Learning from the "Lost Forty"

an ecologically resilient demonstration park...

Shawn Kummet | LA Thesis 2012

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RESILIENT ECOLOGICAL SYSTEMS

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

By:

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In Partial Fulfillment of the Requirements
for the Degree of
Bachelors of Landscape Architecture

Primary Thesis Advisor

Thesis Committee Chair

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Date

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THESIS ABSTRACT

This thesis focuses on the reimagining of Riverside Park in Grand Rapids, Minnesota, to incorporate the principles of successional ecosystems found in the “Lost Forty” to produce a demonstration park that promotes walkability in a Midwestern town constrained by cold weather and automobile dominance.

Keywords

rural, walkability, Midwest small town, ecosystem, landscape ecology, demonstration park

Problem Statement

Can the redevelopment and reactivation of a riverfront park increase the cultural and biological value of forest ecosystems and subsequently encourage park use by its citizens?

Statement of Intent

Typology

Midwest Small Towns

Claim

Designers are looking at where the majority of people are congregating in urban area, and are pushing to create walkable sites. This is being overlooked in rural towns, but the answer is not just add green spaces and be finished. How far can a design go to help the movement of animals through these spaces, and allow people to fully experience nature no matter how small it may be?

Actor

Landscape Architects and Urban Planners

Action

A riverside park for the demonstration of successional ecosystems

Acted Upon

Creating connection areas in a rural town for people and animals

Theoretical Premise

In the book *Nature in the Urban Landscape* the author states that because of humans' minute interaction with nature, we have lost the art of knowing and appreciating nature and do not enjoy and feel in harmony with nature.

Conclusions

Ecosystems are being destroyed and changed to make room for people to live, creating completely new ecosystems. People need places to live, but it is affecting the natural movement and living spaces for the animals that also live in these areas.

Project Justification

The world's population is growing exponentially, and in order to provide housing for people to live in, the habitats that animals need are being destroyed. People look out for themselves and do not think of the implications they have on the local ecosystems.

NARRATIVE

Pride in one's community is prevalent and necessary in small towns in the Midwest. This pride is shown in residents' community involvement, infrastructure, and the traditions of the community. These are important in good designs, but the ecosystems may be overlooked and not celebrated to their fullest potential. This is important to examine, because when people and the natural ecosystems come together and work cohesively, there are only benefits shown in system.

User/Client Description

The users of this site will include but not be limited to the local residents, students, and tourists.

#1 Residents

When looking to incorporate the new designs in Grand Rapids, the residents of the town will have to be considered. New incorporations of the design will bring in animals, allow individuals to navigate through the town safely on foot, and provide an overall connection to the surrounding area.

#2 Students

The new riverside park will incorporate elements that will teach about the progression of a forest after logging and human interference with the ecological process. It will illustrate how long it takes for forests to become established around them.

#3 Tourists

Tourism in the town will also improve, because a key factor of city planning is to have something not only to bring tourists to town, but something that will keep them there for awhile or even overnight. The design will push the envelope of landscape architecture, and will create something different from other places people could go.

Major Project Elements

Scope

There are key components that need to be addressed when looking to further design the city of Grand Rapids, including the ecosystem, logging industry, residents, and the transportation through the city.

Ecosystem/Open Spaces

Grand Rapids is located between multiple lakes, including Hale Lake, Crystal Lake, Forest Lake, paper Mill Reservoir, and McKinney Lake, and riverways providing the ability to create green space connections that both peopel nad animals can use.

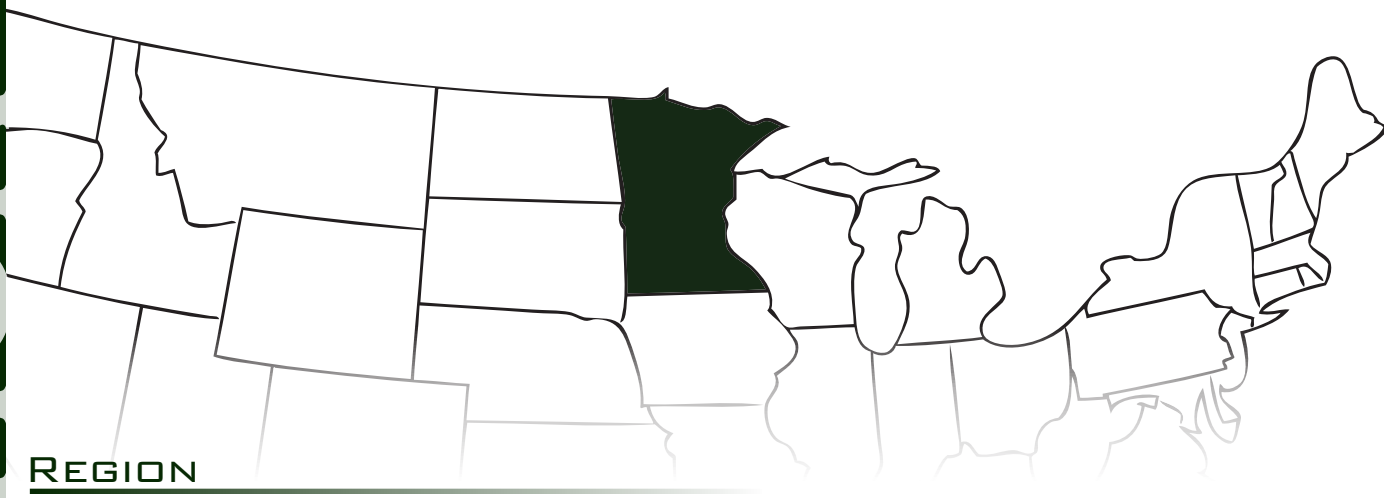
Residents/Tourists

The town of Grand Rapids has a great history that the residents are proud of. This will be shown with a new, bold design, that will also bring in more tourism, which in turn brings in more money to the community. When this is accomplished, the community will be able to invest more money into the town, bringing in more people and causing a chain of actions that will be good for the town.

Transportation

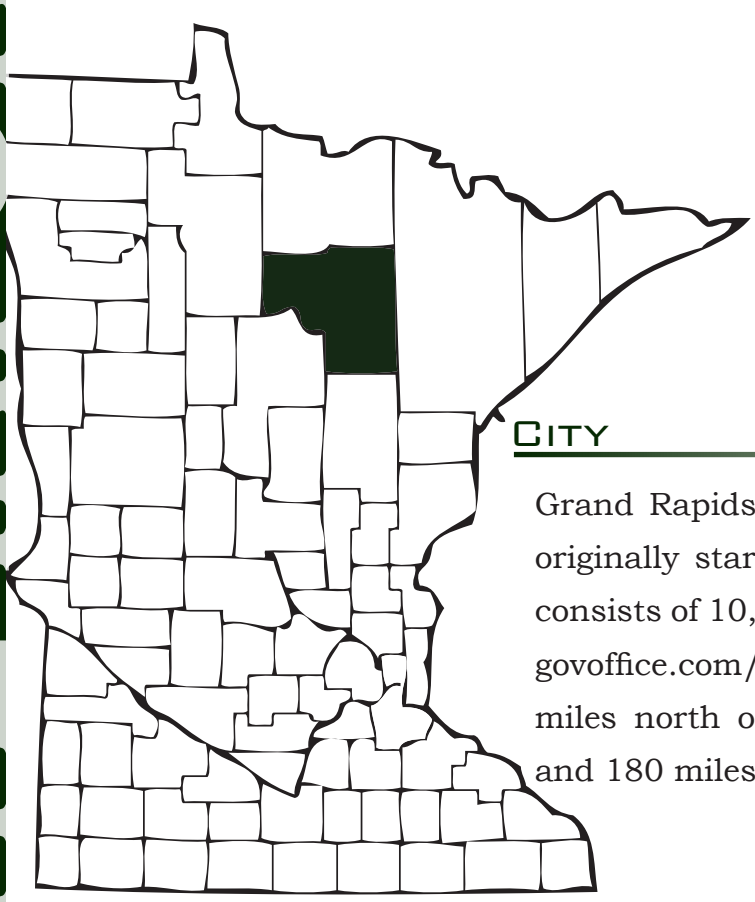
The existing town is built around the use of a car to get to all the amenities that Grand Rapids has to offer. The incorporation of public transportation is a good idea, but not yet necessary since the town is growing but not at that pace. To compensate for this, the addition of green connections at key points along the park perimeter will be a better investment of the city's time and money.

SITE INFORMATION



Region

This site is located in the north central portion of the country in the state of Minnesota. The state as a whole has an extreme climate, with temperatures ranging from -60 degrees during the winter to potential highs of 114 degrees in the summer. There has also been snow during every month excluding July, with an average of 110 days per year with snow cover of at least an inch or more (http://en.wikipedia.org/wiki/Minnesota).



City

Grand Rapids is located in Itasca County. It originally started as a logging town and now consists of 10,869 people (http://grandrapids.govoffice.com/). Grand Rapids is located 190 miles north of the Twin Cities in Minnesota and 180 miles east of Fargo, North Dakota.

Site Information

Site

The proposed site is located on the east side of Grand Rapids with the railroad and East Highway 2 to the north, Northeast 3rd Avenue to the west, the Mississippi River to the south, and Marry Ann Drive to the east. The eastern portion of the site consists of an existing 22-acre park called Riverside Park, and the west side is an underdeveloped area, where the city is looking to build more housing.

This location was chosen because of the existing park, which has old, large trees already established and large topography changes. This is essential when looking at changing the eye levels of visitors. There will also be a challenge trying to connect the housing units with the park, because Southeast 7th Avenue cuts right through the middle of the site.

Project Emphasis

Grand Rapids has an extremely rich history that the residents are proud of, and this thesis design will focus on this history while incorporating the necessary green connections throughout the community. As the design develops the key factor will be the ecosystem and how this along with the green connections has the ability to improve the overall health of the community as well as strengthen the pride the community has in itself.

Plan for Proceeding

Research Direction

Theoretical Premise/ Unifying Idea

Since humans have existed their dependence on nature has been prevalent illustrated by their interactions with it. This thesis will examine how these interactions have changed, and how they have ramifications for people.

Project Typology

I will look in depth at locations that engage people with nature in various ways, such as green walls or roofs, open and dense landscapes, greenery in the city. I will also examine how all interactions can be changed just by eye levels.

Historical Context

The city of Grand Rapids has its roots based in logging and the natural environment. It originally began as a logging town that used the Mississippi River to transport the logs to the larger cities that needed the wood. The name of the town is based on the 3.5 miles of rapids in the river that would limit some steamboat travel during the late 19th century.

The city was founded in 1872 as a logging camp and eventually founded into a town, and today has blossomed into a city of roughly 11,000 people. The city still has a strong tradition of its history, and it is celebrated yearly. A key building in the town is the Blandin Paper Mill, which is located along the river. This company has had a big impact on the community ever since it opened in 1902.

"Grand Rapids, Minnesota - Wikipedia, the free encyclopedia." Wikipedia, the free encyclopedia. N.p., n.d. Web. 5 Dec. 2011. <http://en.wikipedia.org/wiki/Grand_Rapids,_Minnesota>.

Site Analysis

There have been a few projects that have been proposed in the past that provided very valuable analysis of the town as a whole. I will also conduct personal interviews with people who have lived there for a substantial amount of time.

Research Direction

Design Methodology

There will be a mixed methods approach used throughout the research and design of this thesis. It will be a combined of quantitative data that will provide better directions about the design as well as where to look for further research. With a lot of broad research completed, qualitative research will be done that will focus directly on the site. These different kinds of research will focus case studies, but personal interviews will also be conducted to get the emotions forward and interaction with the site as well as the town overall.

The basis of the design idea will be explored through literature reviews of the various book and internet sources read. These readings will help me understand how they can be interpreted throughout the design process. This research will also include various case studies. These will be looked at and analyzed during the final design.

The information will be illustrated in various ways, including systems maps, GIS maps, graphs, and the traditional two and three dimensional image modeling.

Research Direction

Design Process

This project will be completed and compiled for people to find and further research on their own. The finished document will be compiled into a book as well as presentation boards for people to view at a presentation.

The document will also be preserved on the NDSU library website for people to access at their leisure. It will be preserved in book format to be viewed and will also be a digital document that can be downloaded.

The document can also be retrieved from the NDSU library website or by contacting me, and a digital copy or the printed document can be forwarded to another destination.

Upon finishing the thesis project during the spring semester, each portion of the project will be broken down, analyzed, and put back together to assure the proper information is present and can easily be found. The final project will be represented with a collaboration of boards, digital, and personal presentations of all the work that has been covered throughout the entire project.

Time Line

-Winter break: revise and further the research in thesis document.
-1/10-1/13: start the semester.
-1/23-1/27: 75 percent of research and analysis done and work on the writing.
-2/6-2/10: finalize research and analysis.
-3/5-3/9: establish over 50 percent master plan.
-3/12-3/16: spring break off of school and visit site for any last information.
-4/16-4/20: finish master plans and design details on boards for presentation.
-4/23-4/27: finalize thesis presentation: boards and formal review.
-5/12: walking with degree in hand.

Studio Experience

2nd Year (2007-2008)

Fall Semester: Kathleen Pepple

Tea Garden in Fargo, North Dakota

Battle Lake, Minnesota Halverson Park design

Spring Semester: Mark Lindquist

Fargo one-way street designs

Exterior smoking area at US Bank plaza Fargo, North Dakota

Winnipeg, Canada park design

3rd Year (2008-2009)

Fall Semester: Stevie Famulari

Regent, North Dakota park design

Regent analysis

Fargo, North Dakota street analysis

Spring Semester: Kathleen Pepple

Roosevelt neighborhood design in Fargo, North Dakota

United Tribes Technical College design in Bismark, North Dakota

4th Year (2009-2010)

Fall Semester: Jay Kost

Chicago analysis and city layout

Code development in Fargo, North Dakota

Duluth waterfront design

Spring Semester: Stevie Famulari

HESCO container designs

Jello Model

Phytoremediation project in St. Cloud, Minnesota

5th Year (2010-2011)

Fall Semester: Dominic Fischer

Red River Basin of the North analysis

Theoretical Premise

Nature Deficit Disorder

The phrase "nature deficit disorder" was coined by Richard Louv in his book *Last Child in the Woods*. Though it is not technically a medical disorder, the basis of it is still valid. The premise is that kids spend so much time inside and so little time outside, which is contributing to a wide range of behavioral disorders that are occurring more and more in the youth these days. Nature deficit is not only a childhood disorder. With the increasing need and push for technology even adults are losing touch with nature.

The idea of experiencing nature can be viewed in many different ways. It does not mean that a person has to find the deepest, darkest forest, prairie, or uninhabited spaces to get back in touch with the natural environment.

Theoretical Premise

In the book *Last Child in the Woods* Louv goes on and states, "Nature comes in many different ways: a new born calf, a pet that lives and dies; a worn path through the woods; a fort nested in stinging nettles; a damp, mysterious edge of a vacant lot." When looking at it like this, an experience can be as simple as noticing new weed shoots that are fighting their way through the cracks in the concrete to that deep dark woods that has never been touched. A person can spend a lifetime and still not experience every little crack and crevice that has its own story to tell.

There really is no one person at fault for this overall concept taking place, it is more of a trend that is taking place. The parents need to accept some of the blame for allowing their kids to just sit in the house. One excuse for not making them go outside is that they could get hurt, but they are kids, and just sitting in front of the TV is more harmful than

a little cut or bruise that will heal. It is part of childhood and learning. After talking to several adults, they all had very similar childhoods and spent most of their time outdoors. Whether it was their choice to be outside, or their parents making them get outside, they would spend a great deal of time outdoors.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Kids today also need to get out of the house. They do not need to have priorities to go outside, but they shoud just go out and see what the day turns into. Louv states that nature offers healing for a child living in a destructive place, a blank slate upon which a child draws and reinterprets the cultures' fantasies. Nature inspires creativity in a child by demanding visualizations and the full use of the senses. Given a chance, a child will bring the confusion of the world to the woods. Nature can frighten a child, too, and this fright serves a purpose by educating them. In nature, a child finds freedom, fantasy, and privacy, a place distant from the adult world, a separate peace.

Theoretical Premise

There are many different factors that contribute to this growing trend of individuals retreating from the natural environment. One issue is that the past generations had so many "natural" spaces that they could explore in the environment that kids today do not have. Past generations had vast spaces in which to spend time by themselves, with friends, and even their family members. These days, parents are often too scared to allow for their kids to get away from the house and let them experience what is in nature.

Where are all the electrical outlets?

When Louv interviewed kids about why they do not spend more time outside, one student stated that there are not electrical outlets outside, so why be out there. Basically, children rely so much on today's technology. That if there is not a place to plug in, then what can they do? There is so much technology that children are constantly surrounded by, that they feel they need it to keep them interested. When children get outdoors life slows down, and while there is a lot going on, children need to look

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or at least be creative to find it. Louv says that, "unlike television, nature does not steal time; it amplifies it." People's adventures need to be created, which will heighten their experiences.

There are moments when individuals finally get outdoors, but they often have to have some type of electrical equipment with them, such as music devices or even a computer. Even when they are trying to get away, they still cannot completely escape from technology.

Movement in the Midwest

One of the key components when designing a community layout is how people get from point A to point B and what they will encounter along the way. This is always studied no matter where the community is located, but there is a key difference when that town is located in the Midwest: the cold weather. Depending on the year, a certain park may be almost completely uninhabited for a long period of time because the design can amplify the natural cold effects that people hate during the winter months. When looking at this, the connections between the parks and the rest of the community become very important if we want people to move through these spaces in the winter months. Because of the weather, this space is not used for an extended period of time, but it is still important in context with the surrounding area.

Bold Designs

The various elements that really finish of a design can be used in many different ways. The simple, ordinary benches, lights, and path systems can be repetitive elements throughout a community, but this project looks at the small elements on a large scale. If a place requires a seat, instead of a normal bench, design a huge seating element that will help define that location as well as the community.


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If the designs are all the same the passersby will not notice the difference between this site and any other site that they may have been to. Instead, creating elements that truly define the space and are fully designed for that particular location will give the site more significance.


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In addition to the elements found in the spaces, the spaces as a whole are also important factors in the design. The vast majority of designs generally only look at the ground plane, and sometimes at the vertical plane (using a wall or just vertical plants), but this design will merge the movement with the experiences in the spaces.


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Conclusion

As designers we have the ability to create spaces that people can use and be places they can escape to. When dealing with nature deficit disorder, the spaces are needed not just to get individuals there, but to keep them there. With all the advertisements and other sources of entertainment that are constantly around individuals today, they need obstacles that will creatively catch their attention, if only for a brief second, to allow them the ability to understand the world around them.

When some people think of natural areas, they only think of spaces that have not been touched and manipulated by humans. While this is the "most" natural, there is nature all around, even in the biggest cities, and that is what people need to become aware of. From the most miniscule things such as a blade of grass fighting to grow through the smallest of cracks in the asphalt to the various animals that can be seen along a walk.

The basic foundation of this thesis is that these small encounters have a huge importance for the individuals moving through the space. The elements show what is taking place, elements that draw people in and allow them to spend time there, and this includes not only the people using the space, but the plants and animals that are also dependent on these spaces.

Theoretical Premise

With all the housing developments being build for people to live, taking over spaces that the natural environment thrived, we as designers need to keep in mind that nature has the upmost importance to all its inhabitant and needs to be celebrated. Green spaces are healthy for individuals, and they are also beneficial places to escape to. These spaces do not have to be fully designed and can still be experienced.


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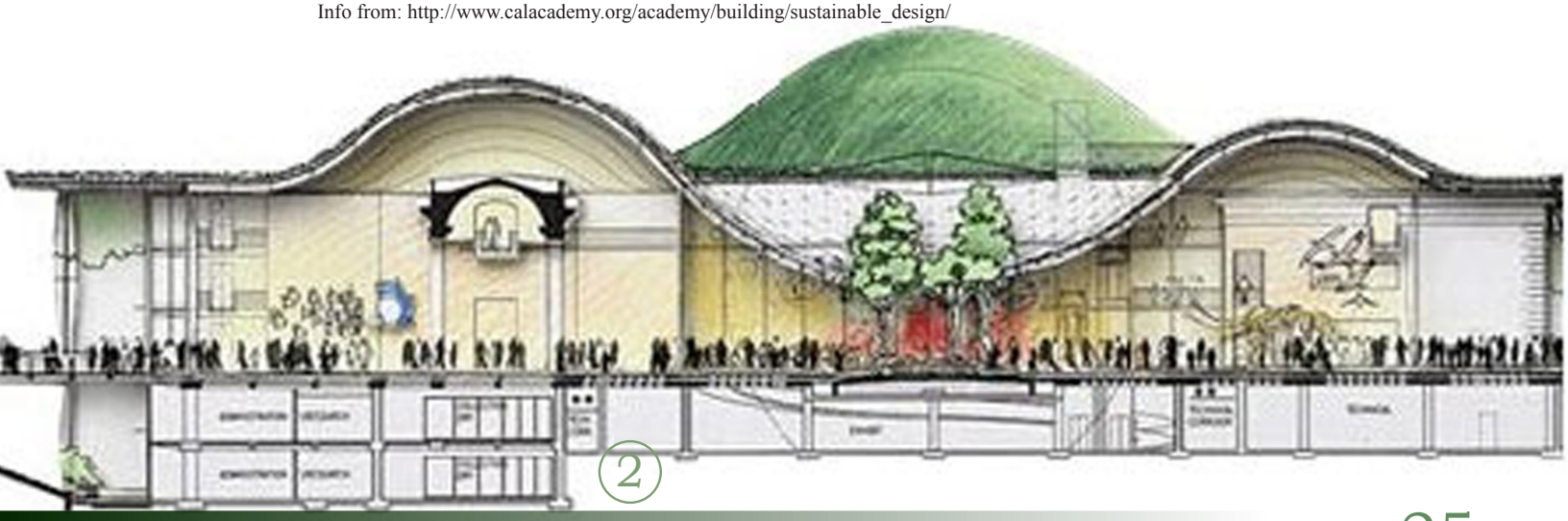
Case Study

California Academy of Science

The California Academy of Science is a science museum located in Golden Gate Park, San Francisco, California. It was originally established in 1853, but was completely rebuilt in 2008 to LEED certifications. It is now the largest public Platinum-rated building in the world with a score of 54 points. This particular museum attracts roughly half a million visitors a year. One of the key designs of this building is that it has a state-of-the-art green roof.

The green roof is 197,000 square feet, and on average, reduces the heat in the building by 10 degrees. The roof consists of 1.7 million native plants, including four perennial plants and five annual wildflowers. Another interesting design element of this building is the actual design layout of the roof. This is not a typical flat tar roof and it does not have a consistent pitch. The designers designed the roof to look like the natural land with various mounds on it. To keep the plants from sliding and falling off the roof, the designers

Info from: http://www.calacademy.org/academy/building/sustainable_design/



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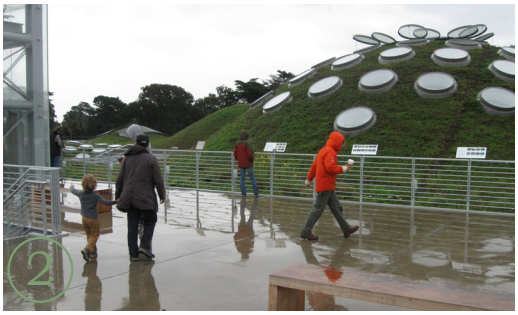
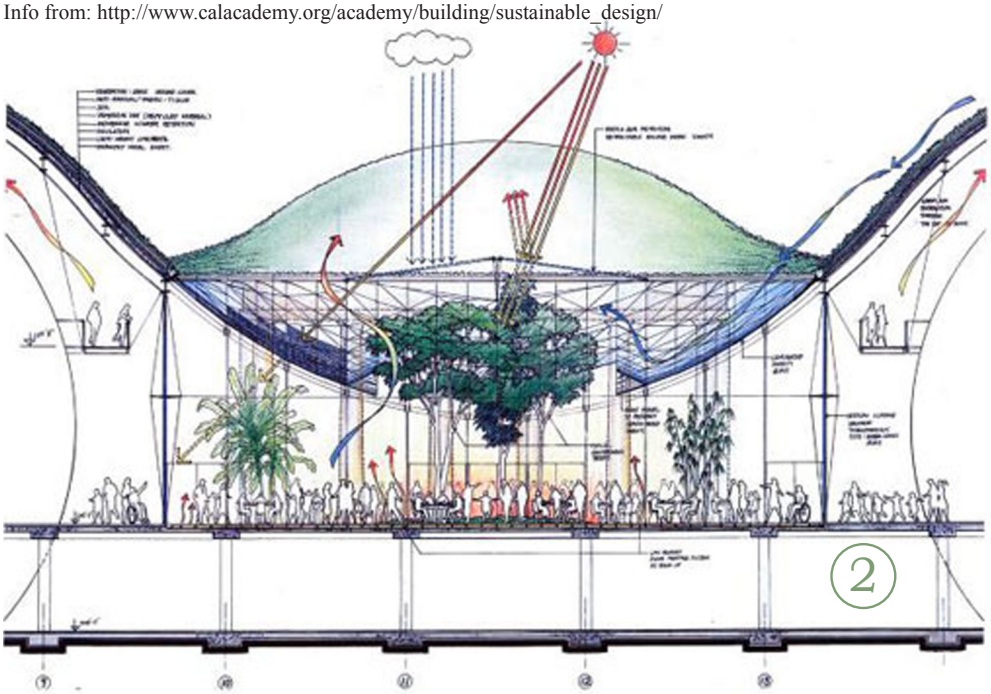
used 50,000 porous biodegradable trays that were laid out like tiles, which the roots would eventually grow through and hold it all together. This roof can be visited and explored whenever people go to the museum, which is a good thing because it helps visitors understand why taking extra time to incorporate more sustainable design is a better idea in the end.



