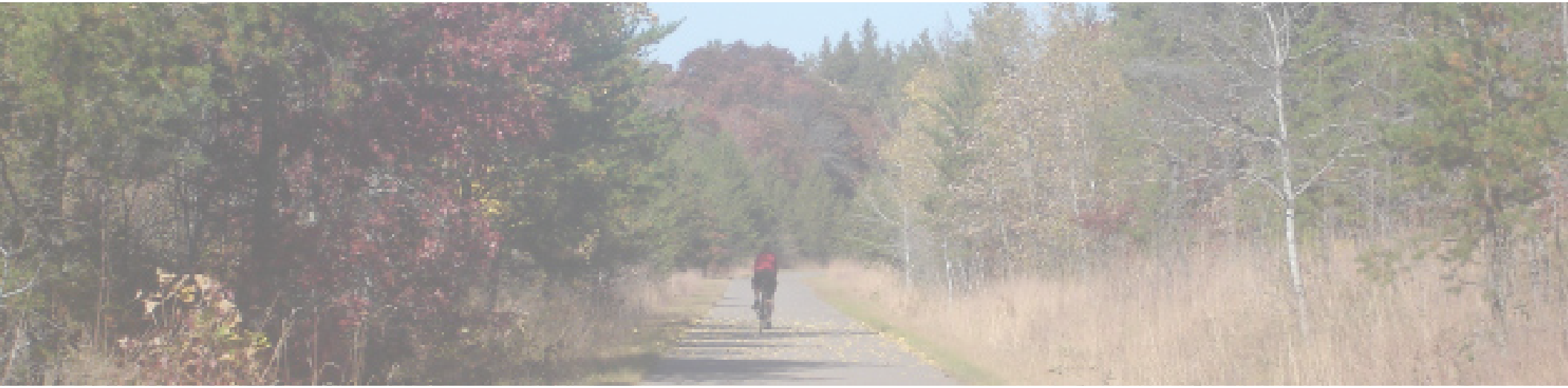
Social Corridors

Brainerd, MN



By:
Erik Twistol

NON-EXCLUSIVE DISTRIBUTION LICENSE

By signing and submitting this license, you Erik Twistol grants to North Dakota State University (NDSU) the non-exclusive right to reproduce, translate (as defi ned below), and/or distribute your submission (including the abstract) worldwide in print and electronic format and in any medium, including but not limited to audio or video.

You agree that NDSU may, without changing the content, translate the submission to any medium or format for the purpose of preservation.

You also agree that NDSU may keep more than one copy of this submission for purposes of security, back-up and preservation.

You represent that the submission is your original work, and that you have the right to grant the rights contained in this license. You also represent that your submission does not, to the best of your knowledge, infringe upon anyone's copyright.

If the submission contains material for which you do not hold copyright, you represent that you have obtained the unrestricted permission of the copyright owner to grant NDSU the rights required by this license, and that such third-party owned material is clearly identify ed and acknowledged within the text or content of the submission.

IF THE SUBMISSION IS BASED UPON WORK THAT HAS BEEN SPONSORED OR SUPPORTED BY AN AGENCY OR ORGANIZATION OTHER THAN NDSU, YOU REPRESENT THAT YOU HAVE FULFILLED ANY RIGHT OF REVIEW OR OTHER OBLIGATIONS REQUIRED BY SUCH CONTRACT OR AGREEMENT.

NDSU will clearly identify Erik Twistol of the submission, and will not make any alteration, other than as allowed by this license, to your submission.

Name:_____ Date:_____

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
Of North Dakota Sate University
By

Erik Twistol

In Partial Fulfillment of the Requirements
For the Degree of
Bachelor's of Landscape Architecture

Primary Thesis Advisor

Thesis Committee Chair

May 2011

Fargo, ND

Abstract

Social Corridors will demonstrate that recreational corridors in communities will increase the social and economic values to residents of a community. The project explores all the fundamental aspects of a passive recreational corridor and how they function in our Society. Stainability and conservation are key factors in our society. This project will investigate sustainable aspects of social corridors to a community.

