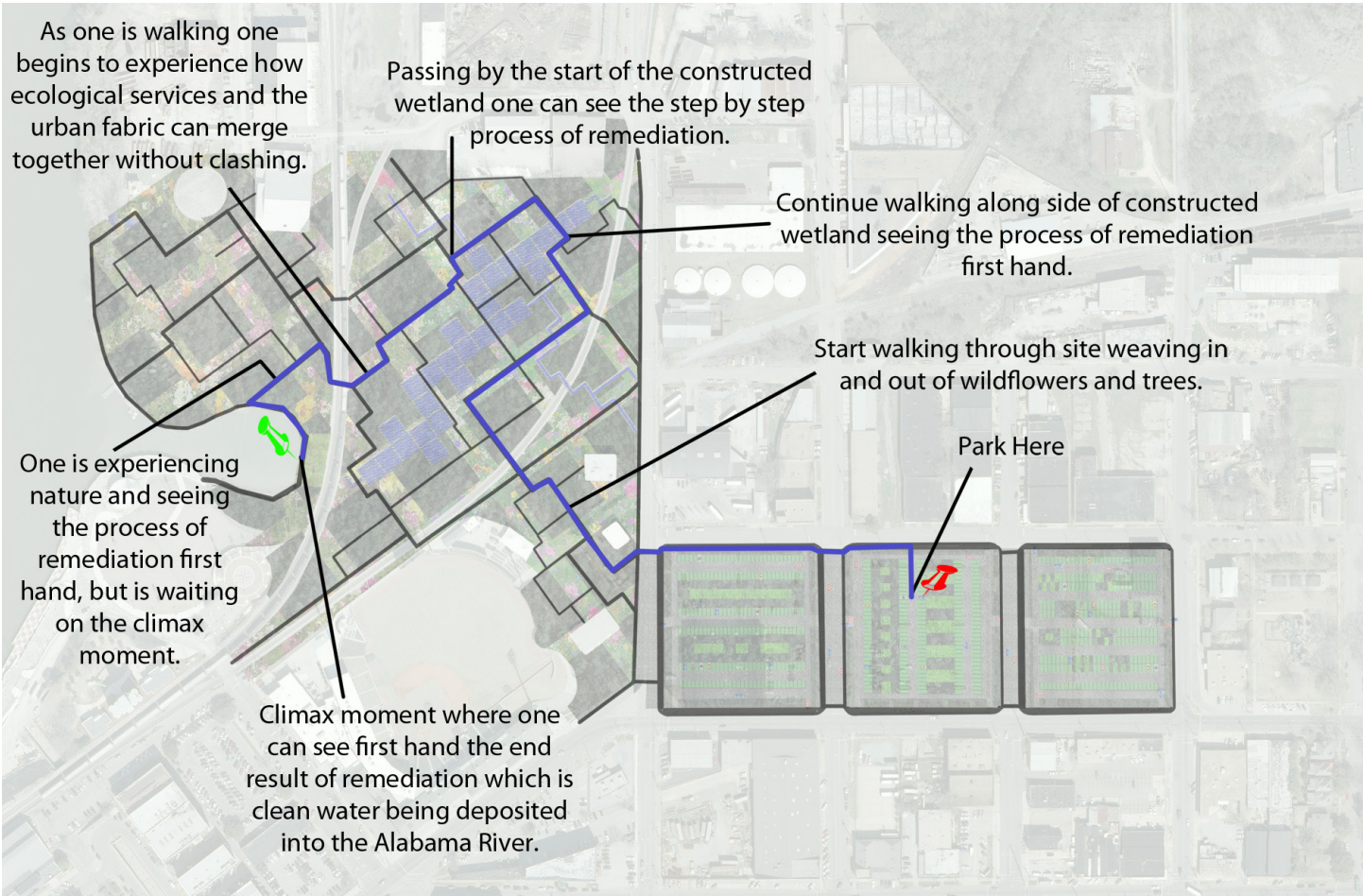


Figure. 89



# The “Climax Moment”

The climax moment occurs when the purpose of the design becomes apparent by actually seeing clean water being discharged from the constructed wetland in the Alabama River.



Figure. 90





# Conclusion

Montgomery, Al. is a very contaminated city with great potential to be something special. With a declining riverfront and downtown, the city is in great need for a revitalization project. By studying the current infrastructure a theory was devised to encourage development and remediate contaminated soils and water source. By bringing in ecological services and merging them with the geometry of the urban condition the riverfront can start to transform into a unique place which can greatly benefit the city.

The design acknowledges and was influenced by the current Montgomery master plan. The design encourages development around public space, enhances the city's open systems, is in context to its surroundings, is unique to other spaces in the city, expands downtown's green and civic space, and reinforces connections to the river front. With this new public space, that reinforces connections to current amenities, the riverfront can start to develop to its potential.

Through design, remediation can change a cities future development for the greater good. Montgomery can have a remediative park system to help clean the city and reinforce connections to its surroundings which can inspire future development. Montgomery will be known as not only the capital, but a model for development.







Figure\_91

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