The rooftop design allows people to get out in the air and creates viewing areas to see the butterflies and birds moving through the spaces. All the plants on the roof attract these kinds of animals, which aids in the viewing of the animals.

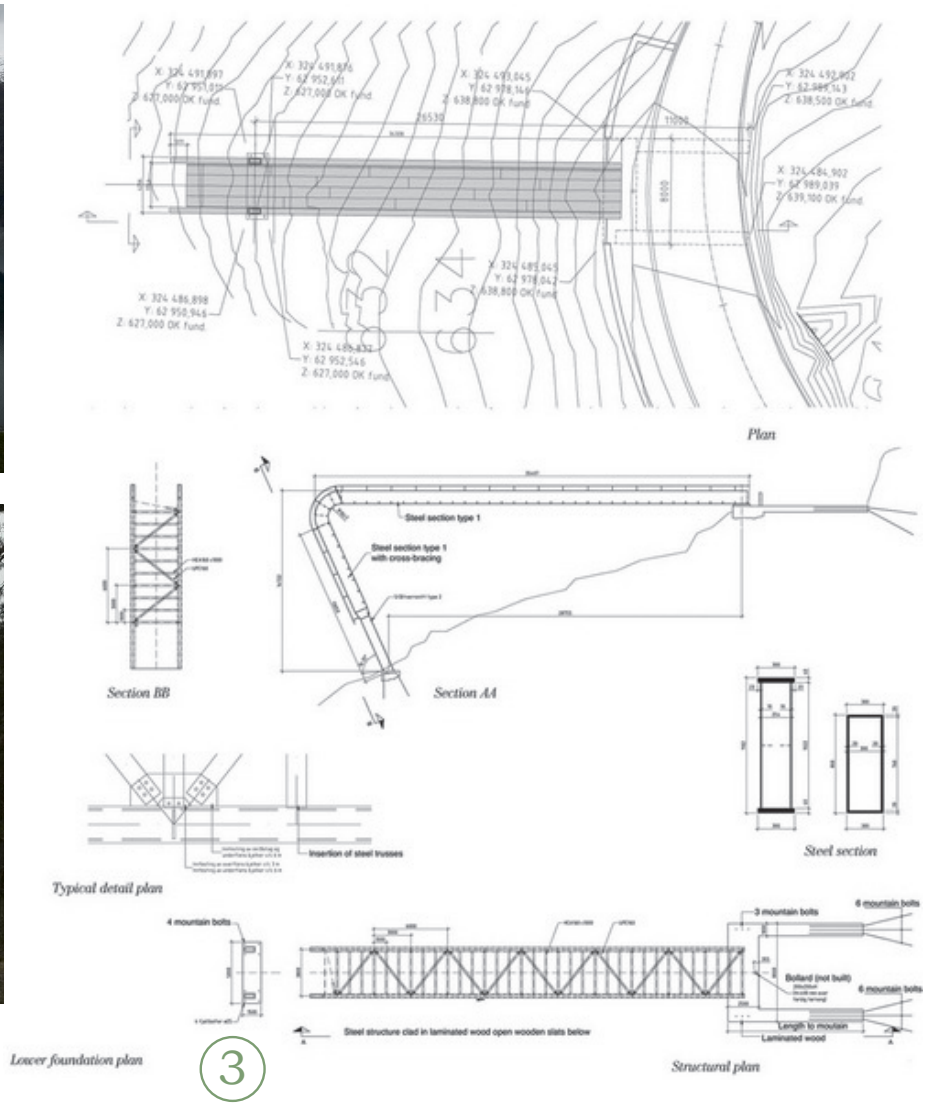
Info from: http://www.calacademy.org/academy/building/sustainable_design/



Lookout Point, Aurland

Located in Aurland, Norway, the design team of Todd Saunders and Tommie Wilhelmsen entered a competition which looked at the landscape of Aurland. They looked at the unique landscape that would occasionally be uninhabited for an extended amount of time. They looked at the surrounding mountains and lush forests with the rigid climate. With the amazing natural elements in this location, they wanted the design to have as little impact on this local ecosystem as possible. They said that nature was first and the architecture was second. The project was constructed in 2005 and finished in 2006, and now the place attracts people from all over the world. It is located three miles from Bergen, which is Norway's second largest city.

Info from http://www.arthitectural.com/saunders-arkitektur-wilhelmsen-arkitektur-aurland-look-out/



Lookout Point, Aurland

One key component of this project that will be incorporated into my thesis is that while it might have been slightly off the beaten path, they were still able to attract many visitors while keeping the local ecosystem in mind and keeping the designs impact to a minimum. The site location of my thesis is one that already has a lot of natural elements, and this project illustrates that I still have the ability to attract individuals.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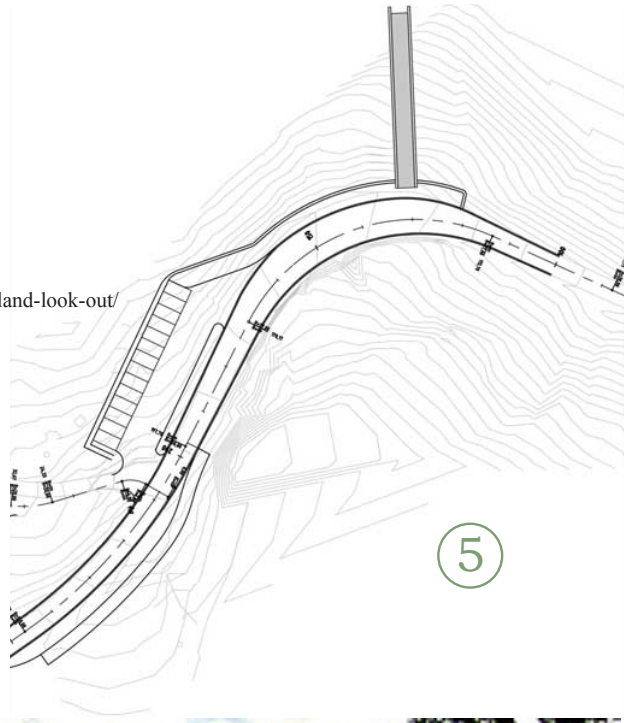
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Info from http://www.arthitectural.com/saunders-arkitektur-wilhelmsen-arkitektur-aurland-look-out/


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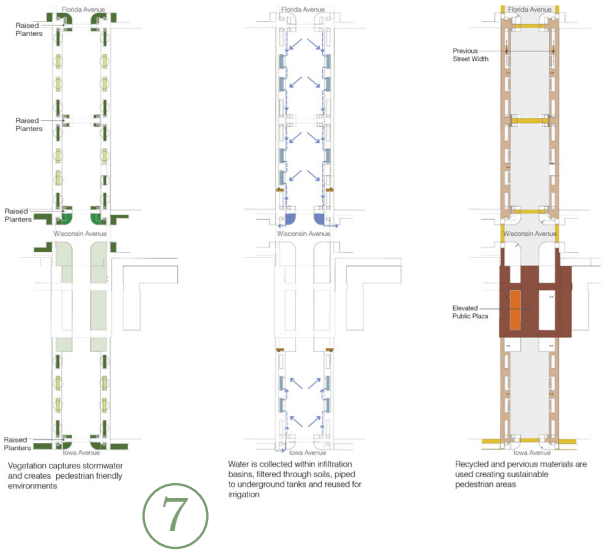
Greensburg Main Street Streetscape

This project had focused on redesigning the main street streetscape in the city of Greensburg, Kansas. The project consisted of four downtown blocks and was completed in 2009. The design really uses the idea of bringing nature into the city while making the streets sustainable. Some examples of this are the infiltration basins, raingardens, stormwater collection areas, high efficient lighting, wood furniture, and native paintings. The town of Greensburg has a population of 1,400 people, and it was a declining farm town with a struggling economy that saw the importance of this project. The city planners were able to implement the design after a F5 tornado destroyed 90 percent of the town. They now have a main street that is not only aesthetically pleasing, but has also pushed the rest of the town to incorporate some of the design principles that were put into place.

The main street in a city can be a major factor in the success of a community, and this project shows that incorporating green space throughout the street not only improves the look of the town but has functional value. After incorporating the design, the main street became the

backbone of the town. The town did not just incorporate simple raingardens and say that the stormwater would be improved. They helped, but the community also included concrete planters to amplify the aesthetic value, added wood benches to accommodate additional people in the town, native plantings to keep maintenance costs down, and incorporated pavers throughout the design. These were incorporated to help with water runoff; they were cheaper because they were reused, and can just the visual connections throughout the town.



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Info from http://www.asla.org/2011awards/480.html

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Summary

After looking at the various case studies, there were similar aspects that should be examined more in depth for this project. One similarity is that these projects where all designed to attract people to the site and keep them there. This can be done in a variety of ways, and these case studies are evidence of this. The California Academy of Science used nature to draw visitors into the site, and then provide learning opportunities when they got there. They did not have just one aspect that would bring people there, but had a variety of things to attract a variety of people to the site. Some people could see all animals at the site, others could see the roof and the nature up there, and others could visit for the learning, but when they get there the potential for them to stay and be intrigued with the aspects is heightened.

Lookout Point attracts people from the road. People who visit the site are people just traveling through the area, and people who would travel long distances just to encounter the design. An intriguing aspect of this design that would really attract people are the views and changes in levels. One aspect of this design that will be used is creating something bold that creates interaction between the people visiting as well as with the structure itself. This project was very successful at not destroying the local ecology of the area while creating an intriguing design. The idea of levels will be examined further. People looking at the same thing may interpret it differently just by their vantage point.

Summary

The future expansion of the design site will incorporate dense housing while keeping the connection to the parks and waterfront running through the city. With the elevation changes and multitude of hardscape located in the town, the use of raingardens and plantings around parking lots and street corners will be incorporated. This not only helps with the runoff that is going straight into the Mississippi River, but it will also help the aesthetic view. The city of Grand Rapids has started this idea in various locations, but the design will further push the idea and help create an overall theme for the town.

'A city! It is the grip of man upon nature. It is a human operation directed against nature, a human organism both for protection and for work. It is a creation.'

The City of To-Morrow and Its Planning, By Le Corbusier

Historical Context

Surviving with Nature

Throughout history the interactions between nature and humans have continuously changed with the evolution of the built environment. Even then, people knew the importance of nature and the impact that it had on the civilization. Dating all the way back to ancient Egypt, people build their city along the Nile River to help support their life.

They would grow their food near the river, and every year plan and allow for flooding to add nutrients back into the ground where their fields were located to keep growing crops to survive. They would also dig out channels to direct the water to where it needed to be. They understood that without this water source they would really struggle to survive.

Nature Indoors

These days people have various plants throughout their homes for aesthetics, because they like them, and other reasons, but this is not a new idea. As time has passed and communities have developed better and more sustainable ways to maintain their food, nature still set a vital role in the lives of these people. They had to maintain their needs for survival, but they also realized the emotional importance of the natural system in the built environment. When they built homes,

they would incorporate the plants in the courtyards. These would still be used as relaxation places for the occupants.

These spaces also showed status among the families because not everybody could have such places. If people were considered upper class and this is what they wanted and strived for, it showed that they were important to the individuals. Just like today, the inhabitants would use these spaces to get away.

People still want to have nature indoors, which is illustrated by having plants in the house. It may not seem like much, but a plant inside can make a big difference to the people in these spaces.

Not just your grandma's garden!

There are a variety of gardens and they have great importance throughout history. People will create gardens to grow food, add splashes of color to the area, and create different visual layers.


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There are also defiant gardens, which have played a large role in people's mental state. The fact that these plants should not be growing where they are but are fighting to do so helps encourage the individual to do the same. It also gives people a chance to escape from what is going on around them. An example of this is when soldiers in active zones create these gardens to help cope with their surroundings. Nicholas Saunders stays "a testament to the skills and fortitude of human beings under the almost unbearable pressures of modern war. Each item, however humble, is a potential symbol of the human spirit in extremis" (Defiant Gardens, pg. 49).

These gardens can serve more than just soldiers. They can be found in places that are going through tough times, creating spaces for people to escape to.

Gardens have also been prized by royal families throughout their history. Royals would spend a lot of money and have many people care of them. These spaces were not just little square gardens, but they have been so important that they would take up huge amounts of land. They would also include more than just plants; they would have vast path systems, water systems, some had intricate designs, and some were so large that they became like a building with various rooms.


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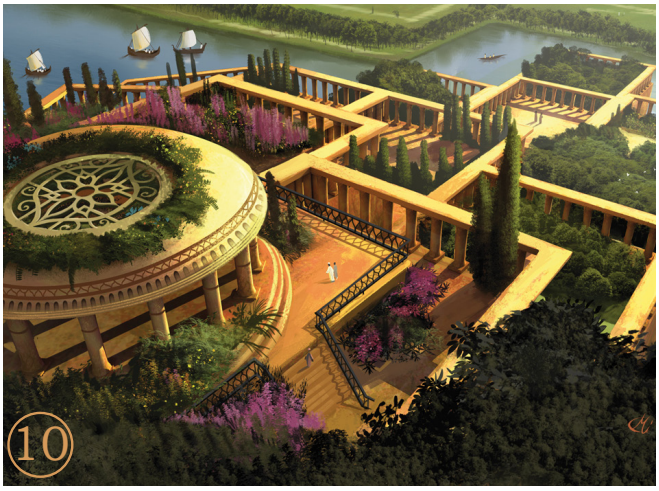
Green Roofs

In some larger cities there has been a big push for the implementation of green walls and green roofs, but this is not a new idea and it has been practiced throughout history. Green roofs have been around for thousands of years, and one of the most well known were the Hanging Gardens of Babylon, which were constructed around 500 B.C. These gardens were constructed to incorporate plants as well as trees on the buildings, providing aesthetic views.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In more recent history, people have created green roofs on their houses to serve as insulators, keeping them cool in the summer and warm in the winter. In the 1960's, the current design of green roofs that consists of layers was developed in Germany (http://www.ltu.edu/water/greenroofs_history.asp).

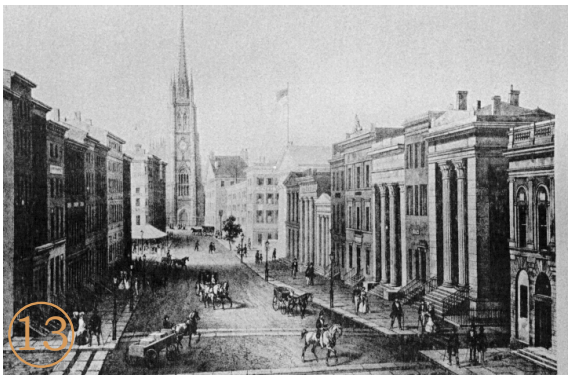

11

These are some ways that people have incorporated nature into their designs, not only for aesthetics but for functionality as well.


12

Park Movements

In the early years of cities, people created buildings and spaces that maximized the living potentials and heightened the numbers of people that could live in one location. They would take out all of the green and incorporate concrete and built structures. This approach was questioned, and it was found that parks in the city are beneficial and should be incorporated. One person at the forefront of this idea was Frederick Law Olmsted, who is considered that father of landscape architecture in America.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14

The original idea for the parks that Olmsted would propose and build were called Pleasure Grounds, which were typically large and located on the edge of cities. This kind of a park had a large push in design from 1850 to 1900. These parks were the locations of a lot of activities, but one issue with them was that they were located on the edge of the cities, which made it difficult for people to get to them whenever they wanted. With these parks located near the countryside, it was the view the parks would take on.


15

Historical Context


16


16


17

The park movement began to grow and, people started to push for the parks to be designed and built in the city, and blocks apart. This idea would be compatible with the idea of playgrounds for kids and create a new park movement called Reform Parks, which thrived from 1900 to 1930. These parks were smaller in size and did not take on the illusion of the countryside.

One similarity between the first two park systems is that they promoted a distinction between the social classes, and when Robert Moses became the commissioner of New York City's Park Department in 1930, he worked to change this. One way this was accomplished, is that they created standards and services to the suburbs and urban areas. The movement was called the Recreation Facility, which occurred place from 1930 to 1965 and was named based on the designs focusing on stadiums, parking lots, and asphalt ball courts.

Historical Context

The park movement changed again in 1965 with the idea of an Open Space System. This movement incorporated parks into the city, whether they were large or small sites, which allowed for recreation but also attracted visitors. Another key component of this system is that the design was not just based on one park, but instead an overall view of the community that had many green connections.

Looking at the progression of these park systems, after roughly 30 years the ideas are change and evolve. When looking at it like this, each generation learns from the previous generation but pushes their ideas and questions why things have been done the way they have. That is what this thesis will look at. The time might be now and the issue of nature deficit disorder is an issue that needs to be addressed.

Info from: Cranz, G., and M. Boland. "Defining the Sustainable Park: A Fifth Model for Urban Parks." Landscape Journal 23.2 (2004): 102-20. Print.

Project Goals

Project Goals

Intrigue

This thesis looks at the importance of the natural environment and how the community of Grand Rapids can encourage its residents and visitors to go outside and see what the natural environment has to offer. These days, there has been a growing trend of people just sitting and spending the majority of their time indoors. The design will create spaces that people can use to move throughout the community as well as spaces that they will use to escape from their everyday stresses. There will be areas where visitors can spend time exploring these natural elements.

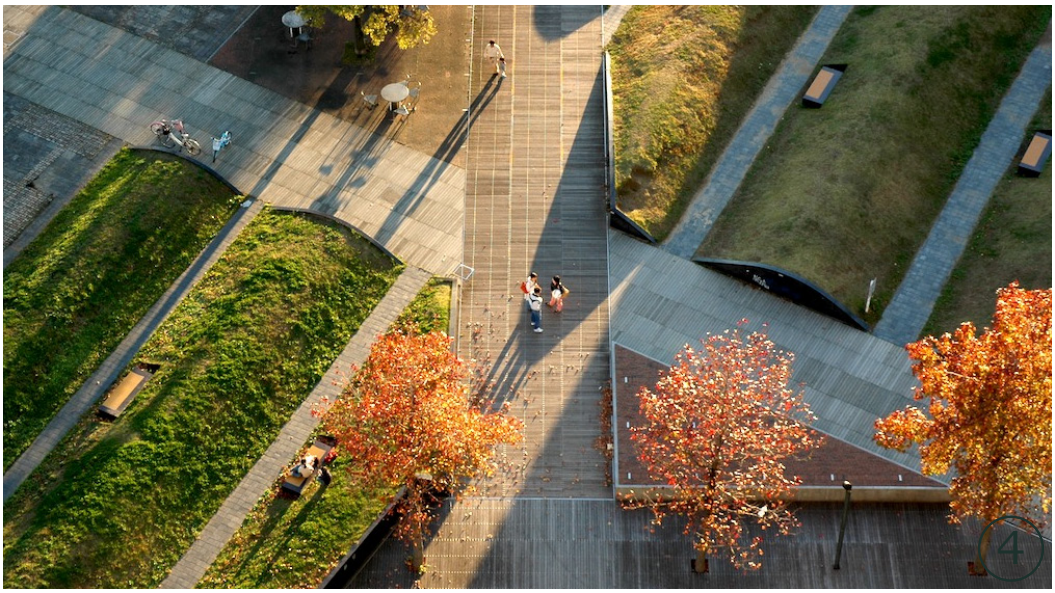
Connections

The town of Grand Rapids has some existing trail systems running through it, but the continued development of trails will encourage a larger role of pedestrian movement. These paths will also incorporate various signage at different levels so they do not become stagnant and people will not just walk past without even noticing. These elements will be a mixture of

historical information and location information. The actual signs will all be different based on their designs, the materials, and their various elevations. The streets and parking lots will also be required to have a certain amount of plantings to collect water runoff as well as create a unified aesthetic view throughout the town.

Bold Elements

The design in the park itself will consist of bold designed elements, but some of these elements will continue throughout the city of Grand Rapids. There is a large chair that already rests next to an intersection, but this is only the beginning and more will be incorporated.



Site Analysis

Narrative

Entering the site from the west, there is an encounter with the Blandin Paper Mill. City planners have designed the riverfront around it in this location, but is limited and really illustrates the historical as well as the present importance of the milling process to Grand Rapids. As residents move to the east they will be able to follow the existing trail system that has some interaction with the water. The movement along the riverfront in this area is nice, but just a block to the north illustrates one of the problems the community has: underutilized spaces.

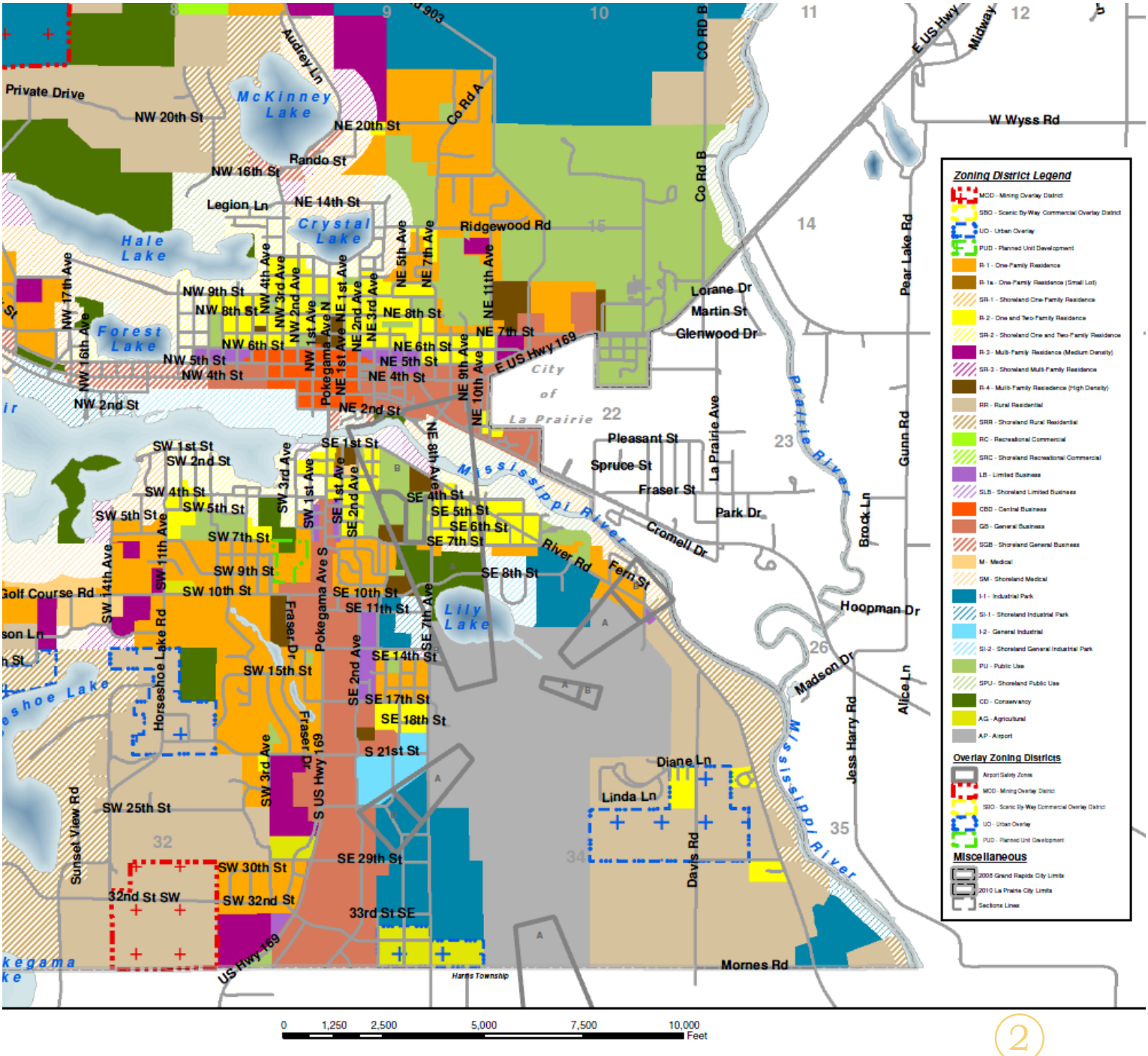
The city of Grand Rapids is overall successful, but there are small spaces that are not developed to their fullest. This space is just one example. It has great potential and is in a great location, so incorporating more living places as well as connections between the sites will only amplify the quality of the space.

The route then continues to 7th Avenue which must be crossed to get to Veterans Memorial Park. This road does not have a lot of traffic passing through, but it is still four lanes that must be crossed. This will need to be addressed in the design to help pedestrians along the path and create a stronger connection between the two sites.

Once in Veterans Memorial Park there is an abundance of pine trees throughout the park. They are very important moving forward and must not be destroyed. When in the site, there is vehicular traffic moving, but with all the well-developed vegetation the sound is not overpowering, and the park creates spaces in which people could get lost and get in touch with nature.

Located on the southern side of the river to the south is mostly residential spaces, and these people will be drawn into the site. There is a pedestrian bridge that they could use to get from the highly populated location to the more natural site.