Problem Statement

How can the design of passive recreation corridors in the city or community contribute to economic development and social functioning?

Statement of Intent

Project Typology: This will be a Landscape Architectural Project that explores natural connections.

The Claim: Recreational corridors can strengthen a community's economic heath.

Theoretical Premise/Unifying Idea: Recreational corridors can improve social functioning andeconomic development by creating movement through a community.

1- "The corridor is the theater in which society can be improved and create economic benefit to homeowners, businesses, cities and society as a whole." (Farland, 2007)

2- "Economic development and social functioning are two key elements in creating viable and secure communities." (Farland, 2007)

3- "Passive spaces are implied and less defined to attract people in a more relaxed way." (Farland, 2007)

4-"f the movement is passive the person experiencing the space will have the desire to use the space." (Farland, 2007)

Project Justification: The design and creation of passive recreational corridors in a community will strengthen the economy and will help connect its various communities.

Site Location:

Regional scale: Brainerd, MN – North central part of Minnesota

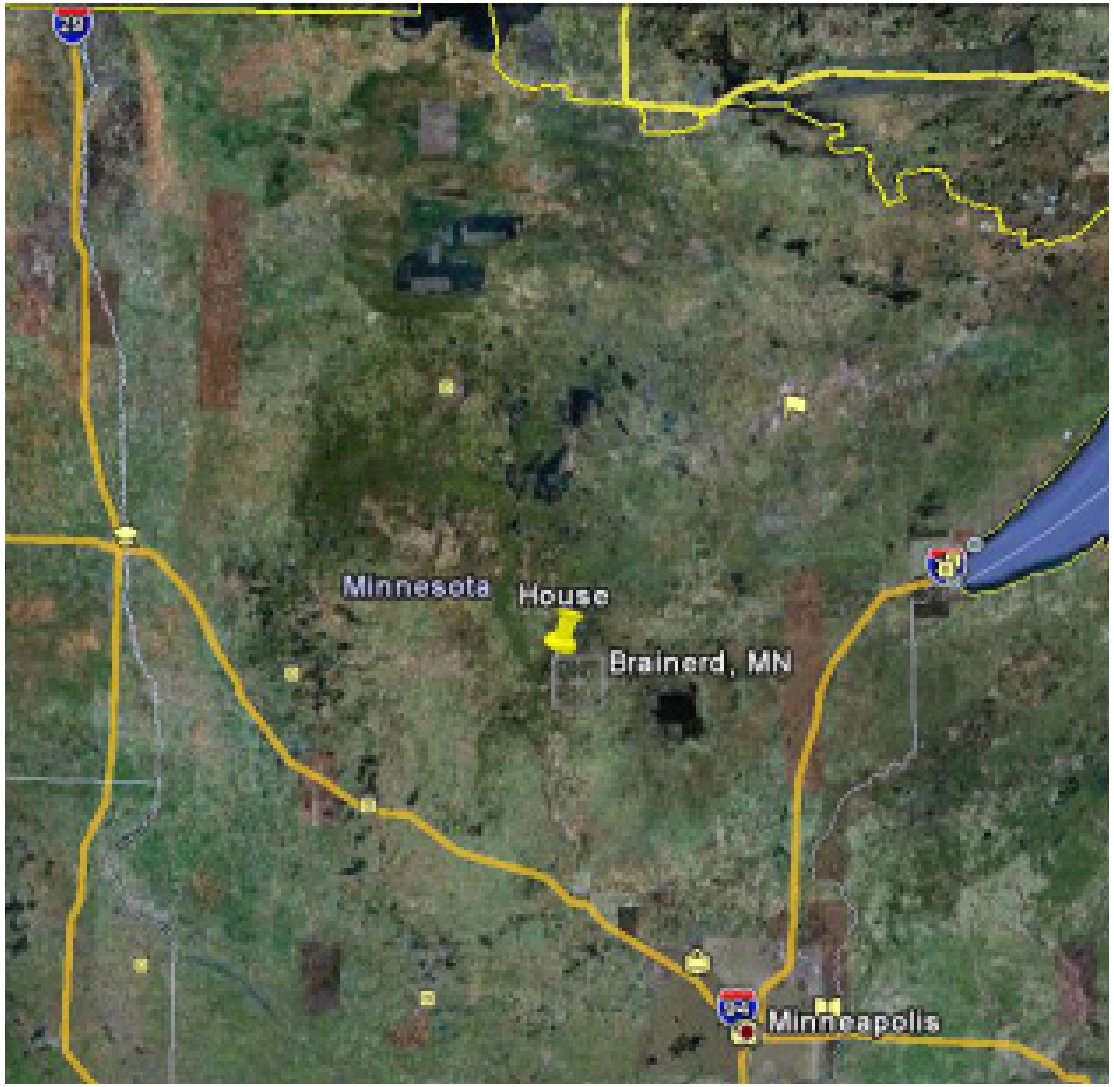


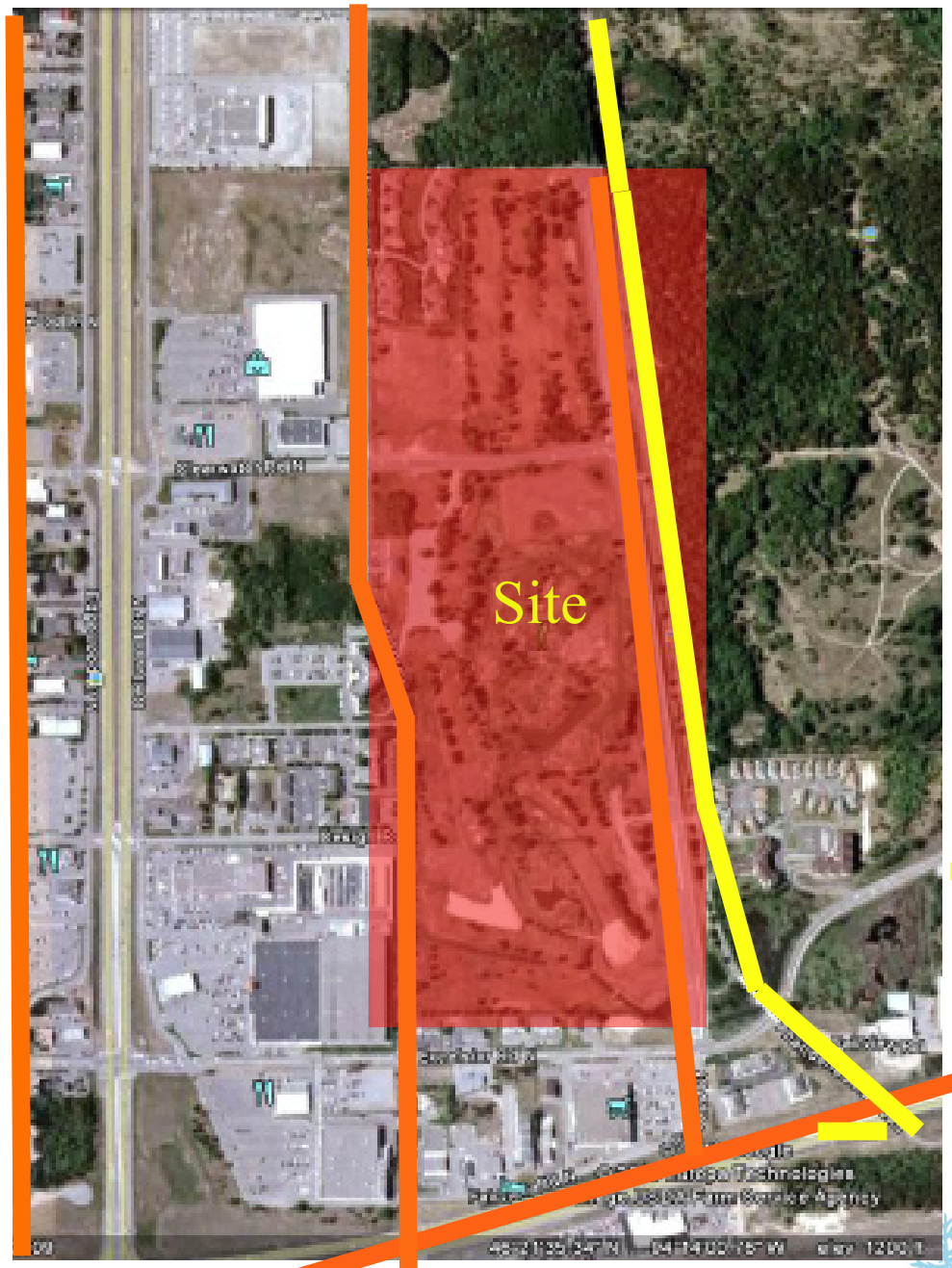
Image courtesy of Google Earth

Site Location:

City scale: West central part of Brainerd

Image courtesy of Google Earth

Site Information



Project Emphasis

The focus of this thesis is economic revitalization of a degraded site. The emphasis will be on how to provide economic opportunities to a degraded site through the inherit opportunities and assets of a passive recreational corridor.

Through the development of this site there may be opportunities on a macro scale to further develop other sites in proximity to passive recreational trails and corridors.

A Plan For Proceeding