Zoning


Zoning District Legend
MCD - Mining Overlay District
SBO - Scenic By Way Commercial Overlay District
UO - Urban Overlay
PUD - Planned Unit Development
R-1 - One-Family Residence
R-1s - One-Family Residence (Small Lot)
SR-1 - Shoreland One-Family Residence
R-2 - One and Two-Family Residence
SR-2 - Shoreland One and Two-Family Residence
R-3 - Multi-Family Residence (Medium Density)
SR-3 - Shoreland Multi-Family Residence
R-4 - Multi-Family Residence (High Density)
RR - Rural Residential
SRR - Shoreland Rural Residential
RC - Recreational Commercial
SRC - Shoreland Recreational Commercial
LB - Limited Business
SLB - Shoreland Limited Business
CBD - Central Business
GB - General Business
SGB - Shoreland General Business
M - Medical
SM - Shoreland Medical
I-1 - Industrial Park
SI-1 - Shoreland Industrial Park
I-2 - General Industrial
SI-2 - Shoreland General Industrial Park
PU - Public Use
SPU - Shoreland Public Use
CD - Conservancy
AG - Agricultural
AP - Airport
Overlay Zoning Districts
Airport Safety Zone
MCD - Mining Overlay District
SBO - Scenic By Way Commercial Overlay District
UO - Urban Overlay
PUD - Planned Unit Development
Miscellaneous
2005 Grand Rapids City Limits
2010 La Prairie City Limits
Sections Lines
McKinney Lake
Crystal Lake
Hale Lake
Forest Lake
Lily Lake
Mississippi River
Prairie River
City of La Prairie
Harris Township
Private Drive
NW 20th St
NE 20th St
Audrey Ln
Co Rd A
Rando St
NW 16th St
Legion Ln
NE 14th St
Ridgewood Rd
NW 9th St
NW 8th St
NE 8th St
NE 7th St
NW 6th St
NE 6th St
NW 5th St
NE 5th St
NW 4th St
NE 4th St
NW 2nd St
NE 2nd St
E US Hwy 169
Lorane Dr
Martin St
Glenwood Dr
Pleasant St
Spruce St
Fraser St
Park Dr
Cromell Dr
River Rd
Fern St
Hoopman Dr
Madson Dr
Alice Ln
Jess Harry Rd
Pear Lake Rd
Gunn Rd
Brock Ln
La Prairie Ave
W Wyss Rd
E US Hwy
Midway
CO RD B
Co Rd B
SW 1st St
SW 2nd St
SW 4th St
SW 5th St
SW 7th St
SW 9th St
SW 10th St
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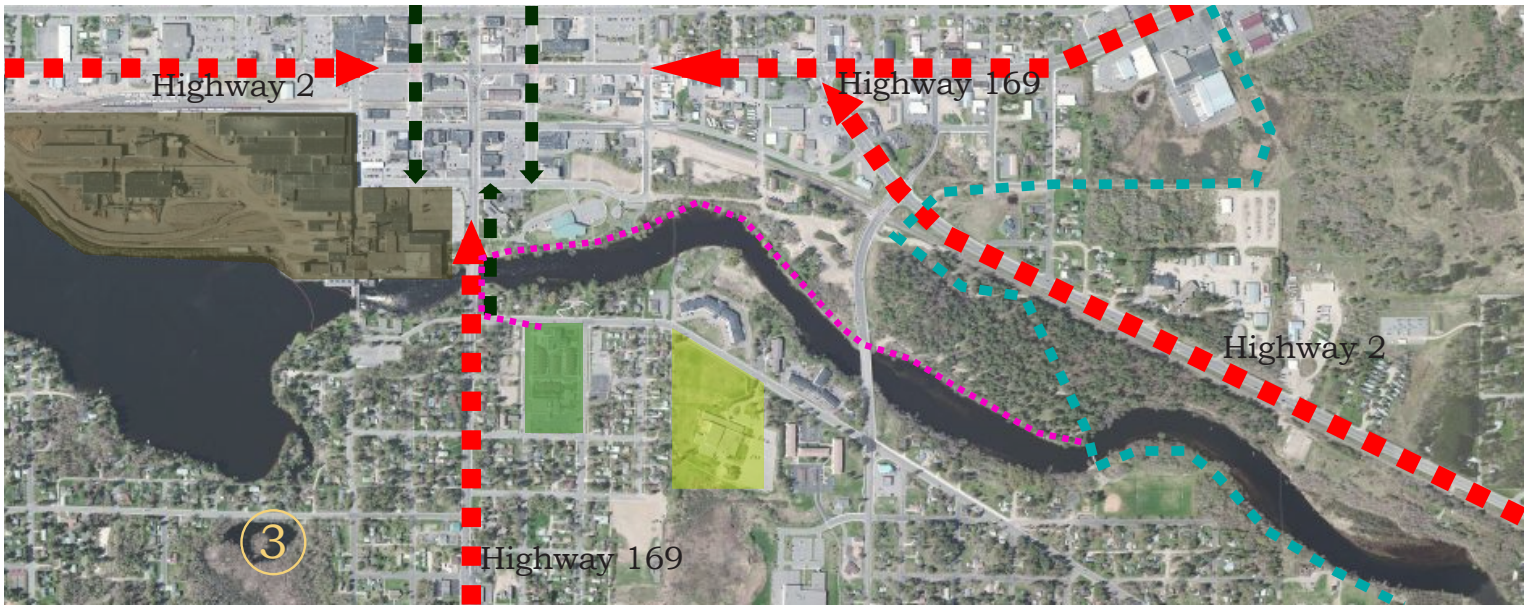
SE 4th St
SE 5th St
SE 6th St
SE 7th St
SE 8th St
SE 10th St
SE 11th St
SE 14th St
SW 15th St
SE 17th St
SE 18th St
S 21st St
SW 25th St
SW 30th St
SW 32nd St
32nd St SW
33rd St SE
SE 29th St
Golf Course Rd
Horseshoe Lake Rd
Fraser Dr
Pokegama Ave S
Pokegama Ave N
SW 1st Ave
SW 3rd Ave
SW 11th Ave
SW 14th Ave
SE 1st Ave
SE 2nd Ave
SE 7th Ave
NE 8th Ave
NE 9th Ave
NE 10th Ave
NE 11th Ave
NW 17th Ave
NW 16th Ave
NW 4th Ave
NW 3rd Ave
NW 2nd Ave
NW 1st Ave
NE 1st Ave
NE 2nd Ave
NE 3rd Ave
NE 5th Ave
NE 7th Ave
S US Hwy 169
SW 3rd Ave
Sunset View Rd
Davis Rd
Diane Ln
Linda Ln
Mornes Rd
US Hwy 169
0
1,250
2,500
5,000
7,500
10,000
Feet

Circulation

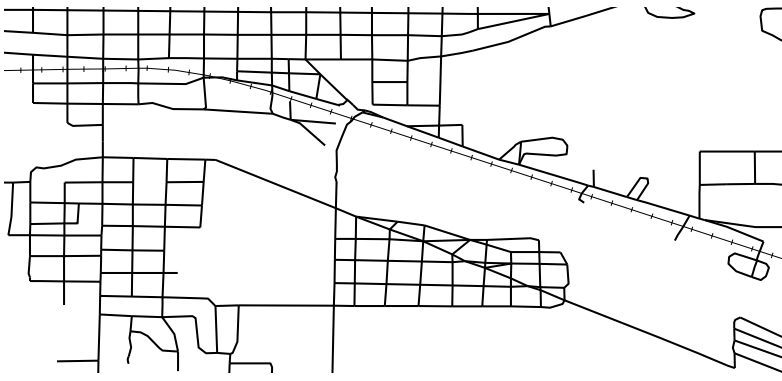


Major roads
Pedestian/Bike
Regional Trial
Riverfront Trail

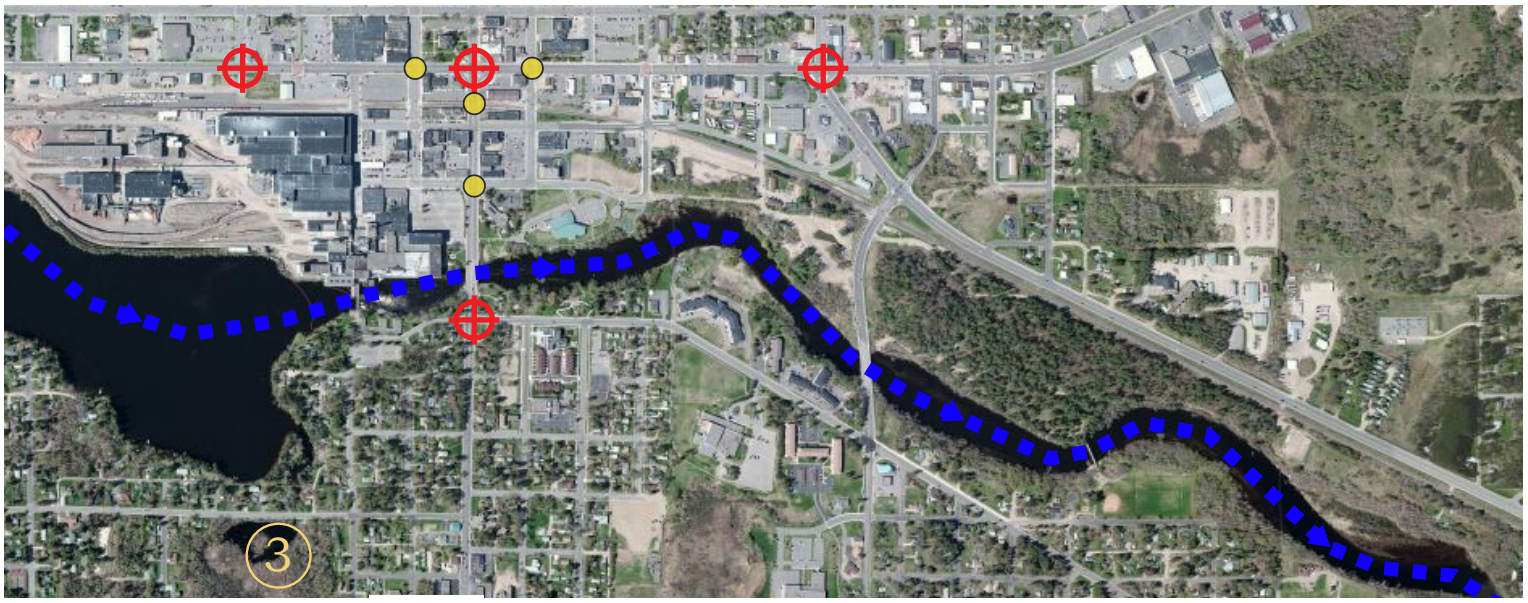
Hospital Redevelopment
Blandin Paper Mill
Itasca County Family YMCA

Highway 169 is the major road that brings people from the cities and runs north through the site. Highway 2 is located to the north running east and west. There are existing regional paths throughout the town that will be incorporated into the design. The city of Grand Rapids is strongly pushing for people to get outside, so these paths are used both in the summer and winter by walkers, joggers, and even cross country skiers.

There is a path that runs through the green spaces along the river, but they end in various locations. The city has already proposed additional design work to be done in the area, which illustrates the community's desire for more of these.



Intersections



Key Intersection

Important Pedestrian Intersections

Water Movement

With the high volume of vehicular traffic on highways 2 and 169, the intersections become a key place to help move pedestrians from downtown to the proposed site. There are changes in the intersections to really define that spaces for them, but this is not in all of the key areas.

The water movement can be used to help bring people from downtown to the site. There are also two vehicular bridges spanning the river in this area of the city, as well as a pedestrian bridge.

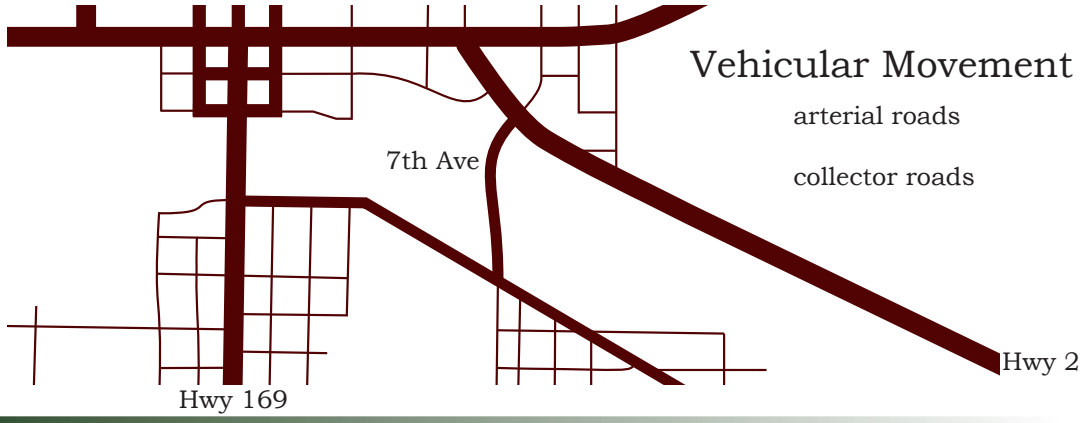
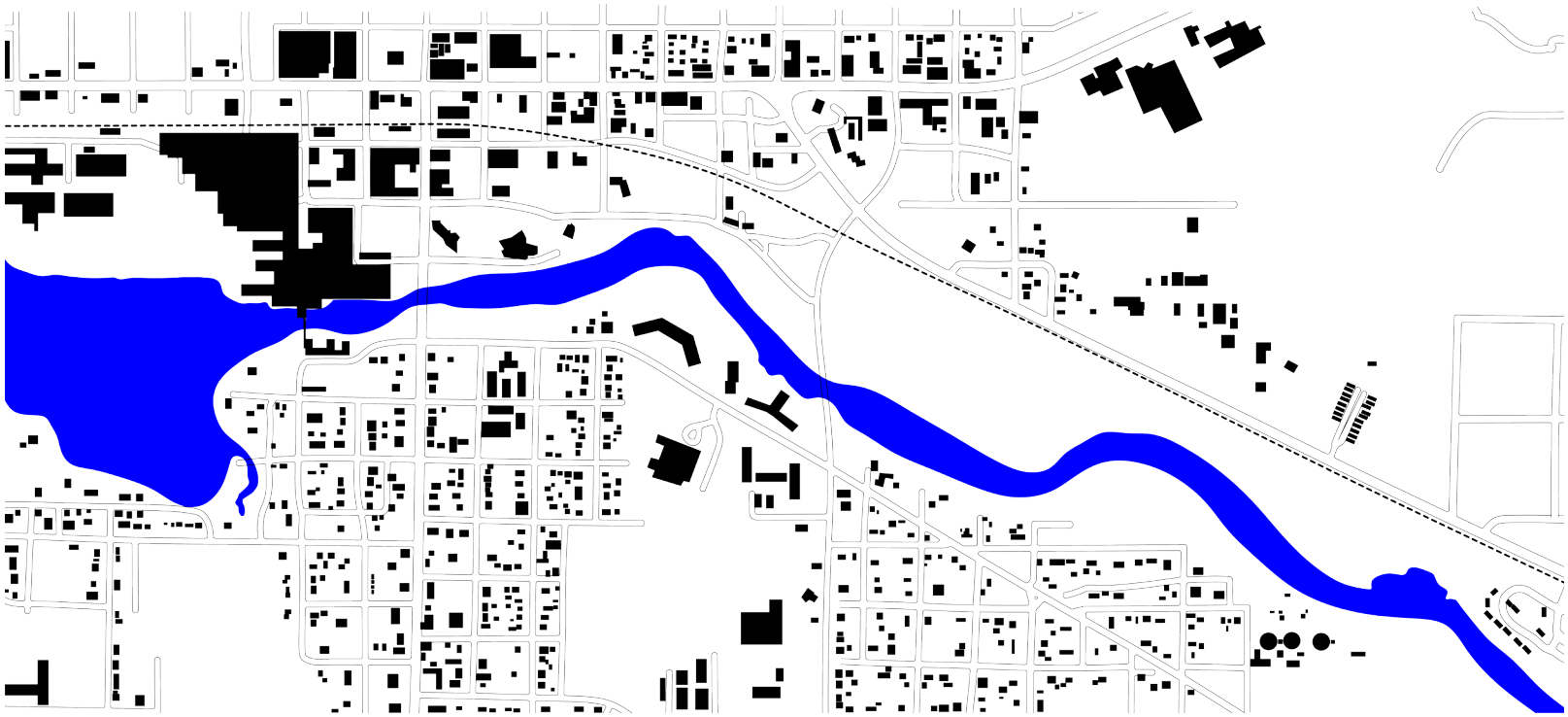
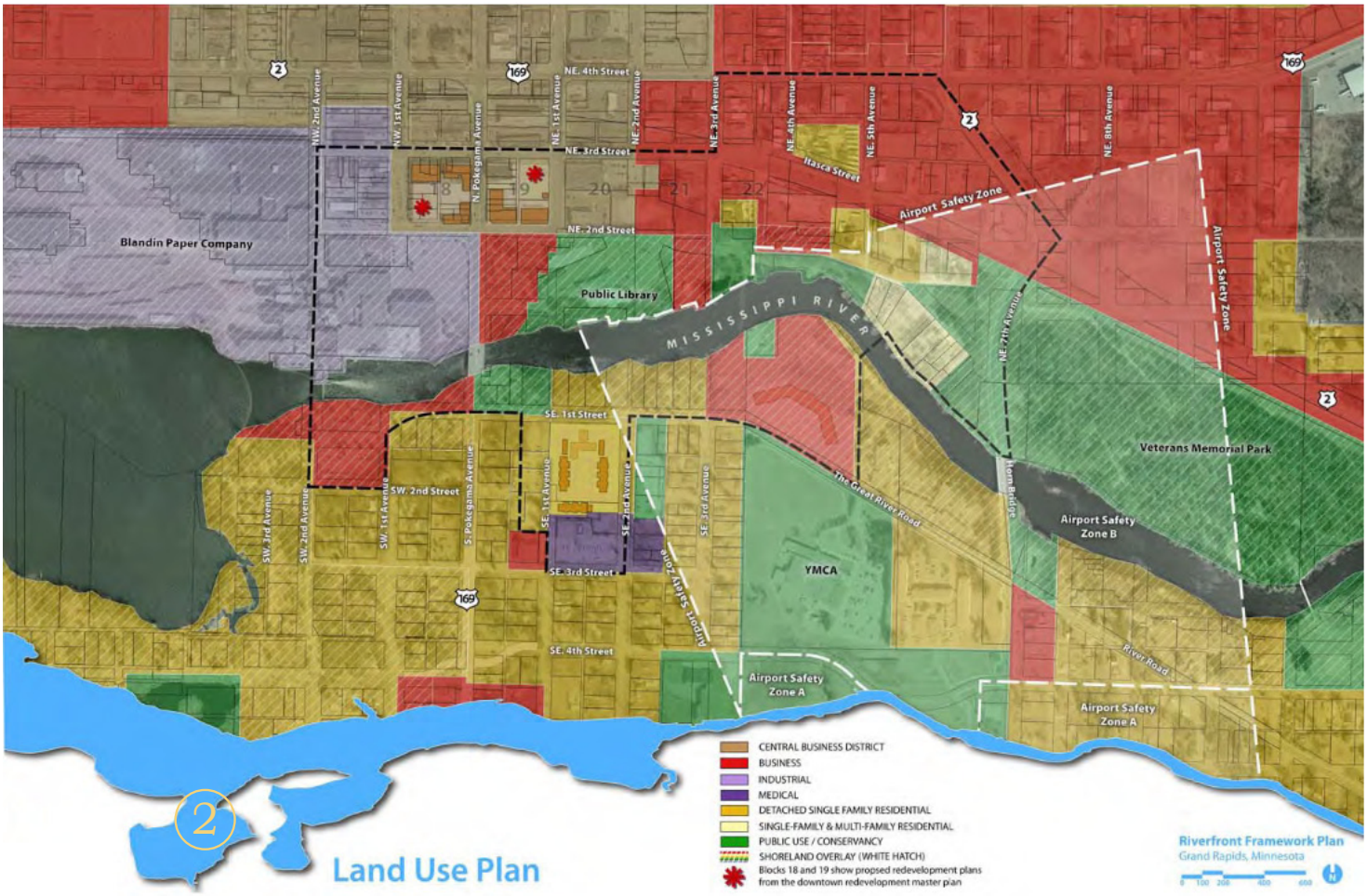


Figure Ground



The Mississippi River splits Grand Rapids roughly in half into a northern and southern half. North of the waterway consists of large industrial buildings with various shopping centers. The south consists of higher density housing.

There are not many built structures along the river corridor other than the bridges and the Blandin Paper Mill. The built environment decreases when moving to the east.



Source: City of Grand Rapids.

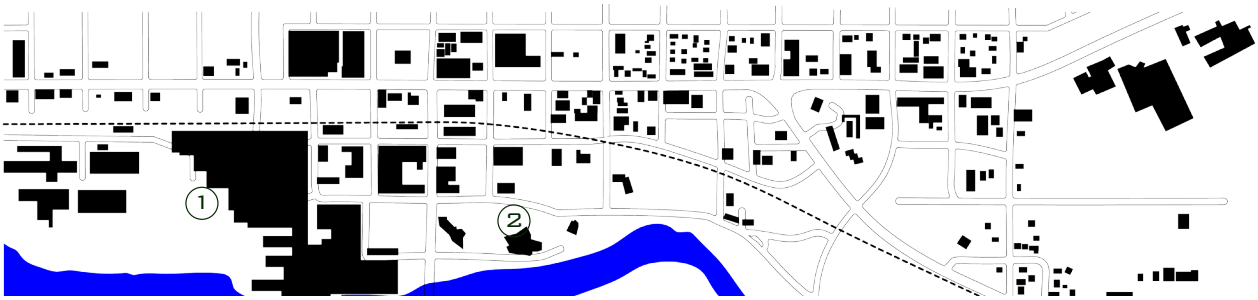
The site is mostly for public use. The eastern portion has some areas that are considered business. There are also some detached single family residential as well as single family and multi family residential.

The proposal will consider these and look into further developing the living arrangements in this location. Instead of just adding very dense housing units, the design will incorporate multi-housing units that can utilize the natural elements that are provided.

Significant Locations

1 Blandin Paper Mill

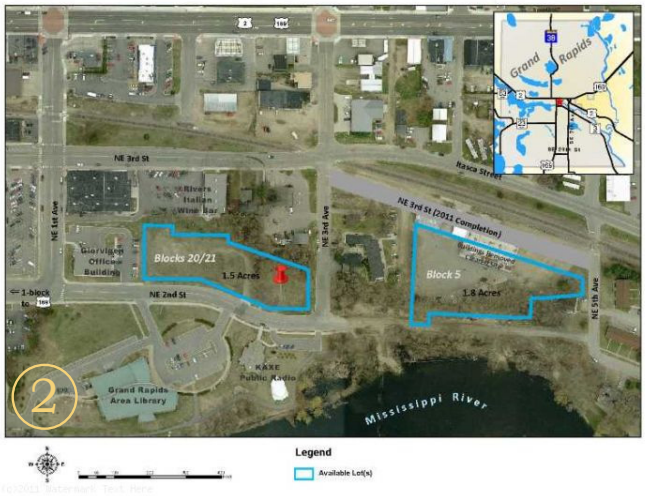
First established in 1902, the mill produced newsprint with one paper machine at 200 feet per minute. Today it employes 500 people and produces 360,000 metric tonnes annually. (http://www.upm.com/)



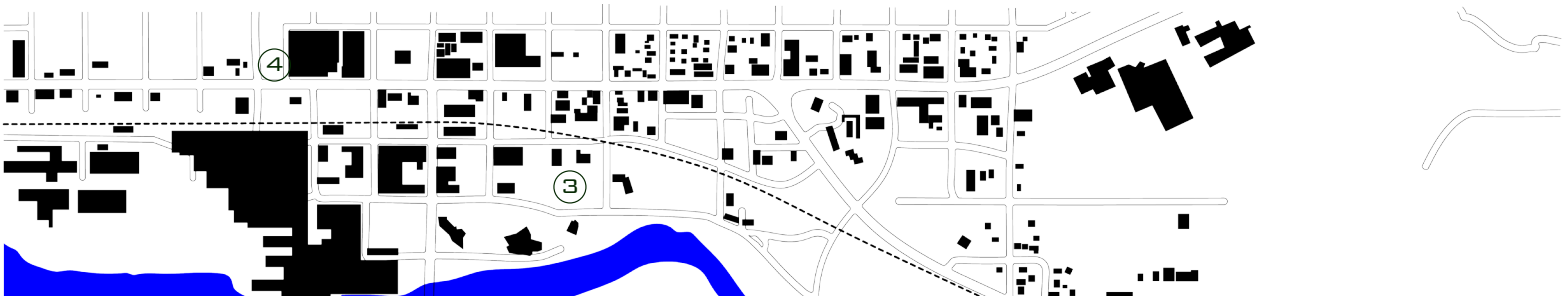
2 Grand Rapids Public Library

The Grand Rapids Public Library is located just to the west of the proposed design site. This is important when looking at furthering the design because there are more than 15,500 library cardholders that make nearly 170,000 annual visits. The library holds over 80,000 items that people can look at (www.grandrapids.lib.mn.us). This can help with the further development because the people who visit the library can check out books and read them outside. Creating a great place for people to by themselves to read. New housing developments will also increase the number of people in this location.

3 Blocks 21 and 22



Located to the north of the library, the city of Grand Rapids is looking to develop this site in the future. These areas are in the far west section of this thesis project. These spaces are close to the library and have great views of the Mississippi River to the south. The zoning in this area allows for moderate to dense, vertical development with zero lot line setbacks, and permits a diverse array of commercial, retail, hospitality, cultural, and residential uses. The space is for sale at a rate of $4.25 per square foot and has a lot size of 1.5 acres. (http://www.grandrapidseda.com/index.php/Property/Blocks-20-21-Site-3.html)



4 Central Square Shopping Mall

Located farther west but still within walking distance of the site this mall gives visitors an enjoyable shop near the site.