A - Definition of a Research Direction

The project will further research case studies in the areas of economic development along trails/ pathways and the redevelopment of reclaimed use sites. The project will continue to research the methods of urban renewal and tourism anywhere to improve recreational site programming. Historical background and importance will be further conducted to seek design influences on the site. An extensive site analysis of the existing conditions of the site will be researched and used to determine the
potential outcomes of the site. After a site inventory is collected, detailed programmatic goals will be assembled with the inventory and analysis information.

B - Plan of Design Methodology

For my design methodology, I plan to use all of the tools to conduct a detailed design analysis, these methods shall include: quantitative economic data,is graphic and digital analysis and personal interview.

I plan to use all of these elements to develop a design from the analysis gathered. The information will be both demonstrated in graphs and in description and analysis of the gathered information.

A Plan For Proceeding

The documentation will be collected and presented in the form of maps, images and written data/ interviews.

The project information will be preserved in the thesis book/ document.

The project will be available in the Digital Commons upon completion and review.

The conclusion of the thesis will be presented to any community members that have interest in the project and/ or where a part in it, threw the means of a digital copy of the project. The conclusion will result in a master plan of a possible design solution and the ways possible to implement such a design.

The information will be collected by the completion of the category.

Theoretical Premise Research

Economic Impacts

In 2008 a University of Minnesota study on Economic impact found that the state spent more than $2.4 billion that year on it's trail systems. The study also concluded that about 30,900 full and part time jobs where supported due to the trail in the state. (Webel, 2000) The most popular activities found by the study where Walking and hiking but it also found many other activities to like biking, running, inline skating, ATV riding, snowmobiling, cross-country skiing, and horseback riding to all be activities preformed on the trail systems. ("2010 best trails," 2010)

Nationally, many studies have demonstrated that parks, greenways and trails increase nearby property values. With higher tax values in areas around trails, added revenue is generated to help fund these natural byways. In one example of the economic returns of these areas was found in California , Where its was estimated that an initial investment of $330 million would return $100 million per year in tax revenue.

(Webel, 2000)

Another example of the same type of economic benefit was also accomplished in Boulder, Colorado where a greenbelt increased tax revenue by $500,000 per year in one neighborhood. The initial cost of $1.5 million to construct the greenbelt could be recovered in three years from its added ta value.

(Webel, 2000)

Theoretical Premise Research

Economic Impacts

A third example of the economic impacts of trails, parks and greenways can be seen in philadelphia's Pennypack Park. Here the 1,300 acre park brought in about 33% of the land value within forty feet around the park. The park also brought in 9% of taxable value within 1,000 feet from the park. (National Park Service, 1990)

Greenways, trails and their associated activities on them can also aide in the recreation of business and employment in the area. According to the National Park service Residents are spending more of their vacations closer to home and are spending increasing the amounts of their money within the boundaries of the state rather than visiting other states.

The benifits of greenways and trails overall are positive to a community, they increase local business and provide additional jobs to the community. The increased use of an area will increase local revenue to area businesses. (Crain, 1988)

Theoretical Premise Research

Trail Usage Research

To further support the benefits of trail systems an article and research on three Denver, CO trail systems will demonstrate communities reactions to trail systems. The studies explored in this thesis are from American Trails database, which is a primary resouce used in my research. For more information on any trail system in the united States, visit www.americantrails.org.

In 1994, data was collected via phone interviews of residents who lived adjacent or in close proximity to trail systems. The Denver Post also surveyed realtors and Police officers who work with the trail systems. The results showed the following: "urban trails are regarded as an amenity that helps to attract buyers and to sell property. For residents of single family homes adjacent to a trail: 29% believed that the existence of the trail would increase the selling price of their home (and 43% said it would have no effect). 57% of the residents felt that the trail would make the home easier to sell (with 36% saying no effect). 57% of these residents had lived in their homes prior to construction of the trail 29% of those surveyed were positively influenced by the trail in their decision to buy the home." (Crain, 1988)

Theoretical Premise Research

Trail Usage Research

The 1994 Denver study also surveyed local relators with the same survey and found the fallowing results: "73% believed that a home adjacent to a trail would be easier to sell 55% agreed that the home would sell for more than a comparable home from a different neighborhood 82% of real estate agents used the trail as a selling point 100% believed trails are an amenity to the community around it." (Crain, 1988)

The summury of the study concluded this:

"concerns that urban trails might adversely affect public safety and property value in surrounding neighborhoods are not substantiated by the results of this study. The effect of a trail is beneficial, rather than detrimental." (Crain, 1988)

From this study it is demonstrated that trail systems are proven to be a positive asset to a community and the community can benefit from a trail system in close proximity. (Crain, 1988)

Theoretical Premise Research

Trail Usage Research

A fourth study conducted in Schenectady County, NY in 1997 was conducted by the NY Department of planning. The Department surveyed property owners with land adjacent to the Mohawk-Hudson Bike-Hike Trail. The overall goal of the study was to analyze the impacts of the trail system on surrounding neighbors, as well as the whole community. (SCHENECTADY COUNTY, 1997)

Questionnaires in this study were mailed to 315 residences in the area that had property adjacent or across the street from the trail. The results were returned with 215/ 315 mailed or 68% of homeowners. They found that the uses of the trail were as fallows: 44% bicycling, 31% walking, 18% running, and 7% in-line skating.(SCHENECTADY COUNTY, 1997)

Overall, residents reported that living near the trail system exceeded their expectations that they originally anticipated. They also stated that the quality of their neighborhood had increased due to the trail system. The benefits considered most important by landowners were safe opportunities for recreation, health, and fitness. The study found that 40% of adjoining households used the trail daily or frequently. Only 14% never use the trail. (SCHENECTADY COUNTY, 1997)

Theoretical Premise Research

Economic Impacts

Minnesota's trails are primary used in the warm months of the year, over 1.5 million cyclists, inline skaters, and walkers use the state's nationally-recognized city, county, and state trails. These trails offer a better quality of life to residents and also attract many neighboring guest to our great and friendly state. Other than the warm seasonal usage of the states trails, Minnesota's trails also attract just as much use in the cold winter months. Minnesota's trails are great in the winter for snowmobiling and cross country skiing. Users of the states trails love to get out and enjoy the breathtaking views of our great state and experience the ever changing landscapes (Feeney, 1997).

To better understand the economic impacts of trail systems in the state its important to look at the overall averages of the trails. The average user is 48 years old, mostly male, college educated with an income of $35,000 -$75,000 per year. This basically states Minnesota's trail users are middle class society members with the tendency to spend more money on recreation. Minnesota trail users have a $10,000 higher per year income, which means they have a higher ability to benefit economic development along the tail systems they use. (Feeney, 1997).