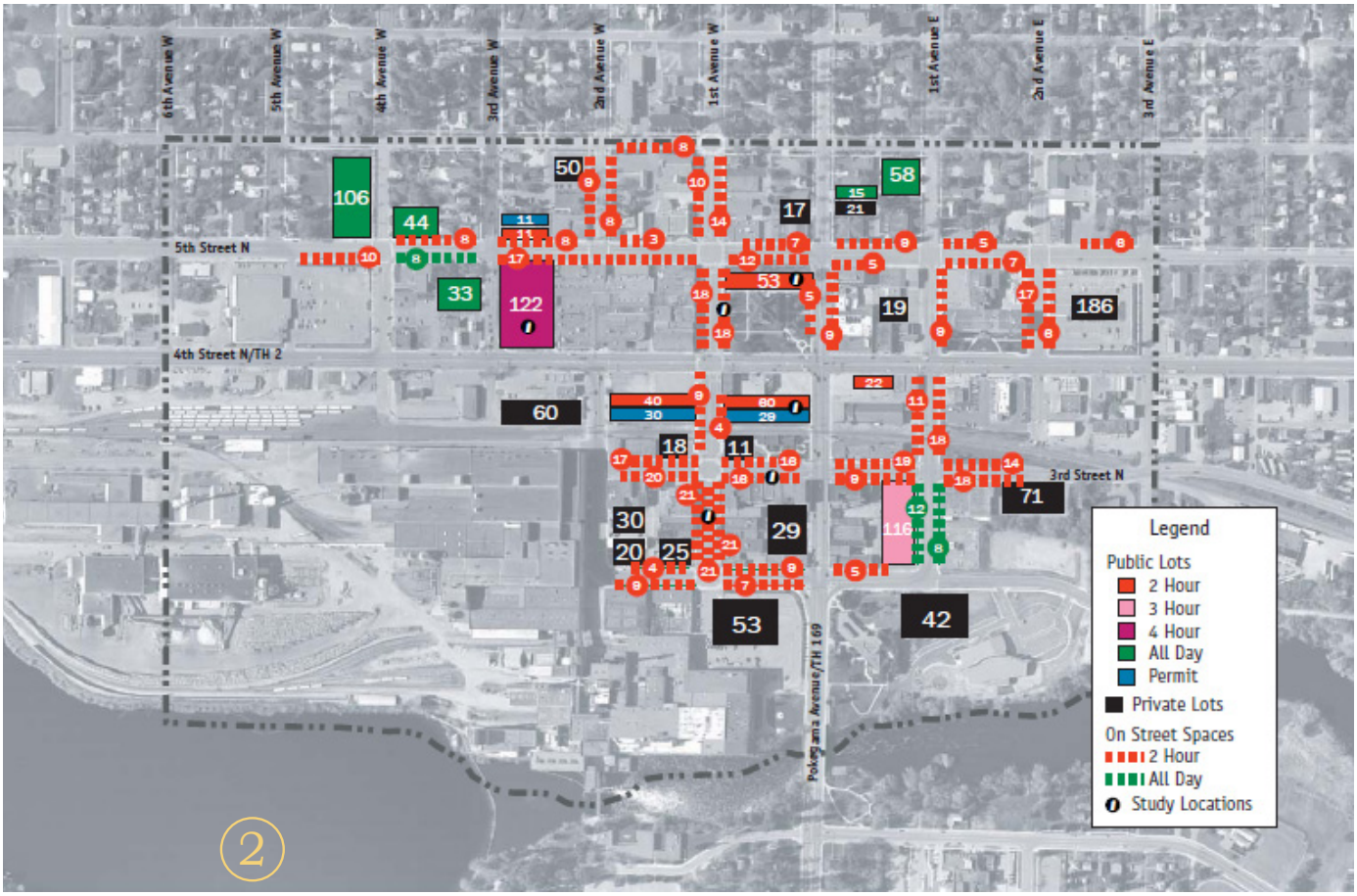
5 Pokegama Dam

Located on the western side of Grand Rapids, the Pokegama Dam controls water into Pokegama Lake, which that works its way past the mill, back into the Mississippi River, and past the proposed site. The dam was originally constructed out of wood in 1885, but was reconstructed out of concrete in 1905. The dam is 225 feet long and contains 13.8 feet sluiceways and one 12 foot log sluice. There is a 4-foot elevation drop from the entrance to exit of the dam. This location has a park and walking trail that is used throughout the year. (http://www.mvp.usace.army.mil/recreation/default.asp?pageid=147)

6 Forest History Center

The city of Grand Rapids has a strong sense of history and an example of this is the Forest History Center. Located in the south western region of the city, this place illustrates the intense work that the original loggers of the community had to do. The place is called a living history camp and shows visitors the process used in the early 1900's of getting the logs from the forest, down the river, and to the sawmill. The log drivers live on the river in order to get the lumber to the mill. They had barges floating down the river that they would stay in as the voyage downstream took place. This was home and they would walk on the floating lumber to avoid log jams.(http://www.mnhs.org/places/sites/fhc/visitfhc.html)

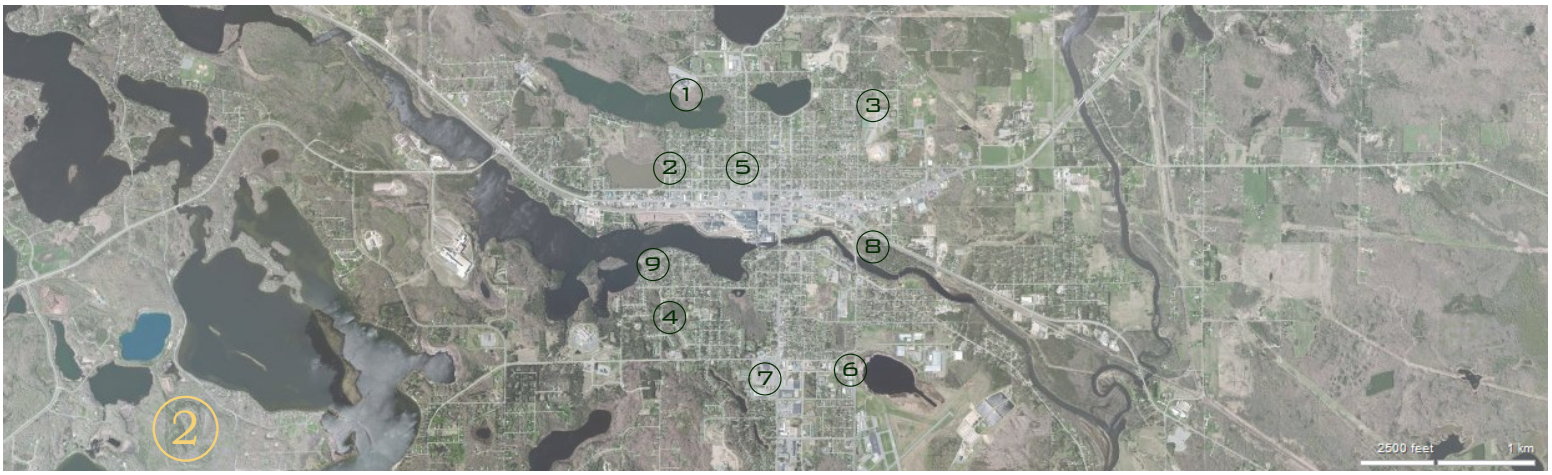
Downtown Parking



The vast majority of parking in this area is 2 hour street parking. There is also private parking lots the closer a person gets to the site. With the new design creating more interactions with people for long periods of time, the issue of parking will need to be addressed, and more parking may need to be added.

The other option is to strategically select a couple different streets and change the times on them. The project is designed to reduce the amount of vehicles and promote walking, so adding more parking lots can be explored, but designs for them have to be specific.

City Parks



1 American Legion Memorial Park

Amenities Include: Legion Baseball Field, Lighted Cross Country Ski Trails, IRA Civic Center, Conifer Field, Cody Siem Memorial Skateboard Park, Picnic and Park area, Horseshoe Courts.

2 Blandin Beach Park

Amenities Include: New Playground and Park Area, Picnic Area, Fenced Beach Swimming area, and Raft.

3 Grand Rapids Sports Complex

Amenities: 4 Softball Fields (3 lit), Regulation Soccer Field, Fast Pitch Field, Practice Area, Picnic, Park /Play Area, and Concessions.

4 Grussendorf Park

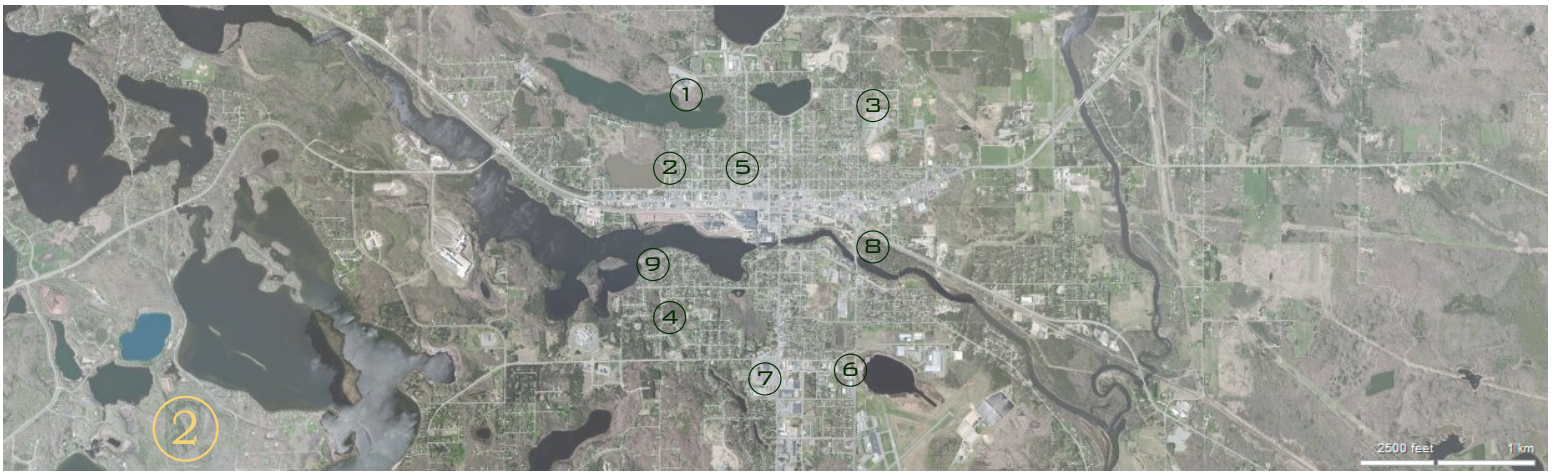
Amenities Include: Playground, Picnic and Park Area, Lit Tennis Courts (2), Softball Field, Hard Court Area w/ Basketball, Outdoor Hockey Rink, and Warming House.

5 Lost Creek Park

Amenities Include: Playground, Picnic, Park Area, and Creek Runs through park.

Info from: http://grandrapids.govoffice.com/

City Parks



6 Maplewood park

Amenities Include: Playground, Picnic, and Park Area

7 McGowan Park

Amenities Include: Playground, Picnic, Park Area.

8 Veteran's Memorial Park

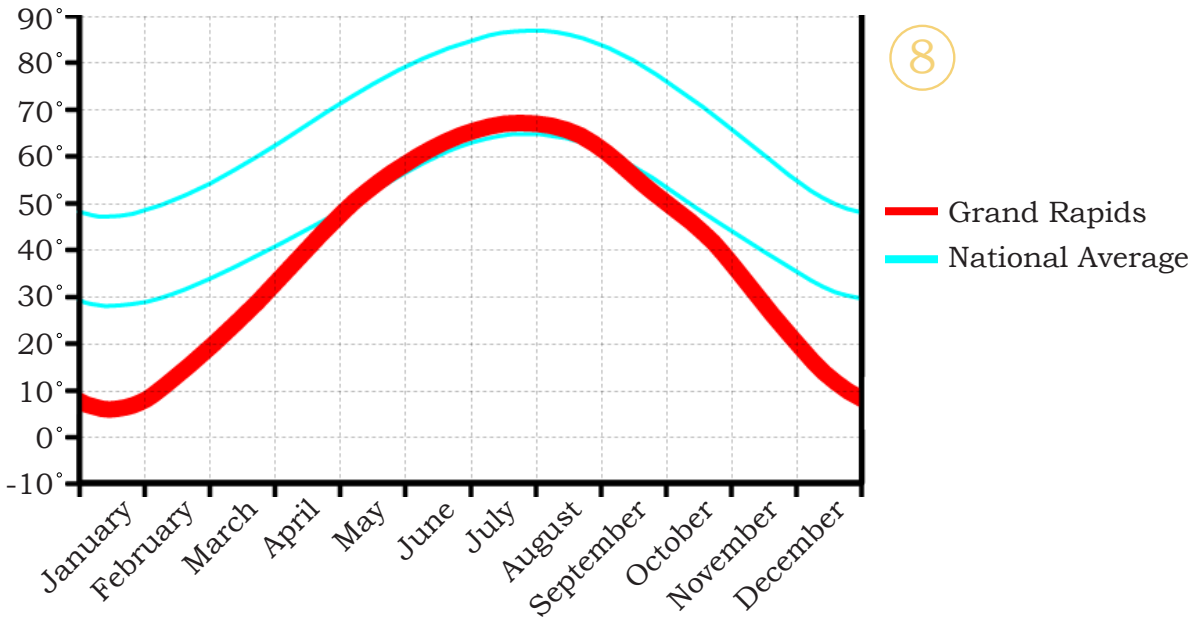
Amenities Include: Playground, Picnic and Park Area, 2 Sheltered Pavilions, Electricity, Water, Horseshoes Court, and Mississippi River Crossing Access.

9 Sylvan Landing

Amenities Include: Picnic, Park Area, Boat Landing, and Fishing Pier

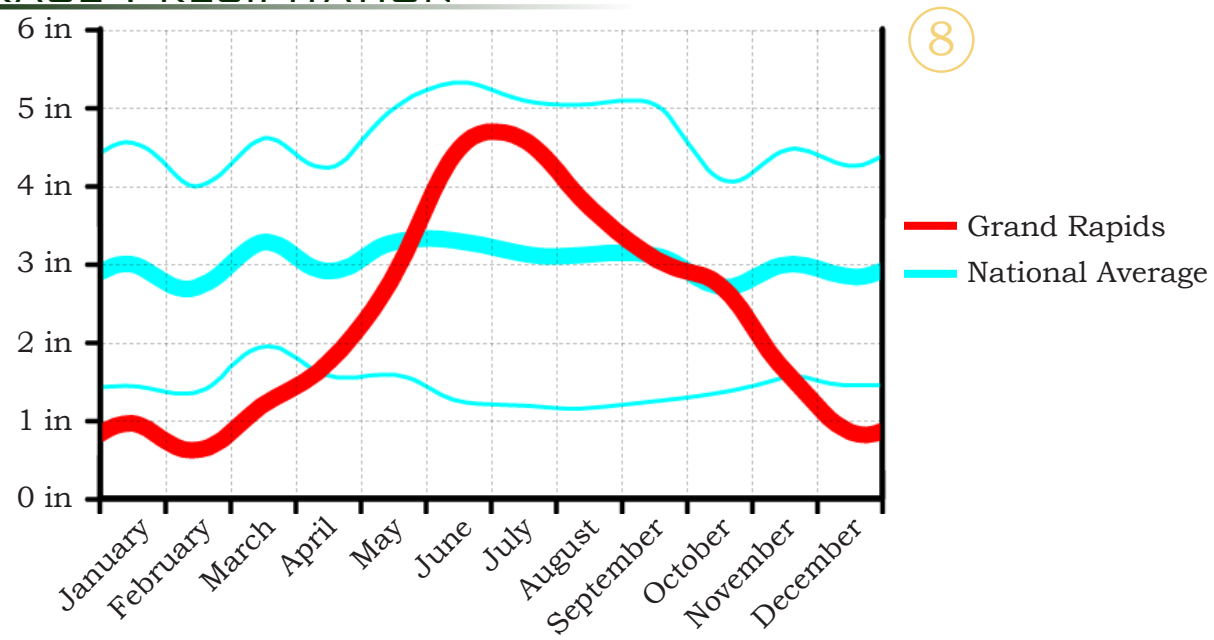
Info from: http://grandrapids.govoffice.com/

Average Temperature



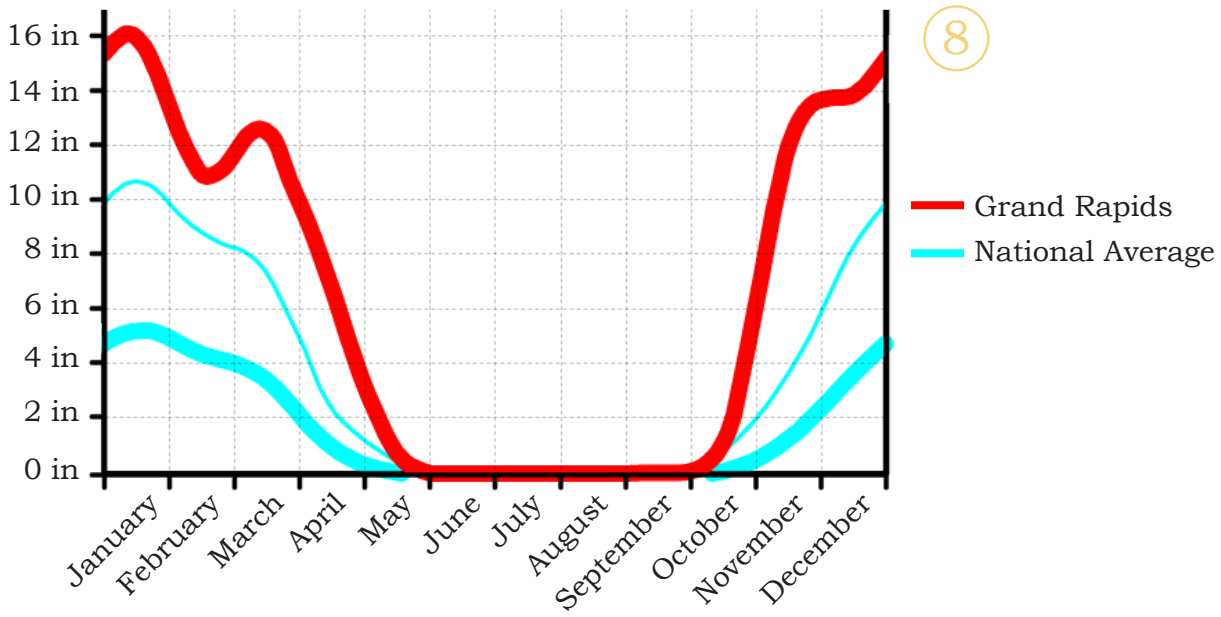
The temperature of the site is similar to other cities in the Midwest, with cold winters and warm summers. The vegetation will be beneficial because it will help cool during the summer, and hold heat during the winter.

Average Precipitation



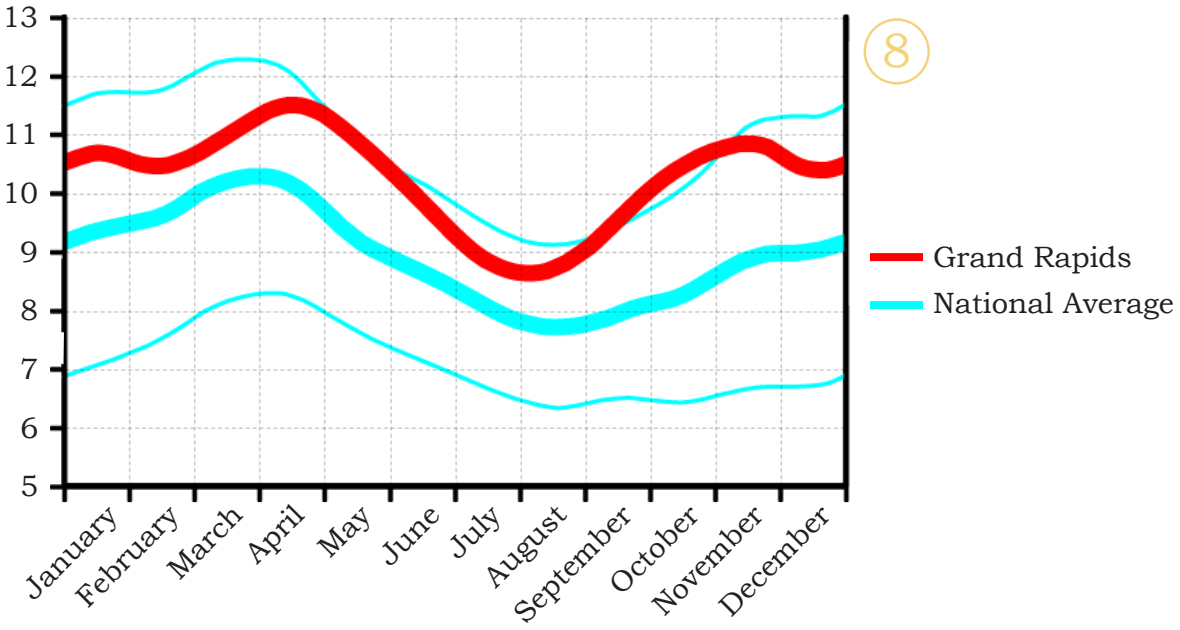
The average precipitation is similar to the surrounding region, but during the summer there is slightly more than average. With all the slope on site, the problem of erosion is always present.

Average Snowfall



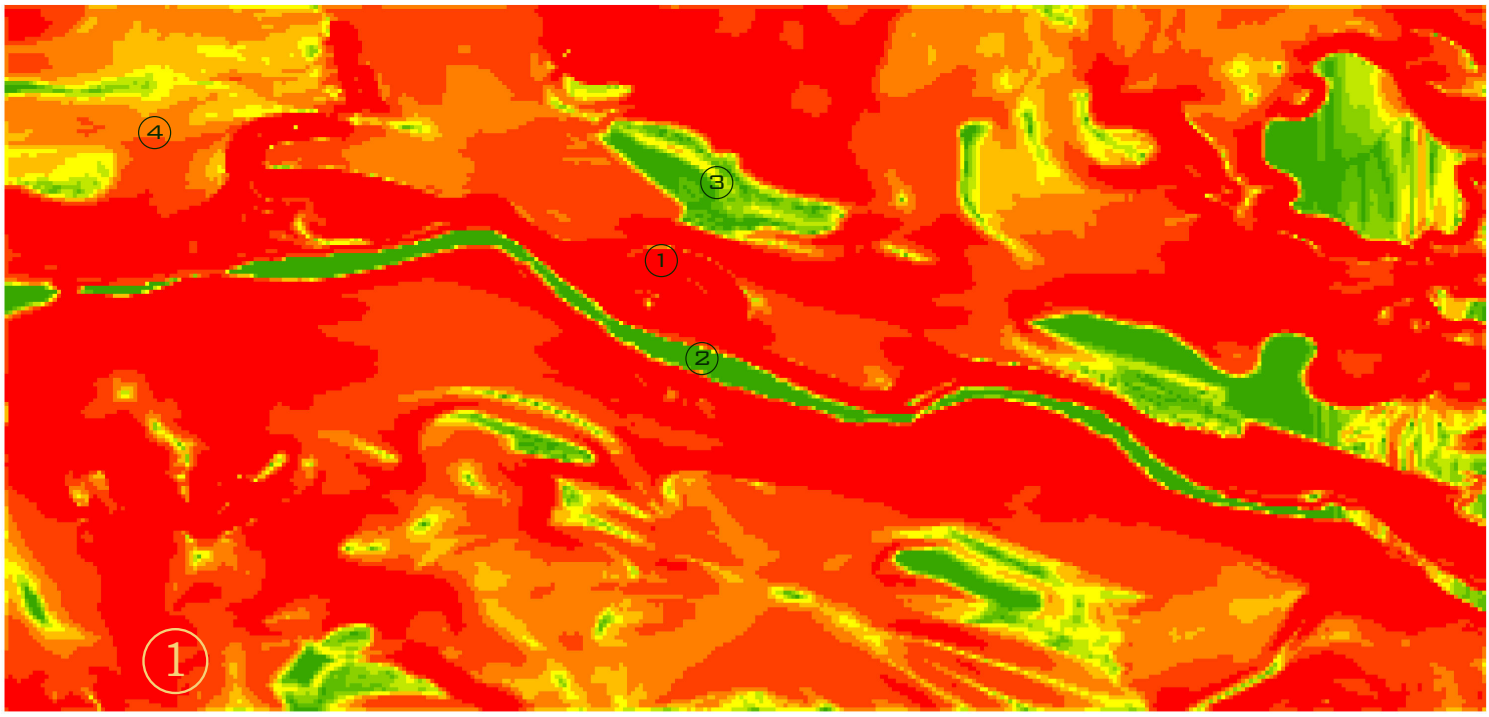
With the high amounts of snow during the winter, snow removal and storage will be a key factor.

Average Wind Speed



The winds will have to be accounted for throughout the year because it can be beneficial to cool down areas during the summer, but also not have wind corridors in the winter keeping people from visiting.

Slope



0-8.5	37.8-51.8	73-79.6
8.6-22.9	51.9-63.7	79.7-84.8
23-37.7	63.8-72.9	84.9-89.8

1 Top of the Mountain

The hill in the middle of the site creates a drastic slope around the outside of it. If this is changed it will have to be done carefully because right now the plants are established, but if disturbed there will be major chances of erosion.

2 The River

The river has cut away at the banks in this area, and if the designer wants interaction with the water, this will have to be considered.

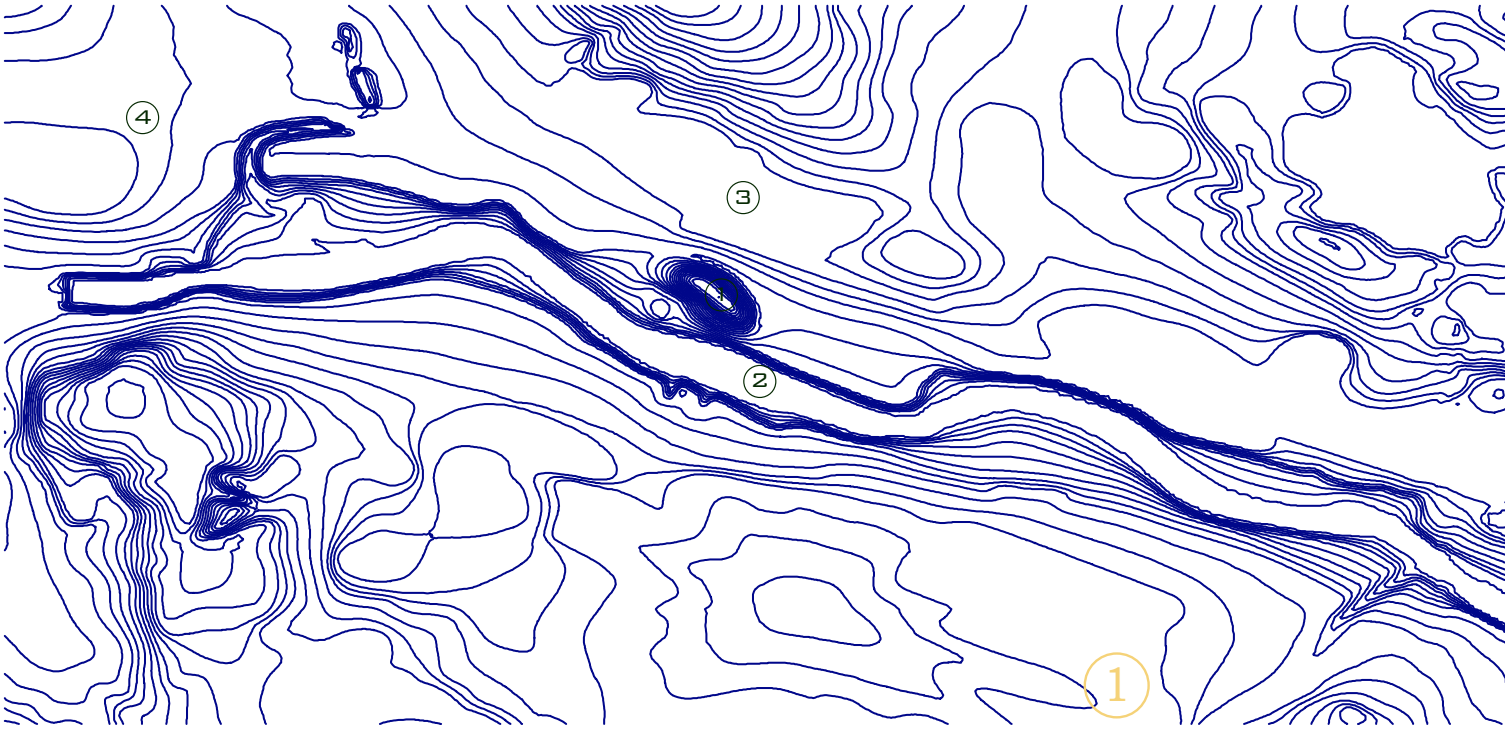
3 The Average

The majority of the site has a gradual slope running through it. This will be important because it allows for more interaction between more people.

4 Living Arrangements

Where the buildings will be placed has a moderate slope that will have to be addressed. The majority of the slope in the area will be to the north and south by the water's edge.

Elevation



1 Top of the Mountain

Located in the middle of the site, this high point reaches 1336.5 ft. This is important because it will be incorporated into the idea of changing the visitors eye view.

2 The River

Just to the south of the site is the Mississippi River with an elevation of 1257.3 feet.

3 The Average

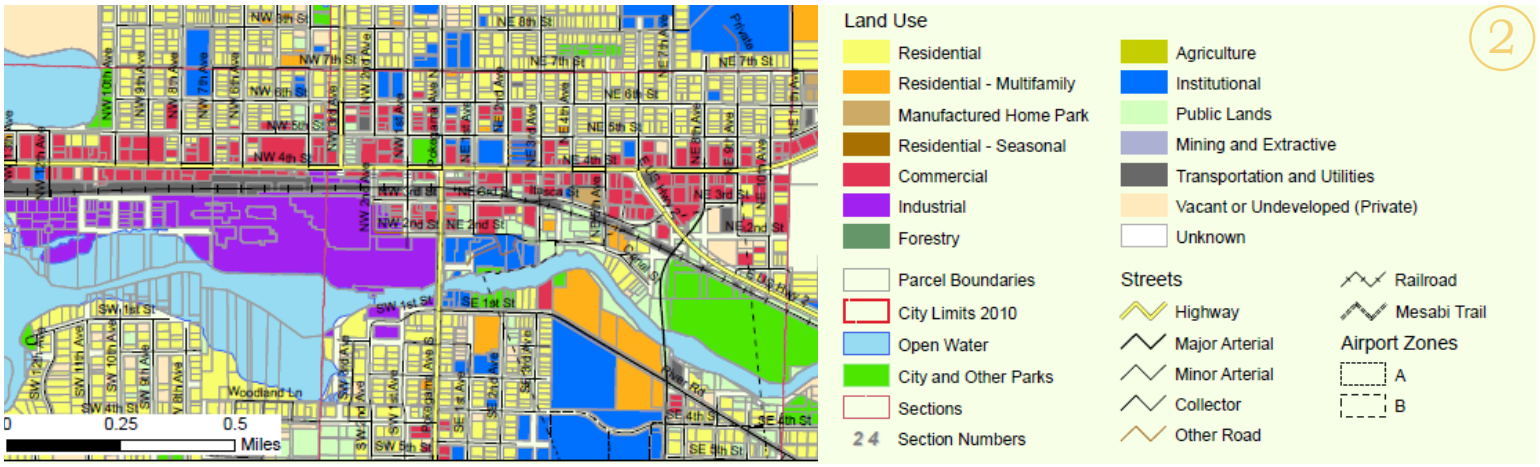
The majority of the site is sitting at an elevation of 1290 ft.

4 Living Arrangements

This area also has an average elevation of 1290 ft, but to the north there is a large grade change going up hill.

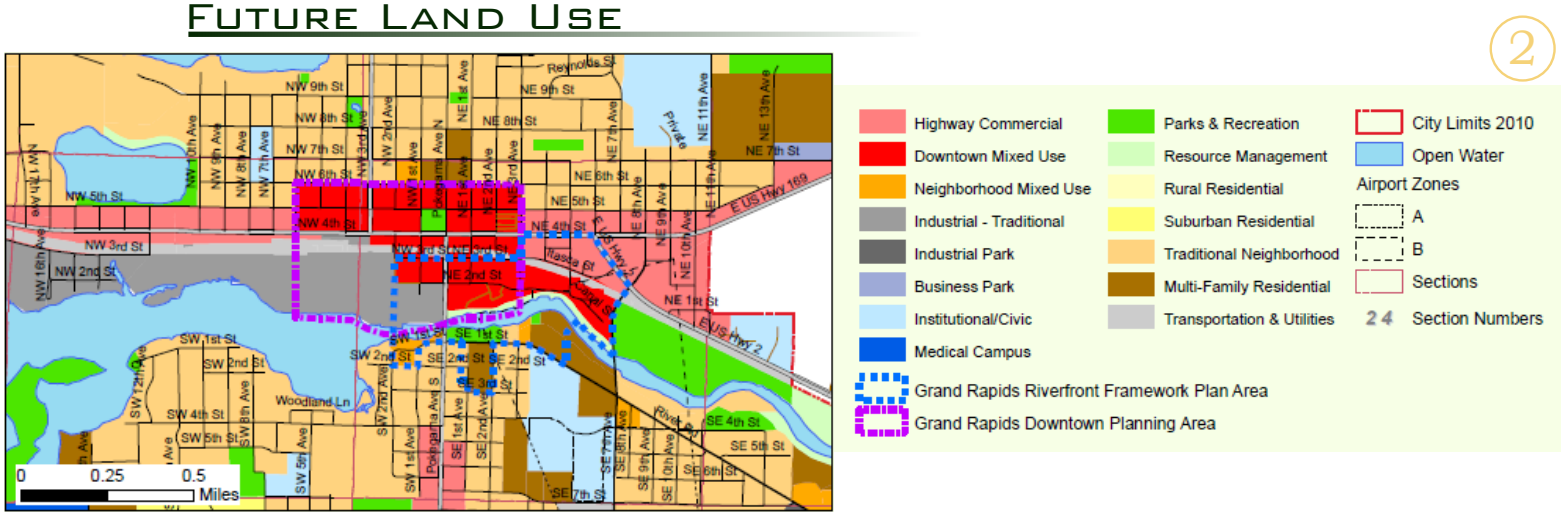
The majority of the site is relatively flat, making for easy travel, but there are portions of the site that will need to take advantage of the drastic change of elevation.

Existing Land Use



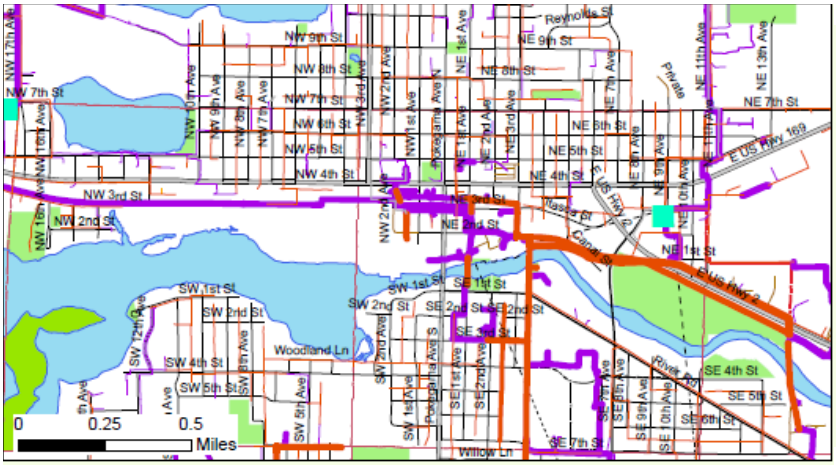
The existing site is mixed with parks, residential, and multifamily housing. To the north there is a strong line of commercial buildings running east and west.

Future Land Use



The community is proposing a commercial development to the north of the site running east and west. They are also proposing more downtown mixed use, which the new design will incorporate.

Electric System



Pri OH Electric Line Segment
OperatingV
70
120
160
250
340

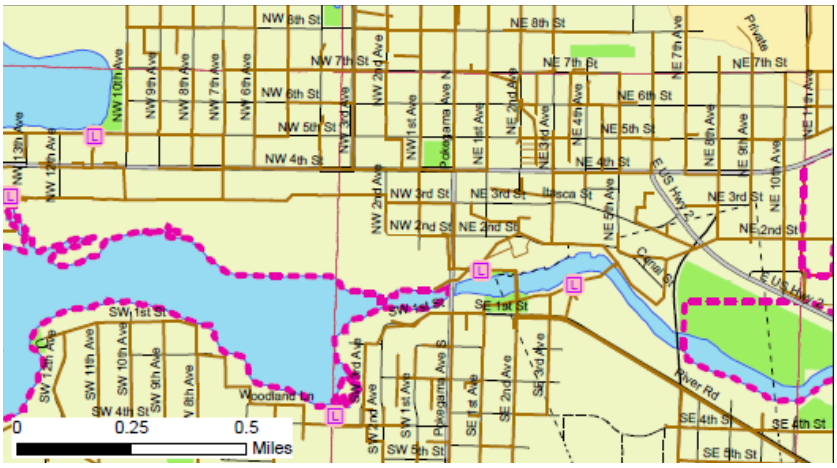
Pri UG Electric Line Segment
OperatingV
70
120
160
250
340
Electric Substations

Sec OH Electric Line Segment
OperatingV
0
30
50

Sec UG Electric Line Segment
OperatingV
30
Transmission Lines
Abandoned Electric Line Segment
Petroleum Pipeline
City Limits 2010
Open Water
Public Parks
Other Parks

The major electric lines running around the site are 340s.

Sewer System



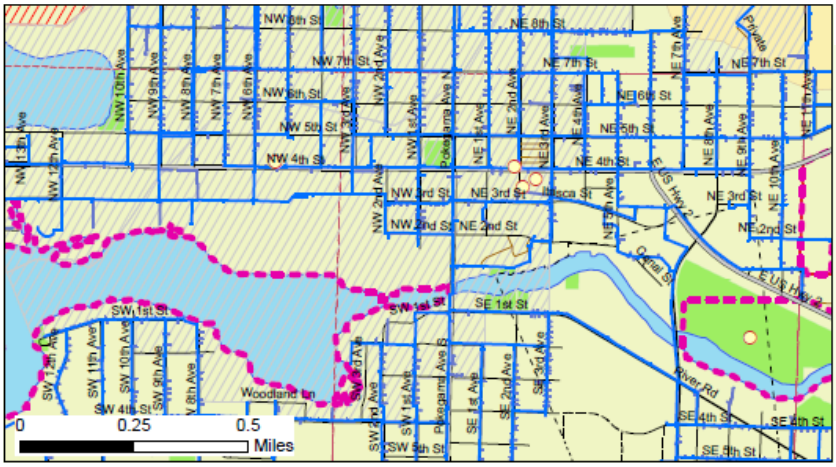
Sanitary Lift Station
Sanitary Lines
Water and Sewer Service Boundary
City Limits 2010
Open Water
Public Parks
Other Parks
Sections
24 Section Numbers

Airport Zones
A
B

Minor Watersheds
Bass Brook
Mississippi River 9057
Mississippi River 9064
Prairie River
Pokegama Lake

The water and service boundary is located on the western portion of the site. There are also have sanitary lines running down the majority of the streets around the site.

Water System



2

Pump Station
Water Tank
Wells
Water Line
Service Lines
Water and Sewer Service Boundary

Drinking Water Supply Vulnerability

High
Moderate
Low

Airport Zones

A
B

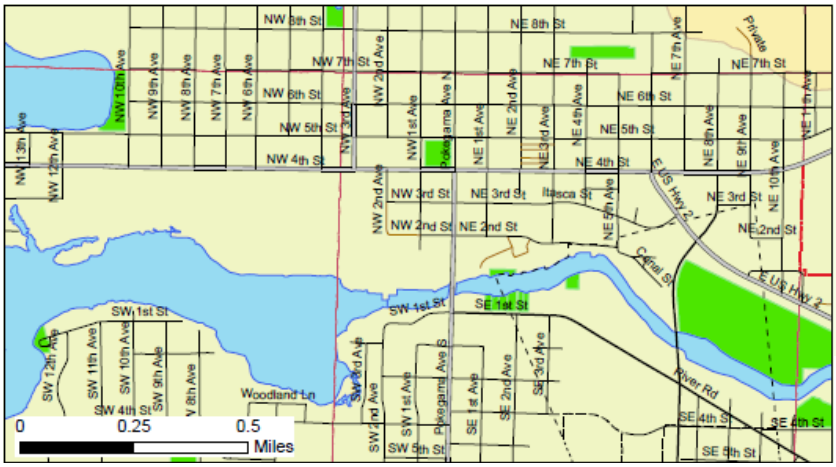
Minor Watersheds

Bass Brook
Mississippi River 9057
Mississippi River 9064
Prairie River
Pokegama Lake

City Limits 2010
Open Water
Public Parks
Other Parks
Sections
24 Section Numbers

The water lines follow all roads located by the site.

Watersheds



2

Minor Watersheds

Bass Brook
Mississippi River 9057
Mississippi River 9064
Prairie River
Pokegama Lake

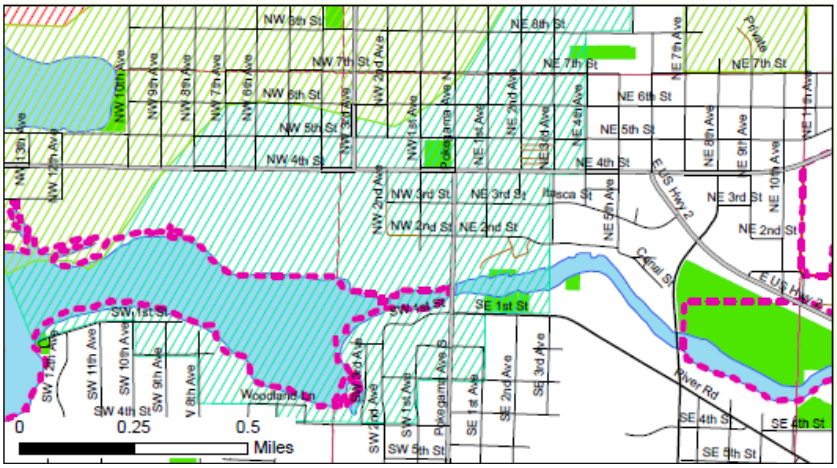
City Limits 2010
Open Water
City Parks
Other Parks
Sections
24 Section Numbers

Airport Zones

A
B

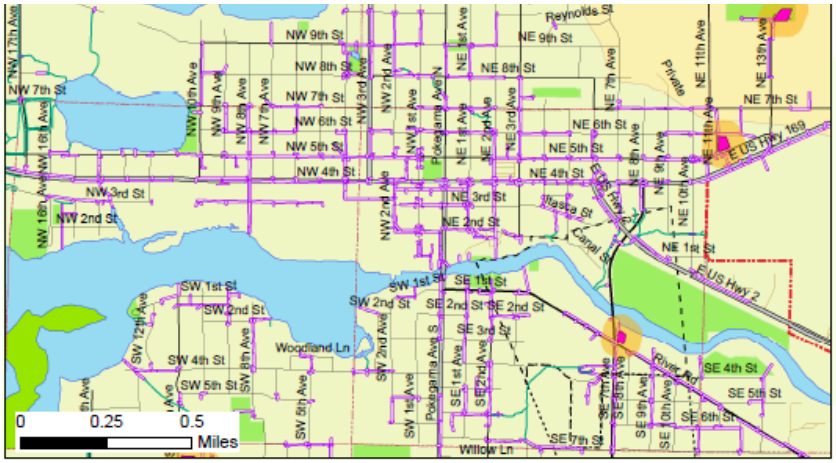
The sites watershed is the Mississippi River 9064.

Drinking Water Supply Vulnerability



Just to the west of the proposed site the water has low vulnerability, but farther to the north and west it works its way up to moderate.

Stormwater Management



Most of the roads in the site already have pipes in place for stormwater. The only major place that does not have them is right where the new housing units connect to the park at 7th Avenue.

Logging Terms

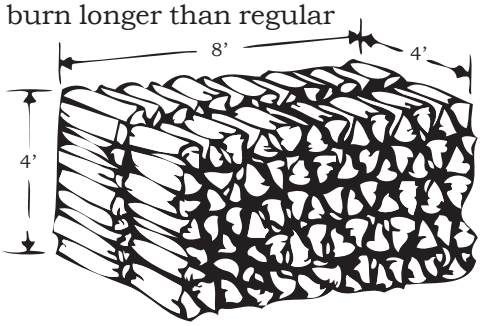
-**clear cutting**- going in and taking out all the trees

-**paper pulp**- product made from wooded need to produce paper

-**salvage logging**- going through a site after site has been damaged by storms, flooding, fires, or disease

-**fire log**- manufactured wood product that is designed to burn longer than regular firewood and start easier

-wood for manufacturing and furniture purposes



Total Wood harvested in Minnesota (In Thousand Cords)

Problem	Pulpwood	Sawlogs	Fuel	Total
Aspen and Balm	1359.3	51.8	39.2	1450.3
Paper Birch	117.7	14.2	38.6	170.5
Ash	25.2	8.6	39.7	73.5
Oak	0.1	73.0	58.7	131.8
Basswood	12.9	19.8	6.3	39.0
Maple	136.0	10.5	32.9	179.4
Cottonwood	26.6	8.2	0.3	35.1
Sub-Total Hardwood	1679.1	203.0	226.0	2108.1
Pine				
Red Pine	28.6	142.4	2.9	173.9
White Pine	4.7	7.0	0.4	12.1
Jack Pine	43.5	88.4	1.8	133.7
Spruce	217.5	24.5	0.3	242.3
Balsam Fir	149.5	11.1	0.2	160.8
Tamarack	51.4	7.0	12.0	70.4
White Cedar	0.9	6.6	0.8	8.3
Sub-Total Softwood	503.6	287.4	20.7	811.7
Total	2182.7	490.4	246.7	2919.8

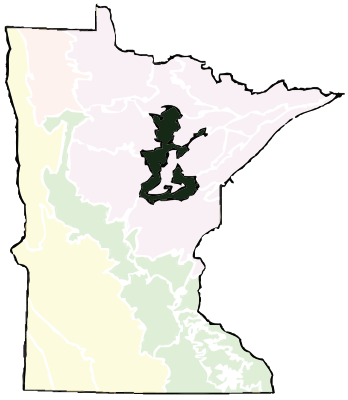
Logging

Itasca County

Itasca County manages 300,000 acres of forest and of which 280,000 acres of this is commercial forestland. On average sites will allow 4,100 acres to be harvested a year. Logging sites can range from 5 acres to 126 acres, with an average of 40 acres per logging site. The majority of the lumber taken out is aspen trees.

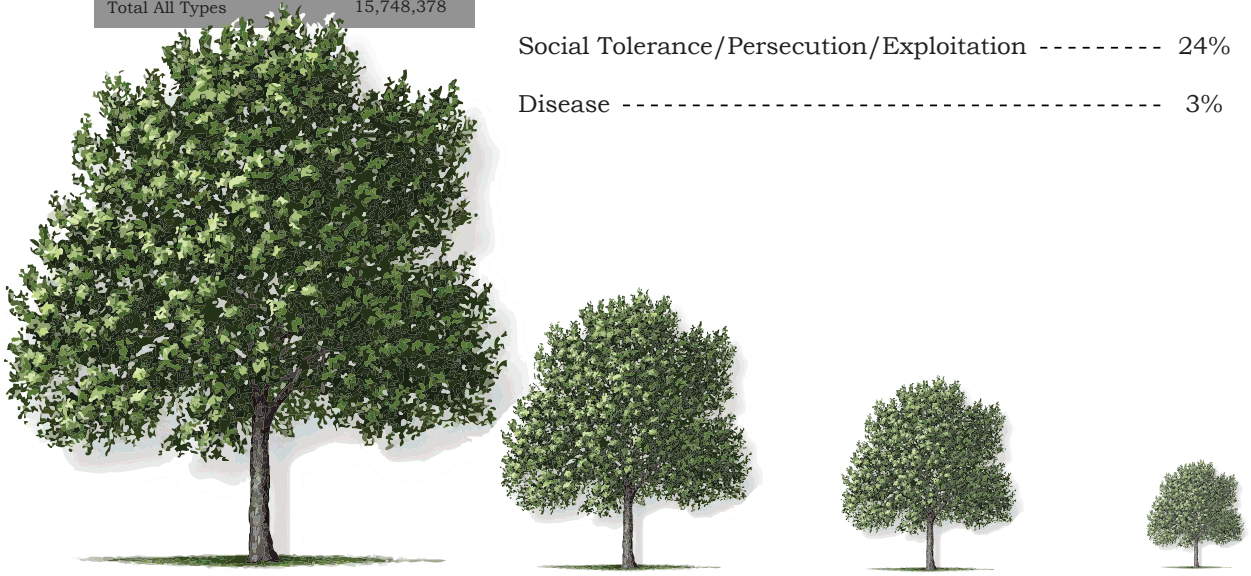
Area of Timberland in MN by DNR Forest Type (2009)

Forest Type	Acres
Aspen	4,757,118
Northern Hardwoods	1,473,003
Oak	1,420,428
Black Spruce	1,395,847
Lowland Hardwoods	1,332,614
Tamarack	1,023,395
Birch	946,626
Red Pine	637,329
White Cedar	585,671
Balm of Gilead	442,686
Balsam Fir	354,957
Jack Pine	282,201
White Pine	156,619
Cottonwood/Willow	130,699
White Spruce	108,341
Other Softwoods	23,318
Non-Stocked and Other	677,528
Total All Types	15,748,378



St. Louis Moraines Subsection

Problem	Percentage of which this is a problem
Habitat Loss in MN	80%
Habitat Degradation in MN	89%
Invasive Species and Competition	22%
Pollution	30%
Social Tolerance/Persecution/Exploitation	24%
Disease	3%



Pulp and paper- 52% OSB/Engineered- 23% Lumber and Specialty- 17% Wood Energy- 8%

Estimated wood used from Minnesota timber harvested in 2008 (Total Harvest=2.92 millions cords)

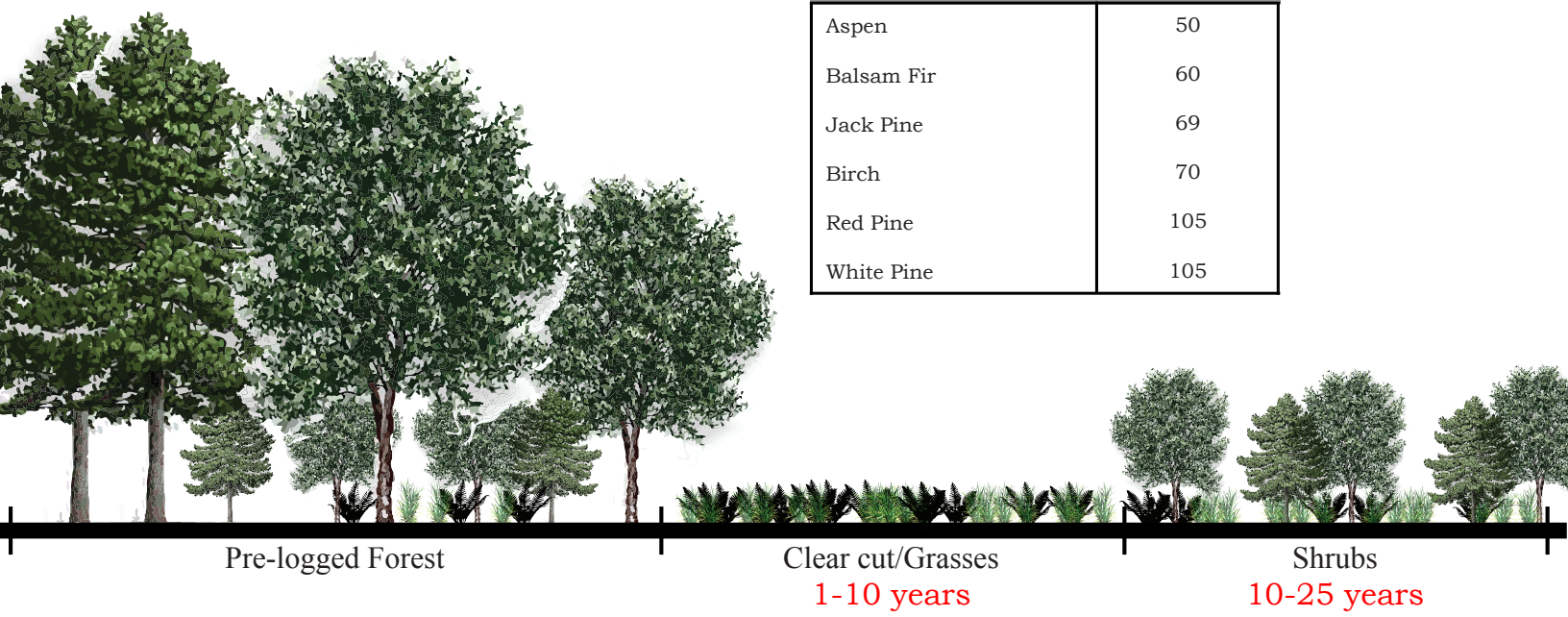
Logging

Generalized Successional Stages found in Forest Environments

Forest Successional Stages	Conditions
Grasses and Forbs	Grasses and forbs present; some seedlings
Shrub-Seedlings	Trees share and then dominate site; intolerant species grow quickly and out compete tolerant species
Young	Growth is rapids, tree to tree competition is intense, intolerant species that drop behind may die and be replaced by tolerant species.
Mature	Mortality due to competition continues, tolerant and intolerant species can be in the canopy. In mixed stands layers of tolerant and intolerant species can be easily distinguished.
Climax	Relatively stable community which has a plant population suited to he environment. Tolerant species will regenerate and perpetuate the same community.

Desired Rotation Ages

Tree Type	Age
Aspen	50
Balsam Fir	60
Jack Pine	69
Birch	70
Red Pine	105
White Pine	105



A forest has stages that it goes through, and when it comes to logging, if it is not done right it can destroy a place and take a long time before it makes its way back. The image above illustrates that it could take up to 10 years just for grass to grow in the area, and up to 25 years for shrubs to be fully established.

Poplars/Pines (Faster Growing Trees)

25-100 years

Hardwoods (Slower Growing Trees)

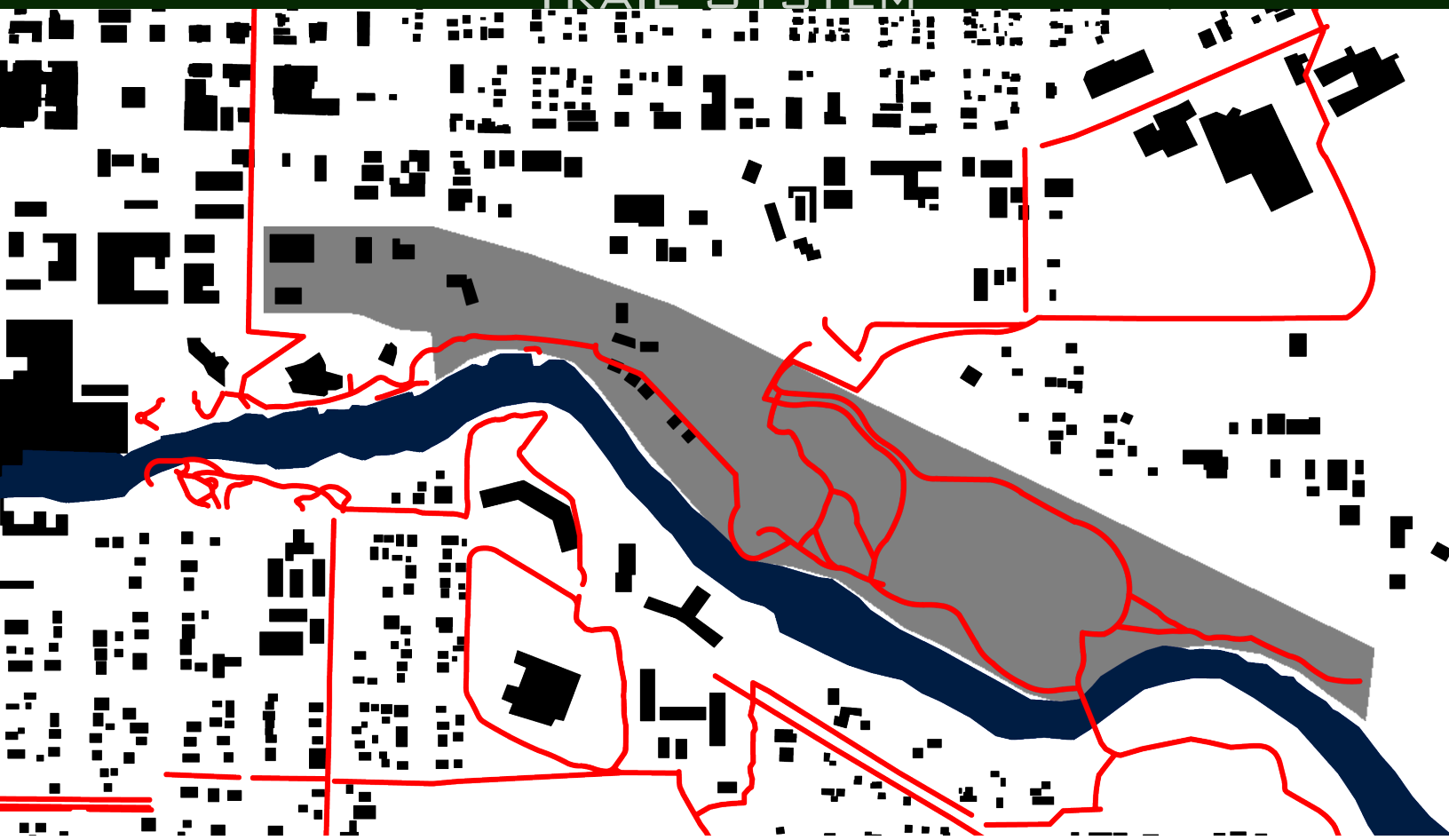
100+ years

The next stage of a forest is the faster growing trees, such as poplars and pines, which can take up to 100 years. Eventually over 100 years, the forest will finally be filled with the hardwoods that take longer to become established.

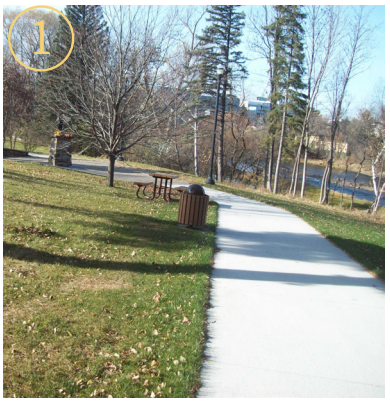
Biodiversity

Biodiversity is key when it comes to forests, because a large number of trees and shrubs ensure that if a disease or storm comes through there is a higher chance of sustaining the area. This is also key because these places allow the majority of animals to survive.

Trail System



There is an existing trail system running through and around the town that gets a lot of use by the residents. This is key because the trail runs through the proposed site and needs to be addressed when moving forward with the design.



Vegetation

The majority of the area consist of some kind of vegetation. There are plenty of full grown trees, which is key for further design elements when discussing how a forest will grow.

PROGRAMMATIC STRATEGIES

The existing site has some green connections, but this design will further push this aspect of connecting the local parks with the riverfront and the various areas of the community. The site is somewhat forgotten and this project will promote development of the area to help with that connection.

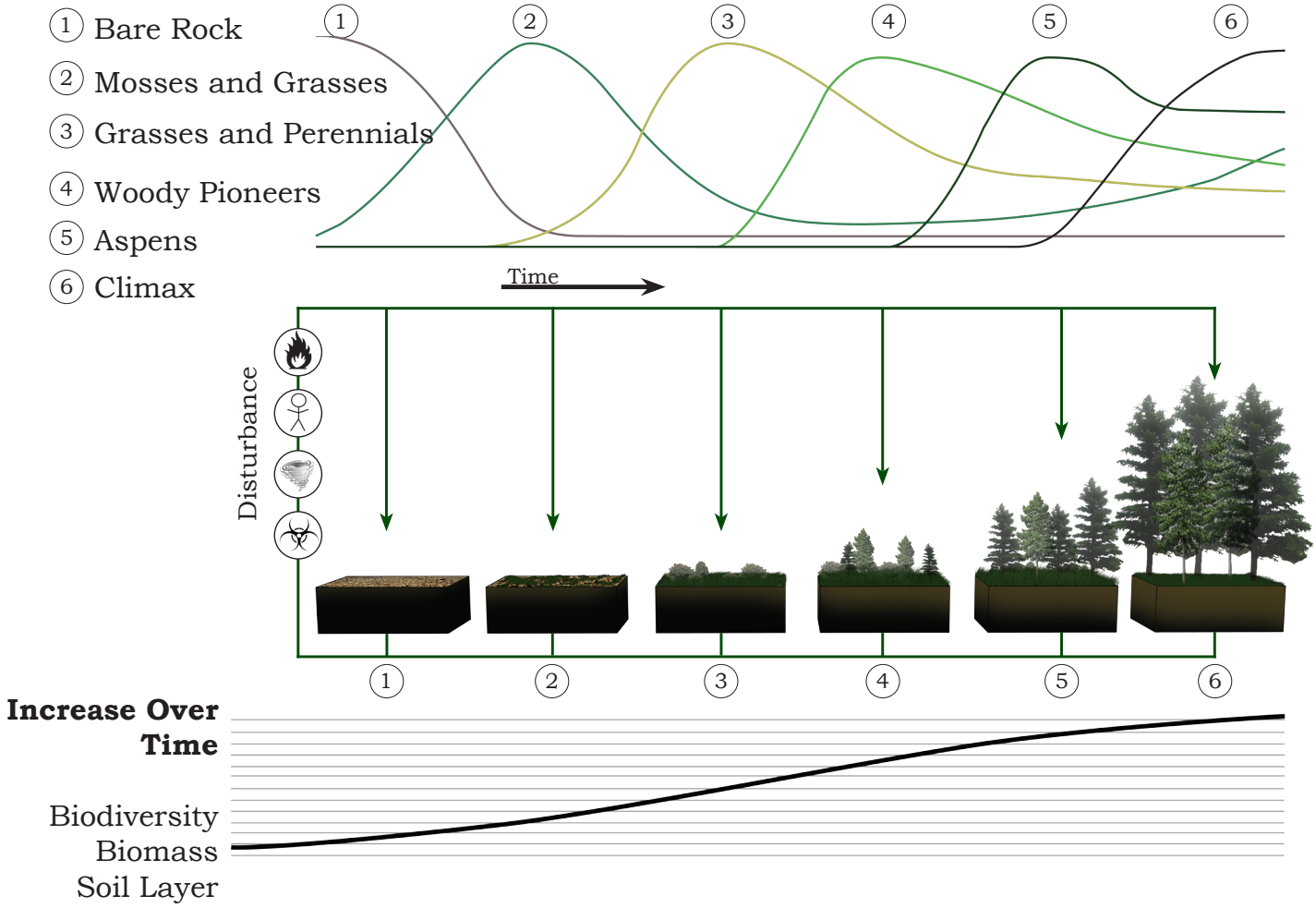
There will be various signage located at various elevation levels so the signs do not get stagnant and pushed aside as just another info booth. These will be located along a new path system that better connects the two sides of the river and does not get cut off by the major streets running through the community.

Bridges and the vertical elements will be incorporated into the design. These are not just going to span from point A to point B but will have a sense of engagement along them, as well as with the element that the person is going through.

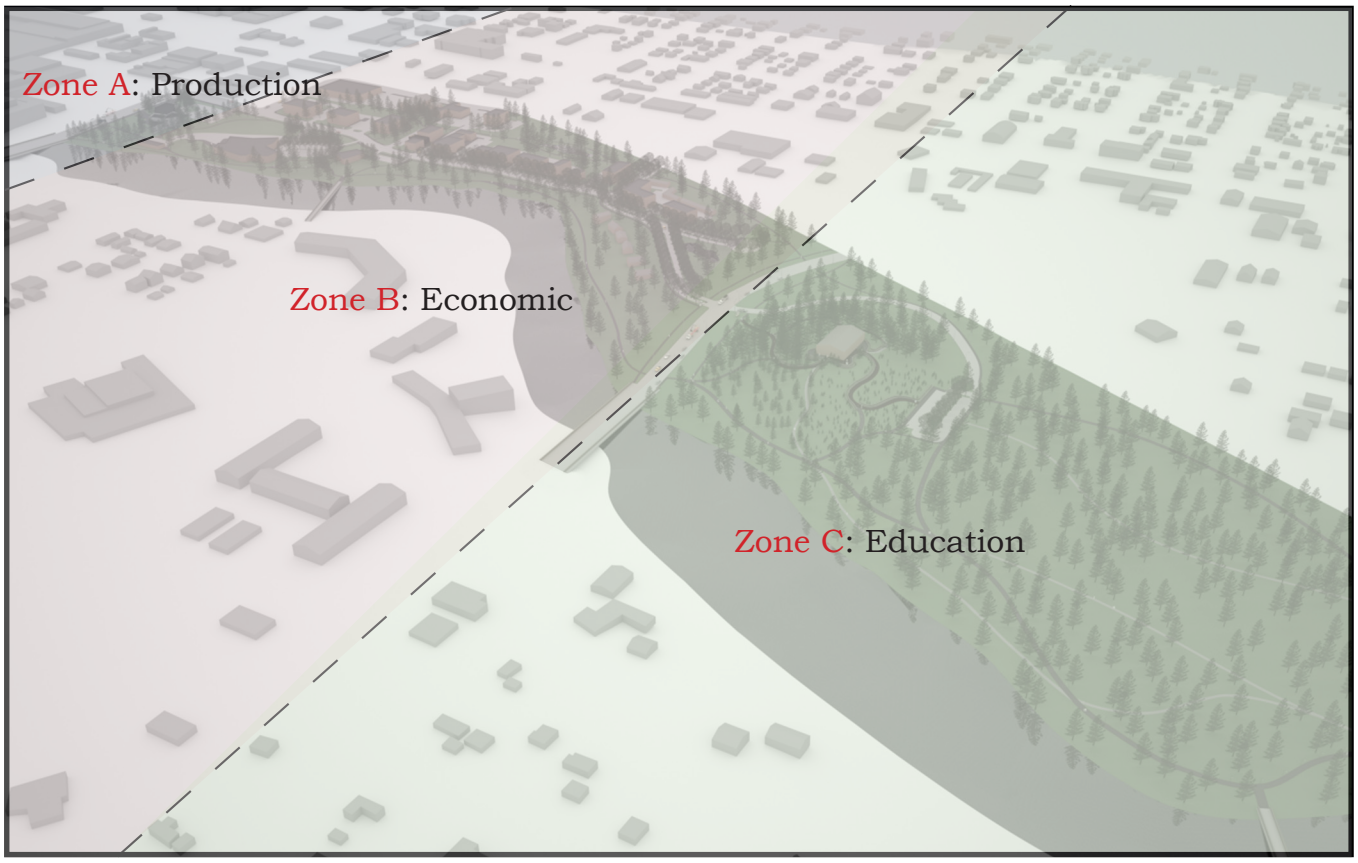
On the western side of the site there will be mixed use building incorporated into the design. These will be mixed with housing as well as retail shops. There will also be parking standards put into effect that will allow people to explore the site as well as the downtown atmosphere.

The entire project is based on an interaction with nature and this design will illuminate this idea with the various elements throughout the site as well as the connection to the rest of the city.

Forest Succession over Time



The idea of succession will be the basis of the design. Since the Grand Rapids area has such a prevalent long history and present this succession will be a major way to illustrate the issues of logging.



Physical → Blandin Paper Mill

Cultural → Forest History Center

Biological → The Lost Forty

Clear Cutting Forests
Production Waste → Reconnecting the city to the Mississippi River

Logging Practices
Jobs → Linking History to Development

Forest Ecology → Education and Demonstration Park

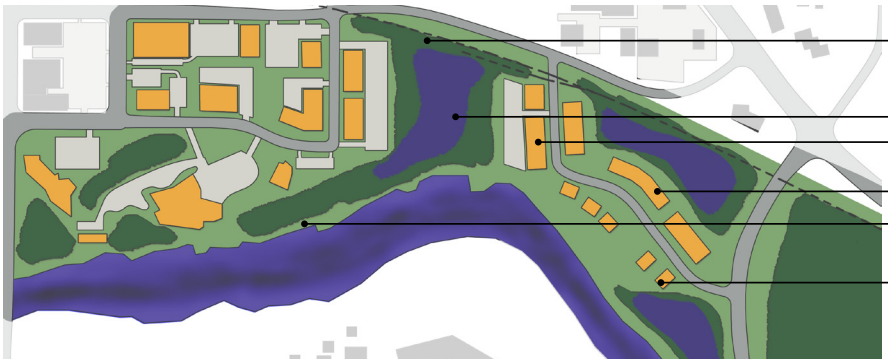
Concept Development

Railroad Buffer
Connection between 7th Ave and 3rd Ave
Riverfront Trail Connection

Educational Pond Centered Between Housing Units
Path Connection By Railroad Tracks

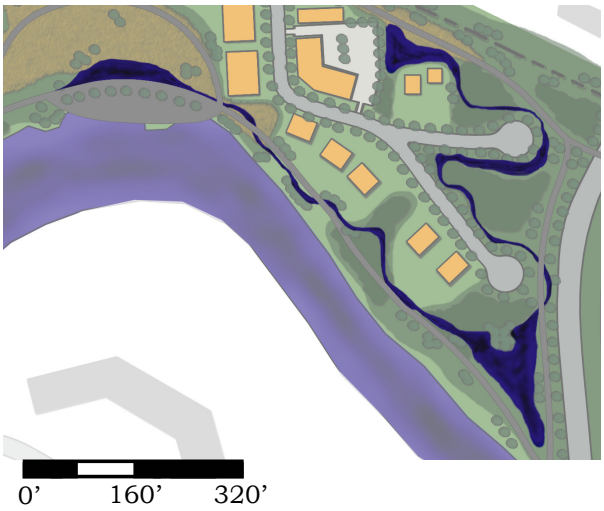
High Affordable Housing Density
Strong Connection Between 7th Ave and 3rd Ave
Railroad Buffer

Buildings Underdeveloped
Riverfront Connection Lost



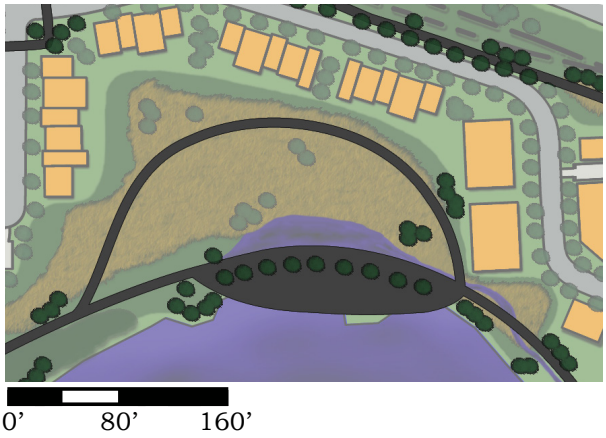
Creating Desired Views
Defined Spaces

Disconnect between 7th Ave and 3rd Ave
Riverfront Connection Lost
Buildings Underdeveloped



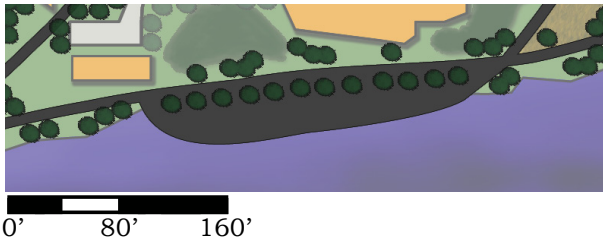
Reconnecting the City to the Mississippi River

There are four pond strategically located around the site that will collect be collecting water from various grades of material. These will be stations that individuals can go and observe the impact of the natural environment on the cleansing of stormwater.



Linking History to Development

The final collection water collection pond that will illustrate the clean stormwater that will be introduced to the river. The area also has a lookout area that people can sit and enjoy the view of the river.



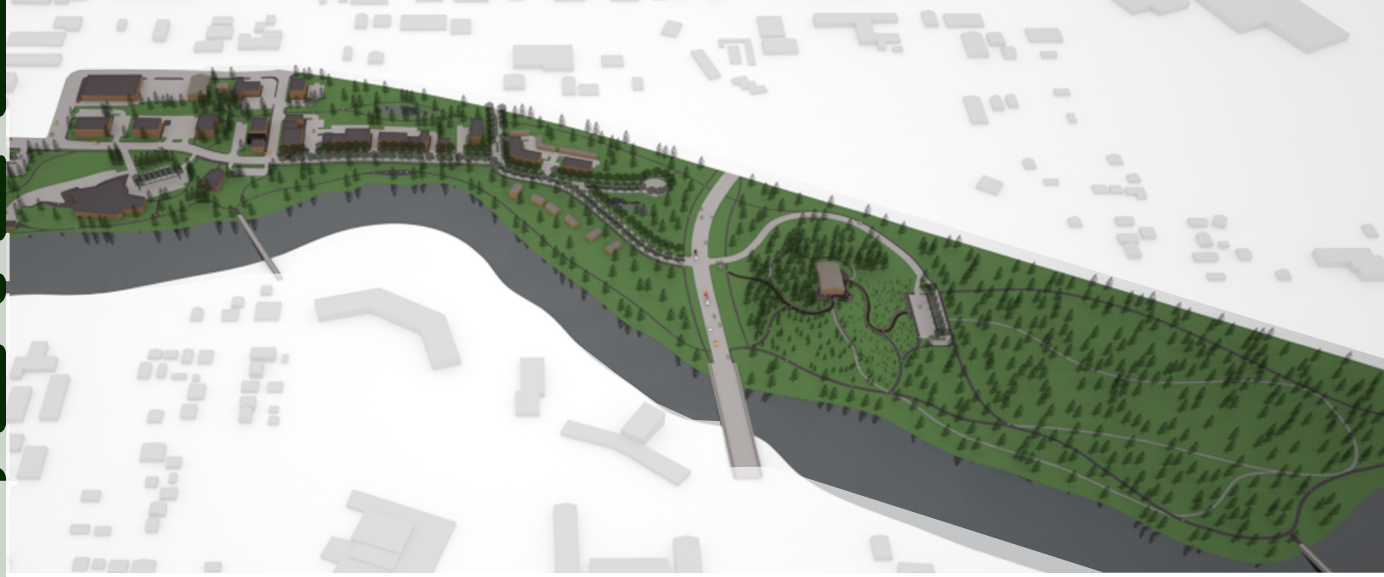
The View

A plaza on the rivers edge that is located outside the library. This space will be a destination for the library visitors as wells as the waterfront explorers.

Preliminary Design

To recreate the connection between the city and the Mississippi River, urban infill was introduced in this location. The base elements in the design where created to tie the history of the area in the development, and by doing so educate the public with a demonstration park.

MASTER PLAN

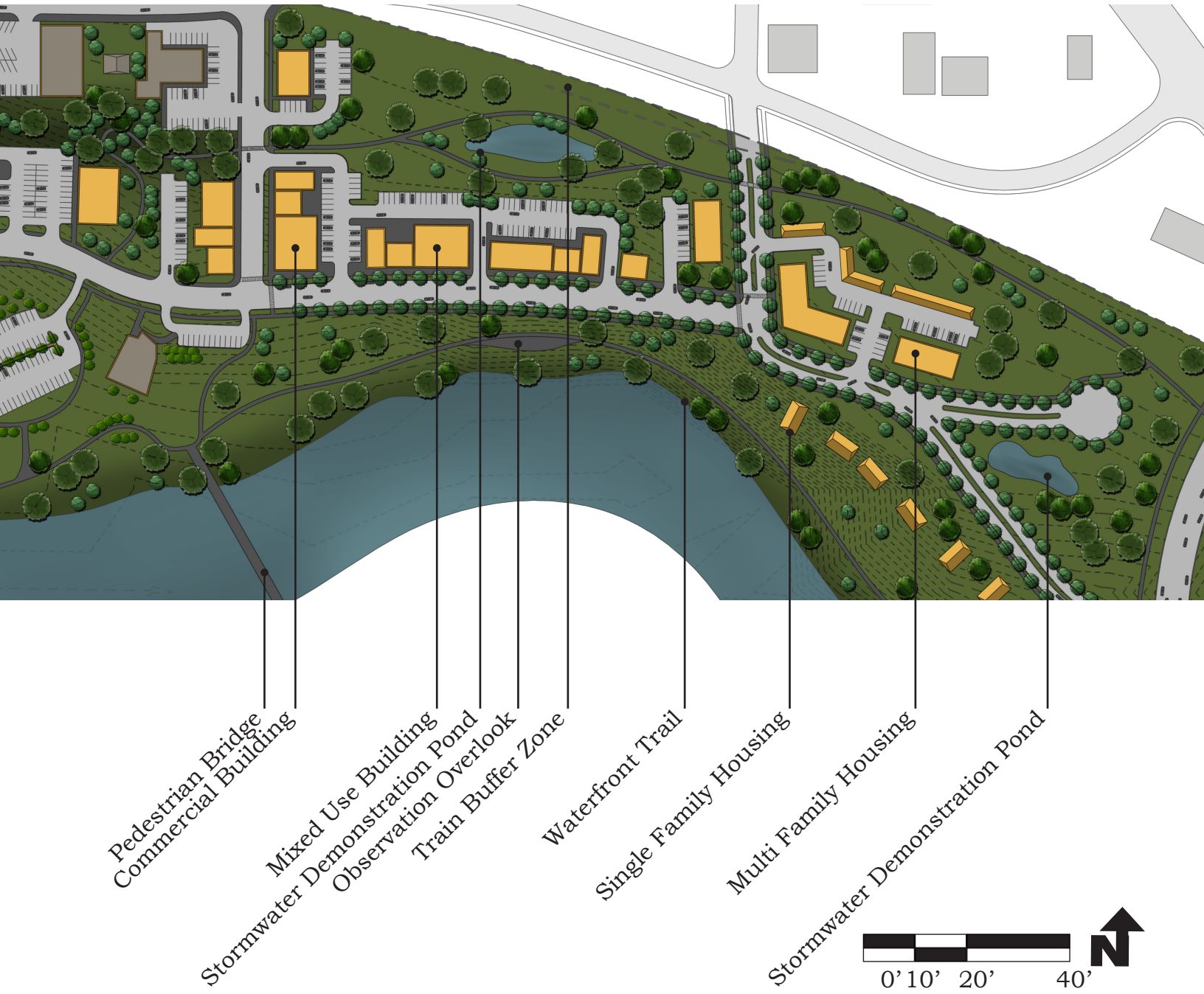


The newly designed site incorporated many amenities that the community of Grand Rapids needs. The middle portion of the site as look at drawing in a higher volume of people throughout the day. Where as the east side of the site has been designed to illustrate visitors about the logging industry that plays a vital role in the surrounding area and the impact that it has to the environment.

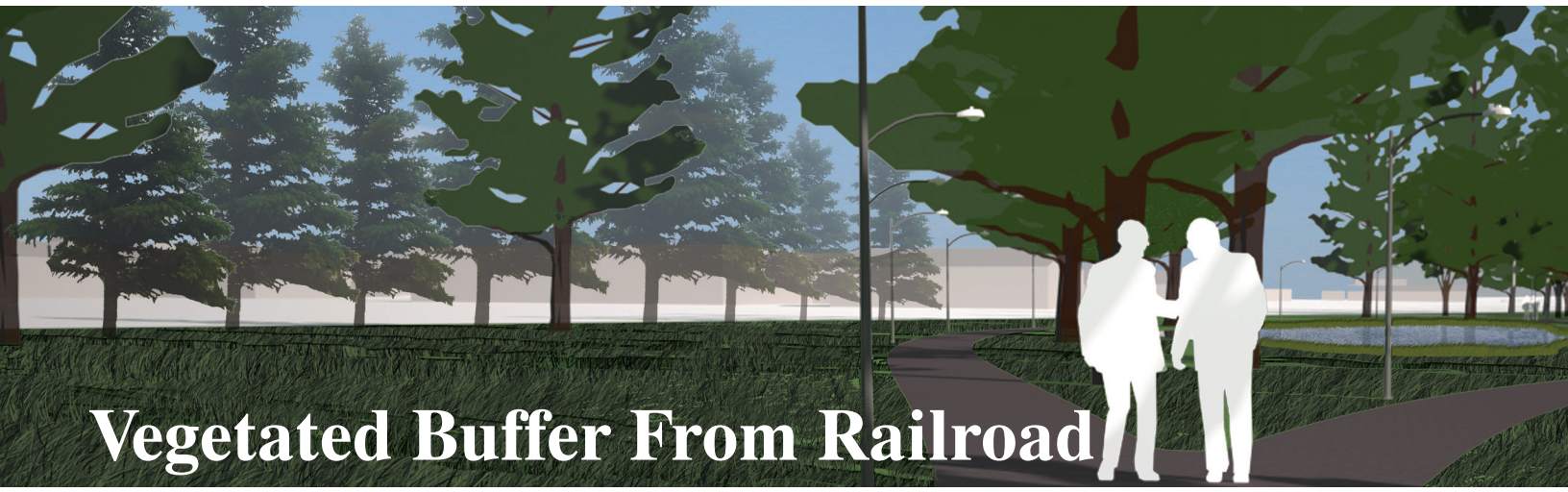
Zone B: Economic

Zone C: Education

Reconnecting the City to The River



Zone B or the economic zone is where the urban infill project takes place. Commercial, mixed use, and residential buildings have been incorporated. With the added people to the area the roads have been redesigned to allow for easy travels, added street parking, additional parking lots, and medians to slow traffic in designated areas. The incorporation of paths to the area also allows for the added pedestrian flow in on site, as well as the connections to the surroundings.

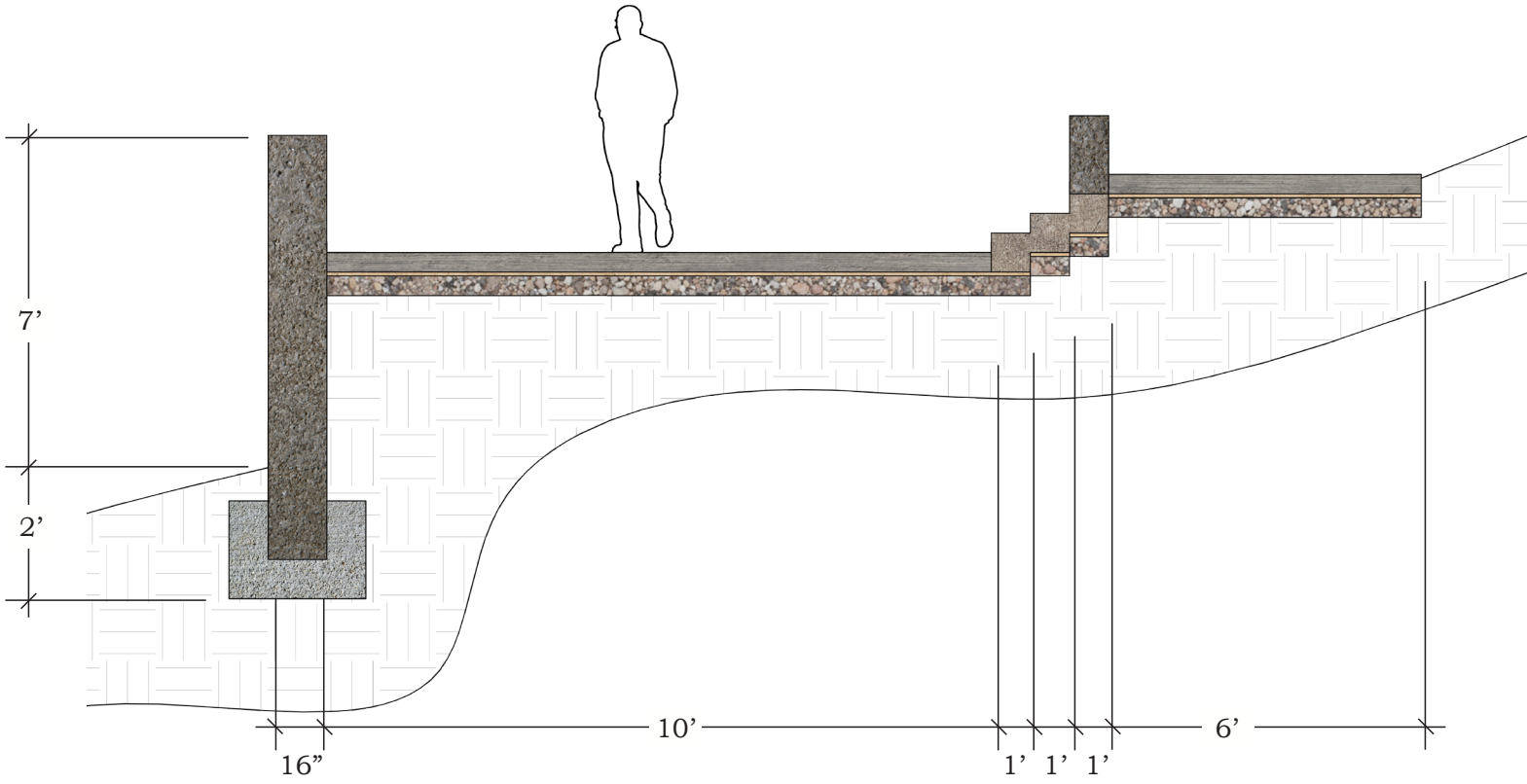


Vegetated Buffer From Railroad

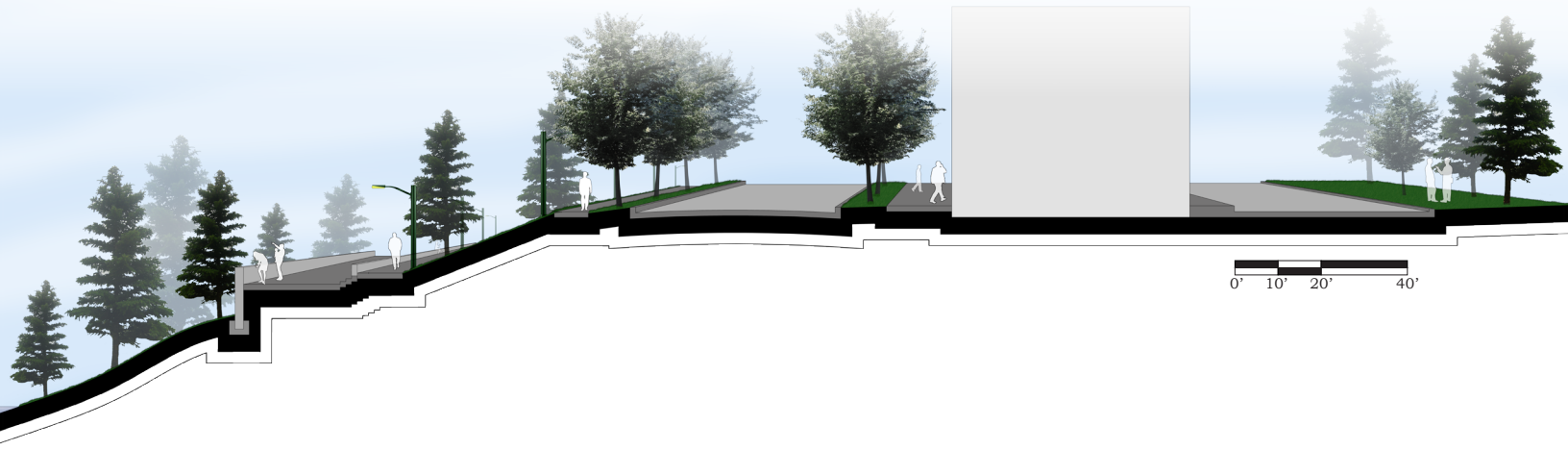
The newly design vegetated buffer located on the north side of the site is designed not to fully block out the view and sounds of the railroad, but rather reduce the effect the of it on the surrounding area. The railroad still needs to be celebrated because it still plays such a big role in the continued growth of the logging industry as well as the growth of Grand Rapids.

Connection From Demonstration Park

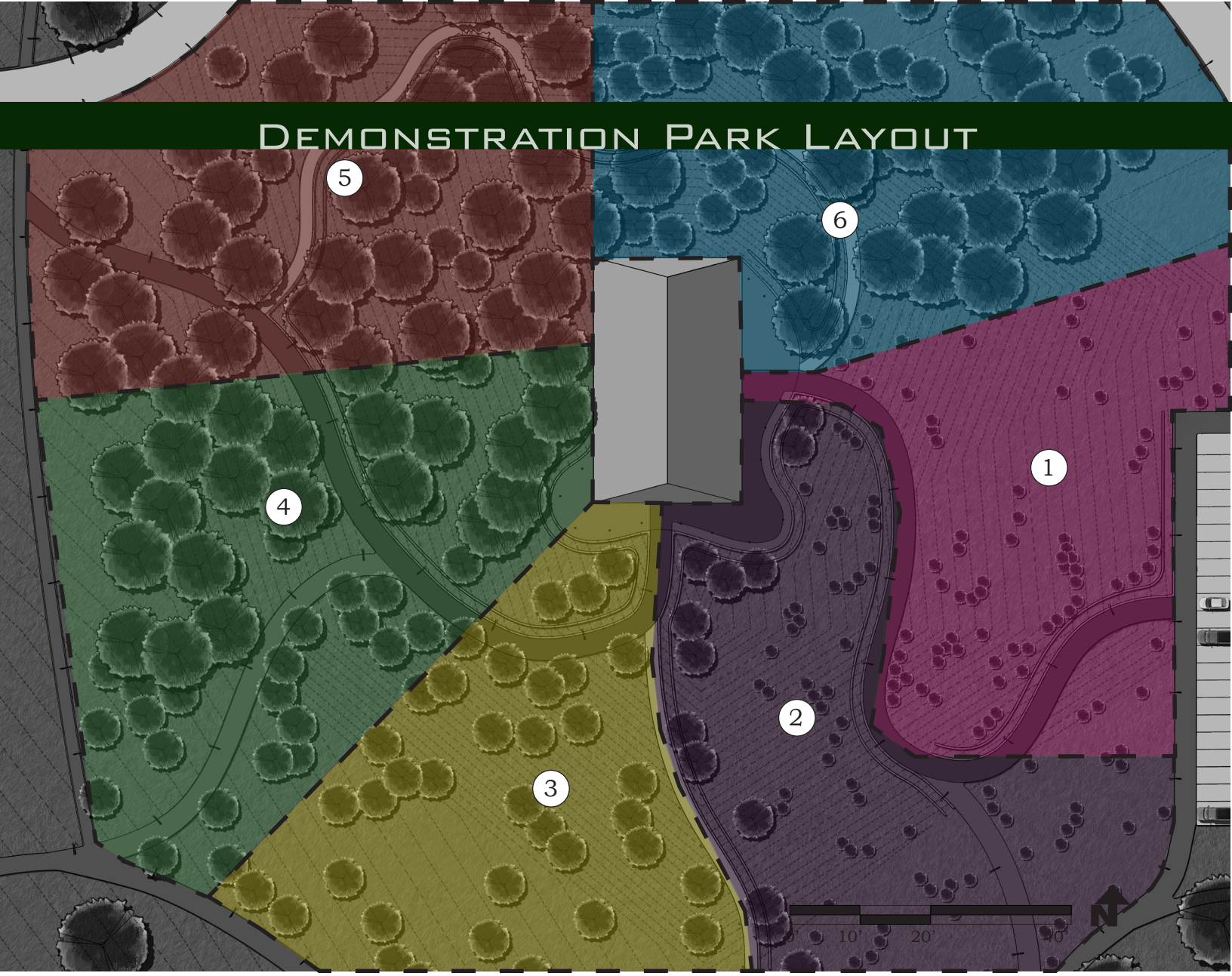
The addition of more paths connection throughout the site create easier connections for visitors and residents of the area to travel from place to place without having to drive everywhere.

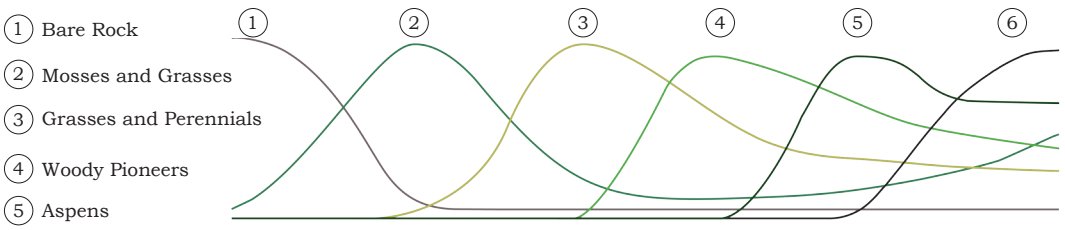


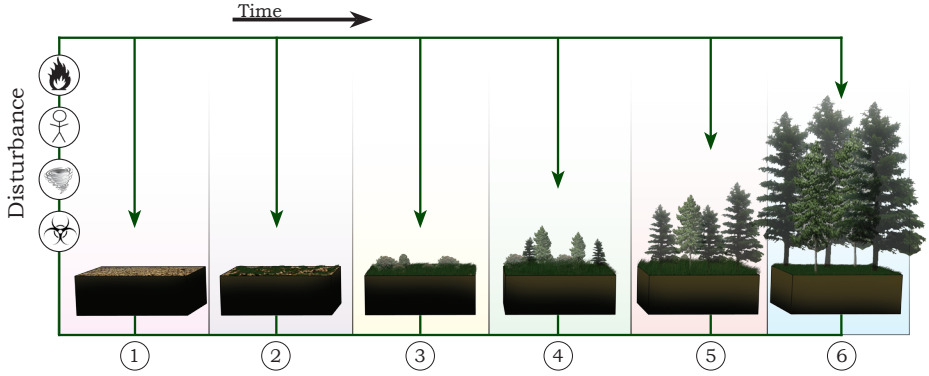
The economic zone has been reproposed with urban infill to bring visitors to the site and engage them with the rivers edge. This is accomplished by drawing visitors in with the added buildings and paths throughout the area.



Demonstration Park Layout



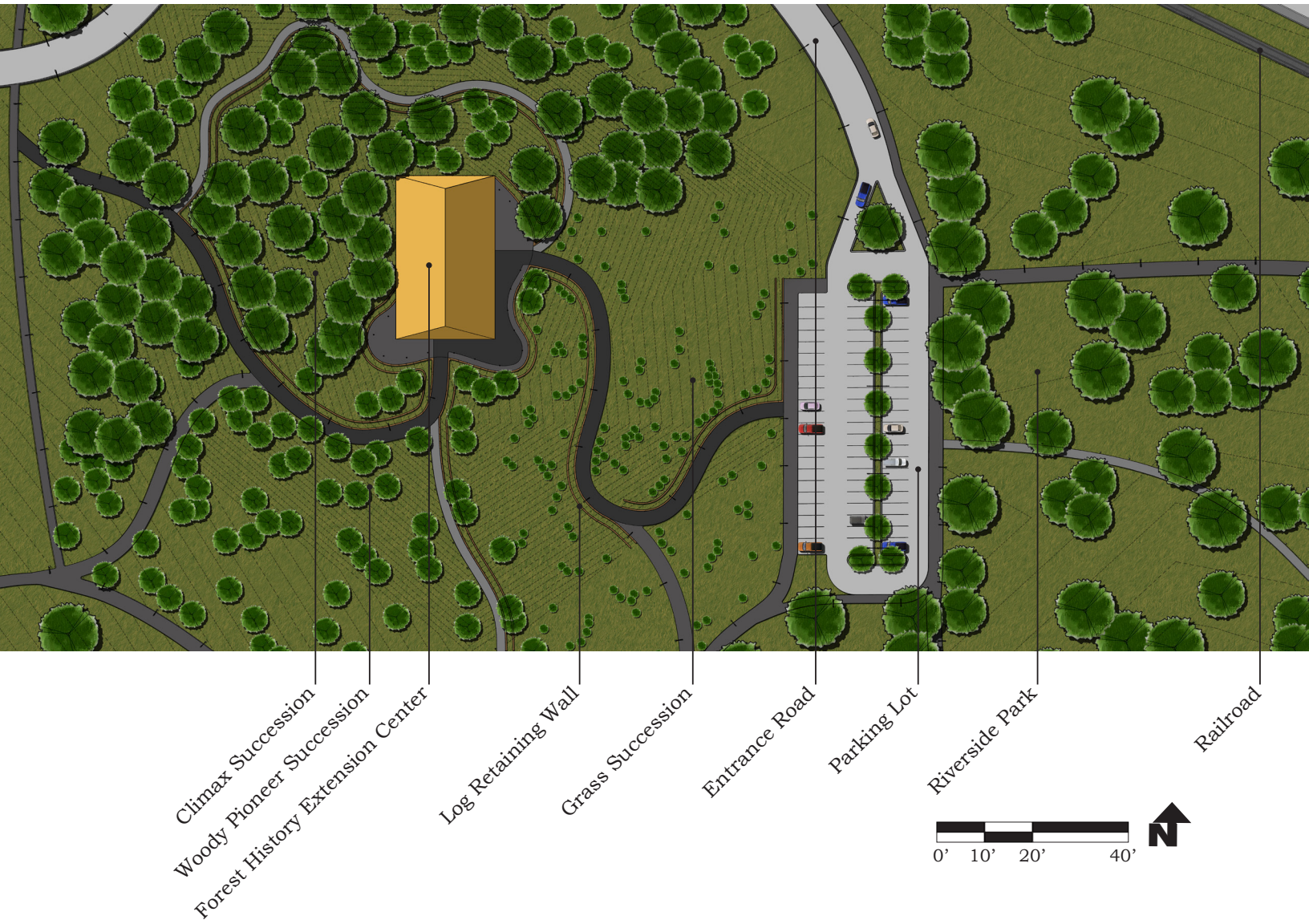




The Stages

Located up on the hill is the demonstration park which educates the public about how forest ecosystems are effected by logging and other natural disasters and the fallowing transitions they go through. The sections are based on 50 year time line and when a section hits its life expectance. It will be cut back down and start back over to further illustrate those successions.

Linking History to Development



Zone C or the economic area is where the vast majority of the logging history is taking place with the materials chosen, tree layouts, and the extension center located on top of the hill. This also is a connection to the existing Riverside Park to the east. The new parking lot will be utilized for visitors to both parks.

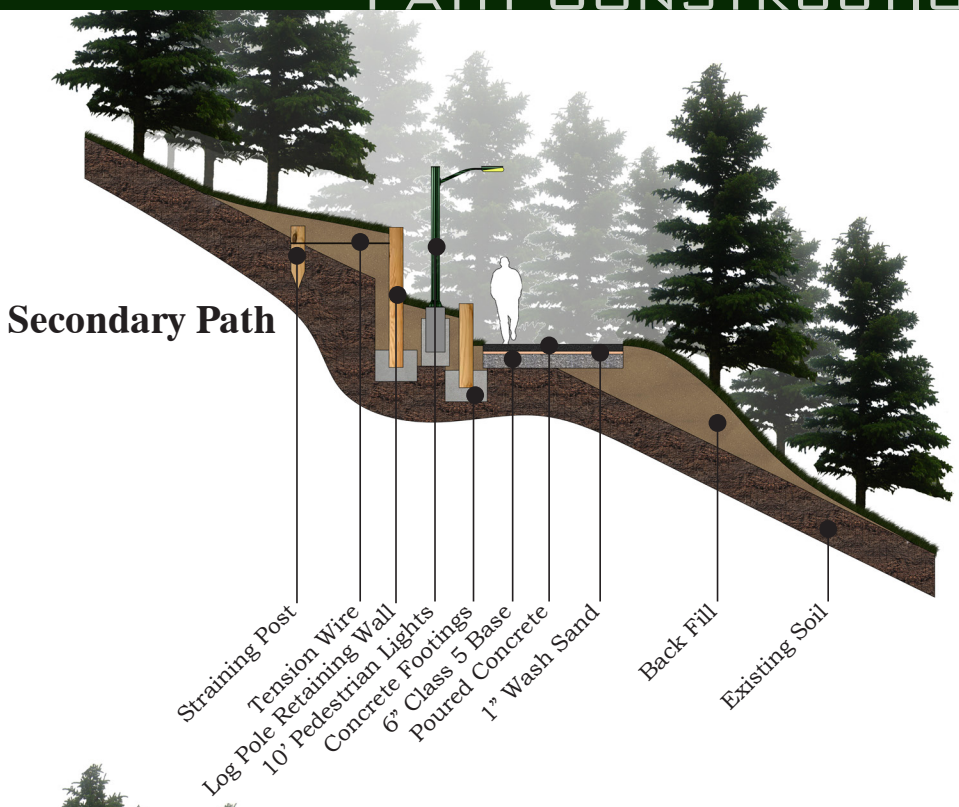
Entrance to Demonstration Park

The new park will be located to the east of 7th Avenue and the main entrance sign will be located right of the entrance road. The sign replicates a national park sign that can be found throughout the area.

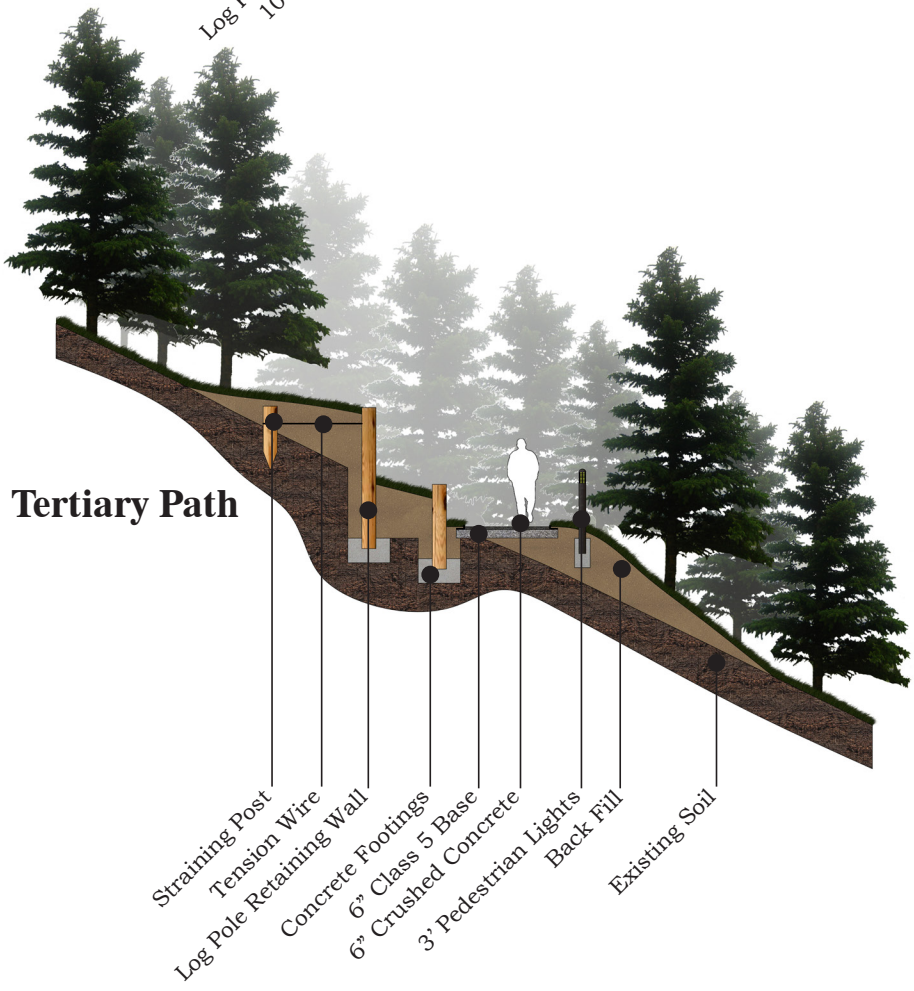
Overlook to Mississippi River

The main building is located on top of an already existing hill and the design as used it in a way that takes advantage of the wonderful views overlooking the river and surrounding area.

Path Construction



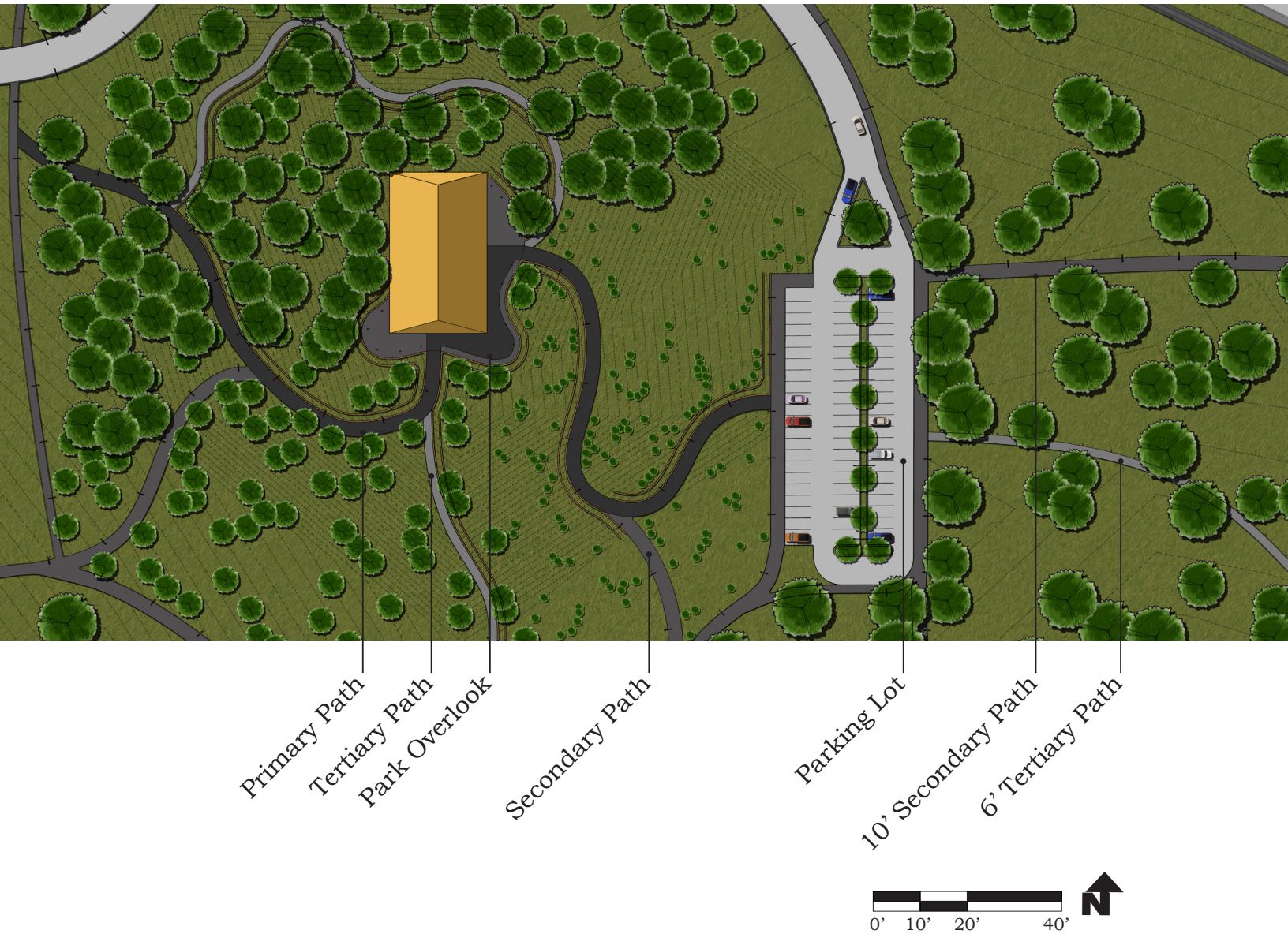
Secondary Path



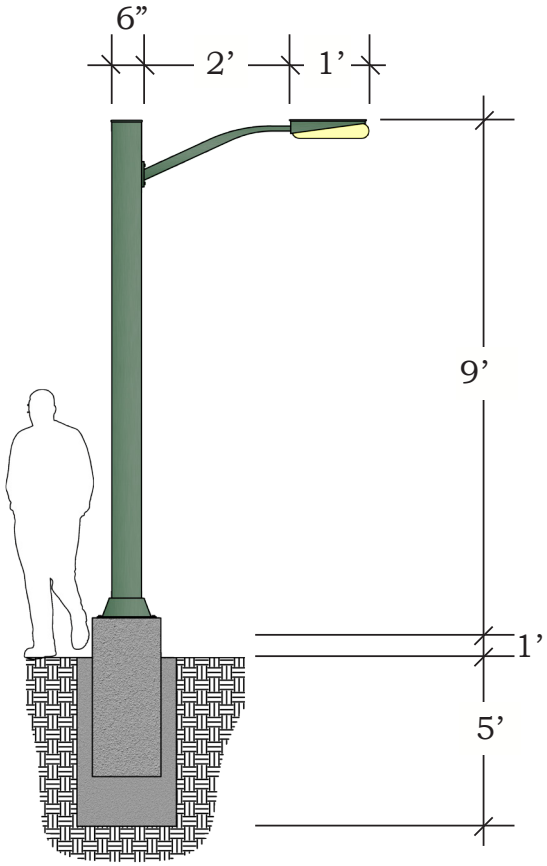
Tertiary Path

There are three types of paths venturing around the hill that visitors will be able to travel and explore the various successions that will be taking place. Since the site is located on a hill, it provide various views to the trees and the surrounding area to really see how they are linked. The best viewing point is on top of the hill which the extension center is located providing a resting, leaning, and viewing of the park. The paths flow with the contours of hill overall, but will need to be cut and filled to allow for easier travel.

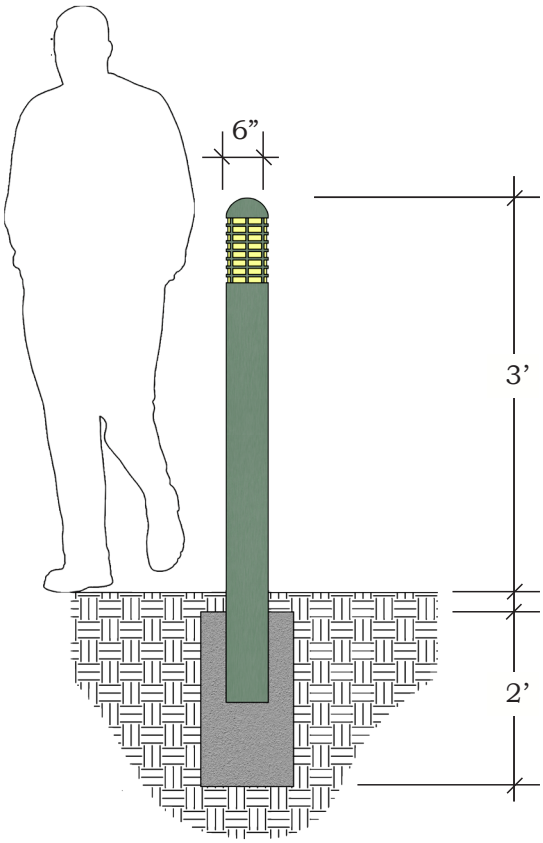
Education and Demonstration



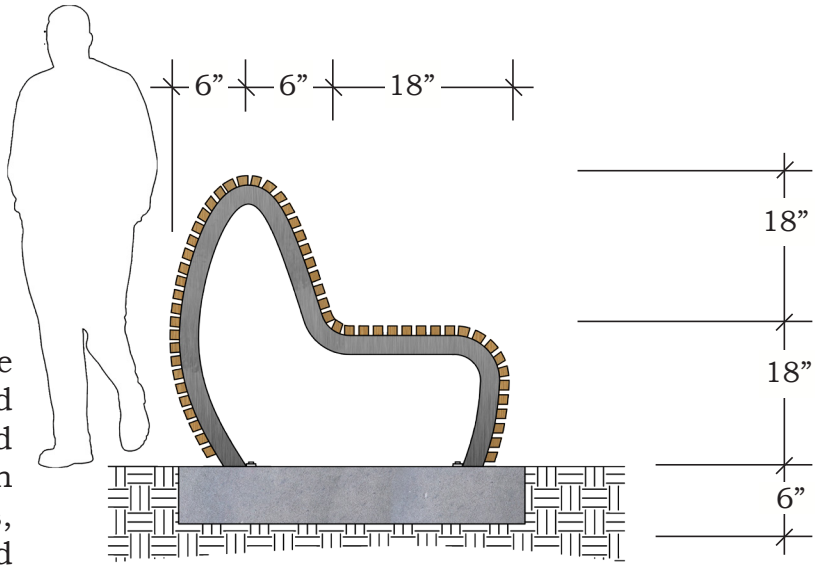
Education and Demonstration



Secondary Path Lighting

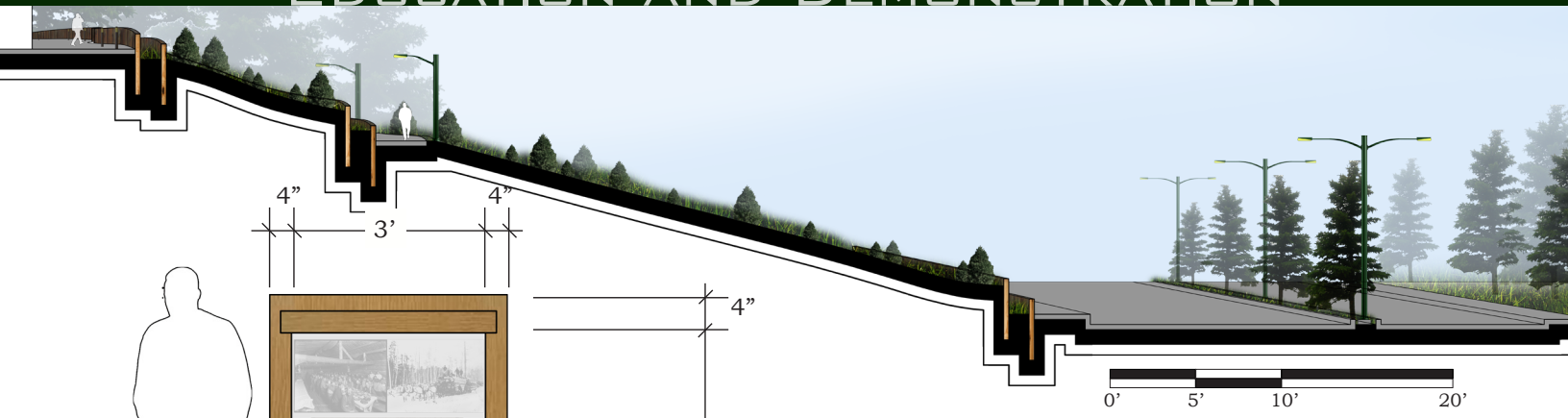


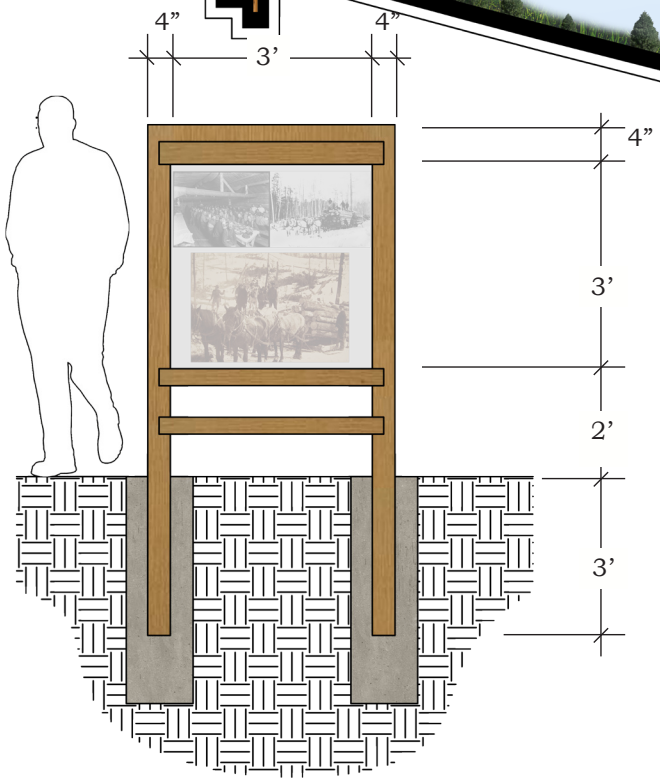
Tertiary Path Lighting



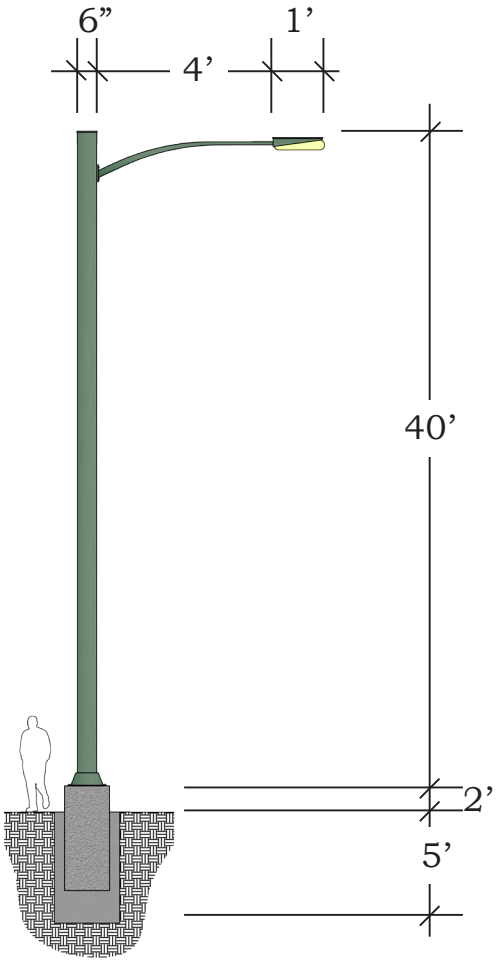
Park Bench

The park will be used to demonstrate how a forest is a living organism and it take time to become mature and stable. The fact that it is more than just having tall trees, the animals, runoff, and even the soil is effected by the stages a forest goes through.

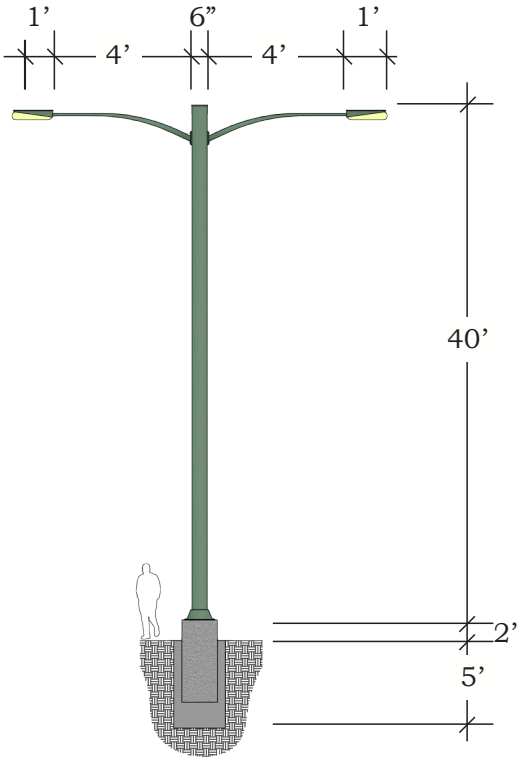




Park Signage



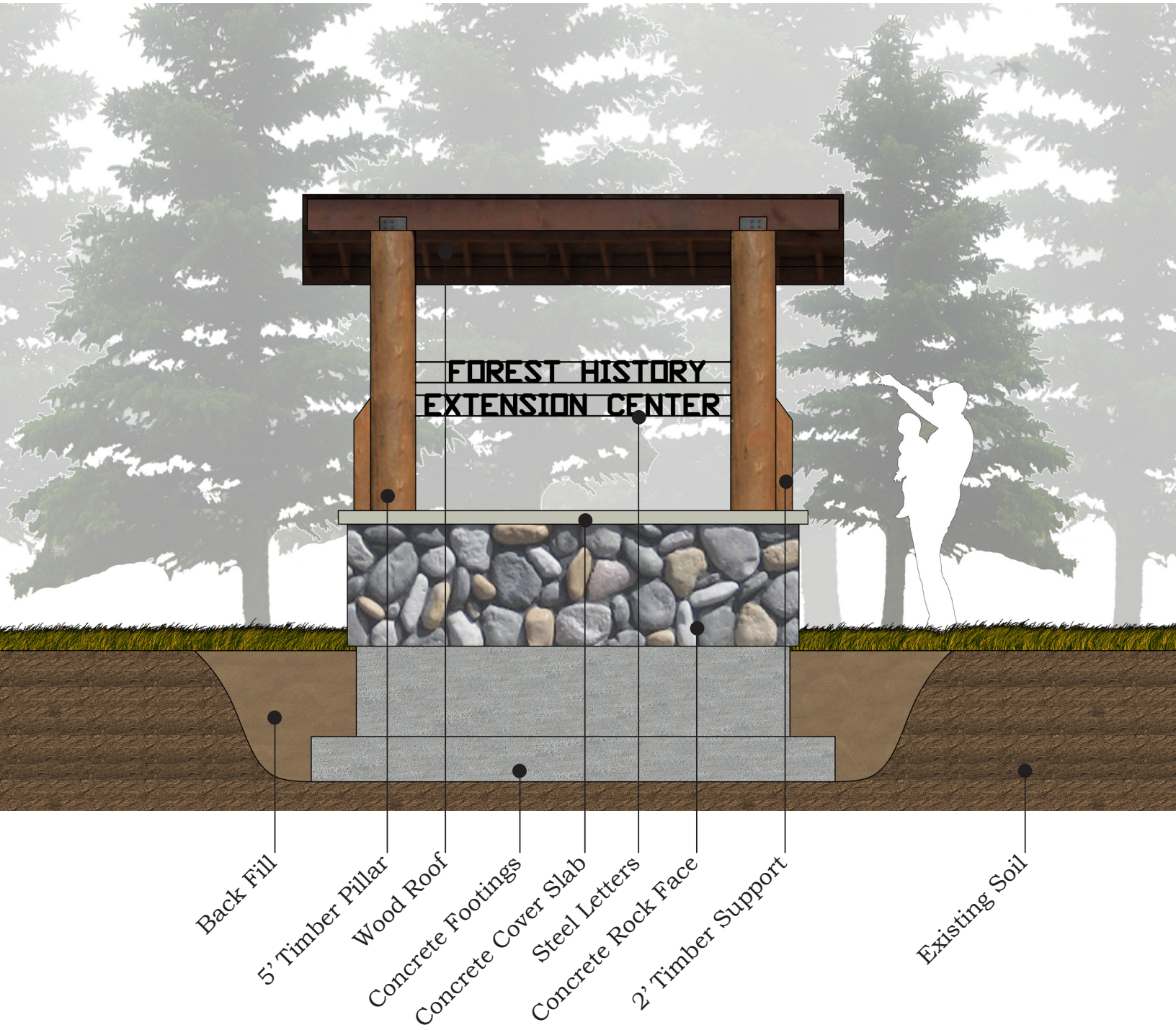
Major Street Lighting



Parking Lot Lighting

The park will be used to demonstrate how a forest is a living organism and it take time to become mature and stable. The fact that it is more than just having tall trees, the animals, runoff, and even the soil is effected by the stages a forest goes through.

Park Elements



Park Elements

Tree Schedule	Common Name	Scientific Name	Succession Stage	Height	Quantity
Hill Side	Jack Pine	Pinus banksiana	Grass Succession	7 ft	120
			Woody Pioneer Succession	30 ft	75
			Climax Succession	60 ft	40
	Red Pine	Pinus resinosa	Grass Succession	7 ft	80
			Woody Pioneer Succession	40 ft	50
			Climax Succession	90 ft	30
Boulevard and Parking Lots	Common Hackberry	Celtis occidentalis		50 ft	150
Developed Site	Jack Pine	Pinus banksiana		60 ft	-
	River Birch	Betula nigra		50 ft	-
	Sugar Maple	Acer saccharum		80 ft	-
	Red Maple	Acer rubrum		50 ft	-
	Red Oak	Quercus rebra		80 ft	-
	White Oak	Quercus alba		60 ft	-

The major trees that are going to be going into the demonstration park is Jack and Red Pines. These trees were chosen because they are the major logging tree in the area, and are already a prevalent tree found on site. The trees that are taken out will be reproposed throughout the design to keep the learning feature to the park obvious in all fashions.


Jack Pine


Red Pine


River Birch


Red Maple

Jack Pine from the surrounding area used in the signs, facades, and benches throughout the design.

Jack Pine Retaining Wall

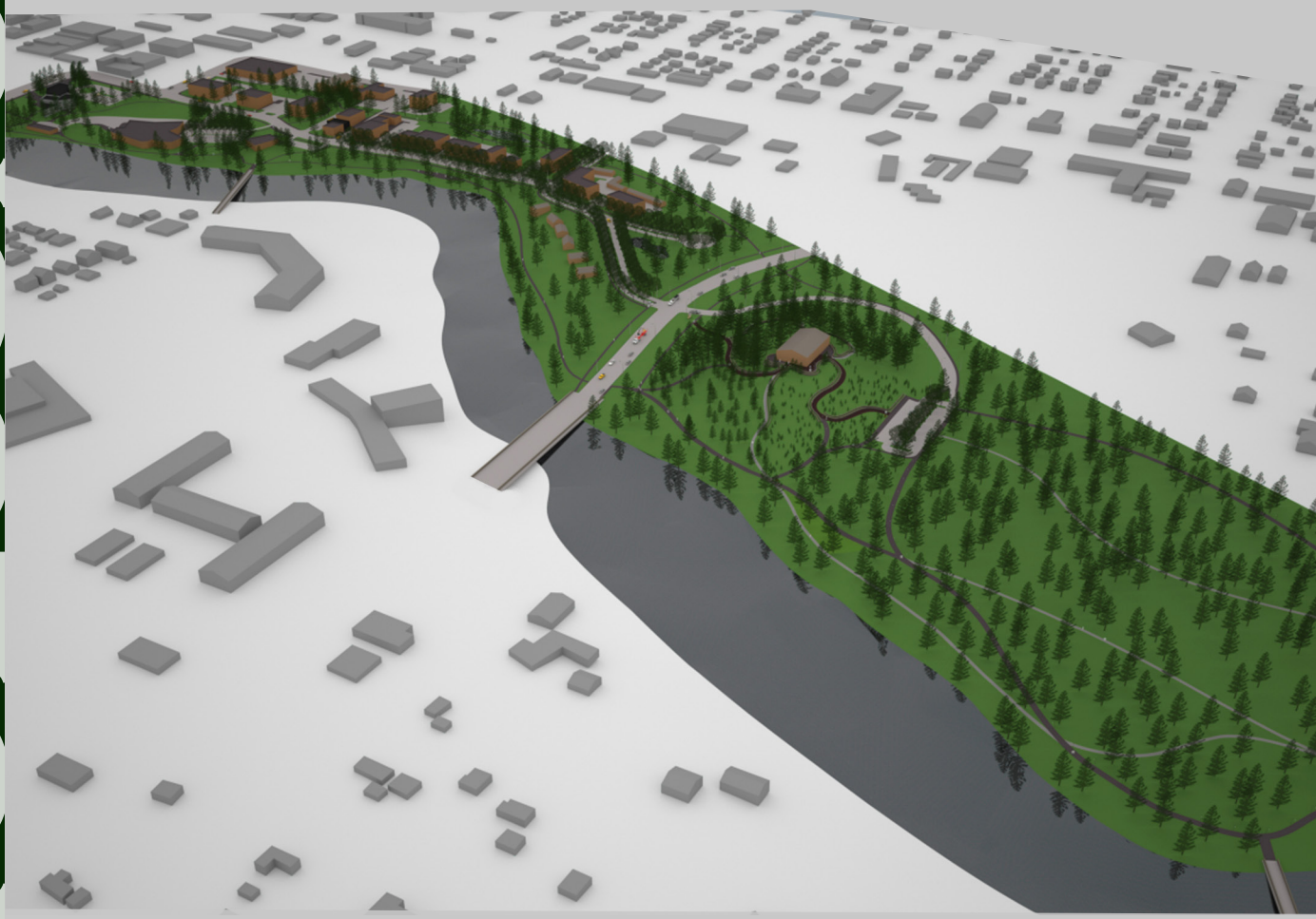
Concrete used for the secondary paths.

Crushed concrete used for the tertiary paths.

Rock faces and concrete used for the entrance sign resembling the area.

Brown brick used on the primary path to signify a logging road.

CONCLUSION



With the introduction of the extension park, the value of not only the riverfronts ecosystem will be observed but the forests in the area. A forest ecosystem used for logging will reconnect the city to the Mississippi River, link the history to the development, and educate with the demonstration park.

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Quote about NDSU:

"My time at NDSU has not been the easiest experience of mine but one that I believe will be completely worth all the late nights in the end. The social, personal, design, and intellectual growth I have been going through these past few years will greatly benefit me moving onto the work force."