Theoretical Premise Summary

Economic growth and sustainable communities can be created and catalyzed upon from the development and placement in proximity to recreational corridors. As demonstrated from the theoretical research passive recreation corridors can increase community and economic resilience as well as increase social functioning.

Minnesota has some of the country's most extensive recreational trail systems in the country. These trails provide spaces for social functioning, actives, hobbies, and a way to connect with the state's beautiful landscapes. These recreational corridors can contribute to the strengthening of the economic health of the community it coincides with.

As shown from some of the studies above in the research it is proven that greenways, natural byways and recreational corridors can stimulate economic growth and development in a community. These corridors can increase property value, resale capability, and attract visitors with economic capital to the community.

Theoretical Premise Summary

This theoretical research demonstrates how The Brainerd Lakes area and its vast recreational trail system can help stimulate its local economy.

The Brainerd Lakes area posesses a perfect example of a recreational corridor that could be further developed and connected with the community to better the economic stability. With allocation and proper design of adjacent lands to a recreational corridors the community can become better sustained and can offer further economic growth.

The usage of recreation corridors by residents is proven to be high in the studies if people are in proximity to the corridor, thus ncreasing usage and economic value to the community.

The inherent evidence that recreational corridors strengthen a community and it's economy is key to this theoretical premise and will be further demonstrated through the design process.

Design Case Study
River Walk, Grand Forks, ND

The Grand Forks/ East Grand Forks greenway can be found about 190 miles from the Brainerd Lakes area in Neighboring North Dakota. This Green way is a unique trail that combines natural beauty of the Red River of the North with urban sections of the two cites bordering the river. The Tail is a large Green way constructed on the Red River's flood plane and provides over 20 miles of hard surface trails, half of it looping through the two cities and uniting the two cities with a trail system. The trail system also connects up with other trail systems in the area to make up 40 miles of trails in the community. (Macdonald, 2007).

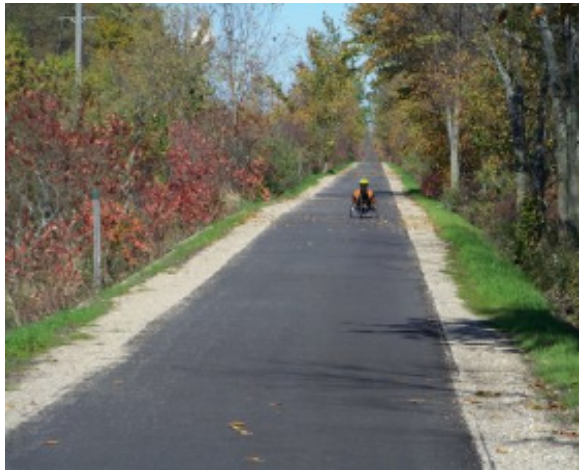
The greenway trail system provides minimal interactions with vehicles and pedestrians. The design has incorporated several access points in area neighborhood to make use easier for the user. The design also features a trailhead with rest room facilities, trash receptacles picnic areas, benches, playground equipment and other convenient appointments for tail users (Macdonald, 2007).

Design Case Study
River Walk, Grand Forks, ND

The history of the river walk is an important aspect in the development of this trail system. When the Red river and the Red Lake River flooded in 1997 the US Army Corps of Engineers founded a plan to protect the city with this greenway. Hundreds of homes were bought and moved or demolished to make way for the greenway, thus moving residents out of the flood plane and creating this great recreational area. The Engineering of the flood wall and dike system was a way to protect the cities and the trail system was the recreation value to the overall design, that is an asset to the communities. (Mcdonald,2007)

Occupying over 2,200 acres of natural green space in the heart of the two communities the design has several parks, camping, golfing, disc golfing, and vast trails for all other summer and winter activities. The recreational area also provides learning areas and information on history and natural elements of the area. (Mcdonald,2007)

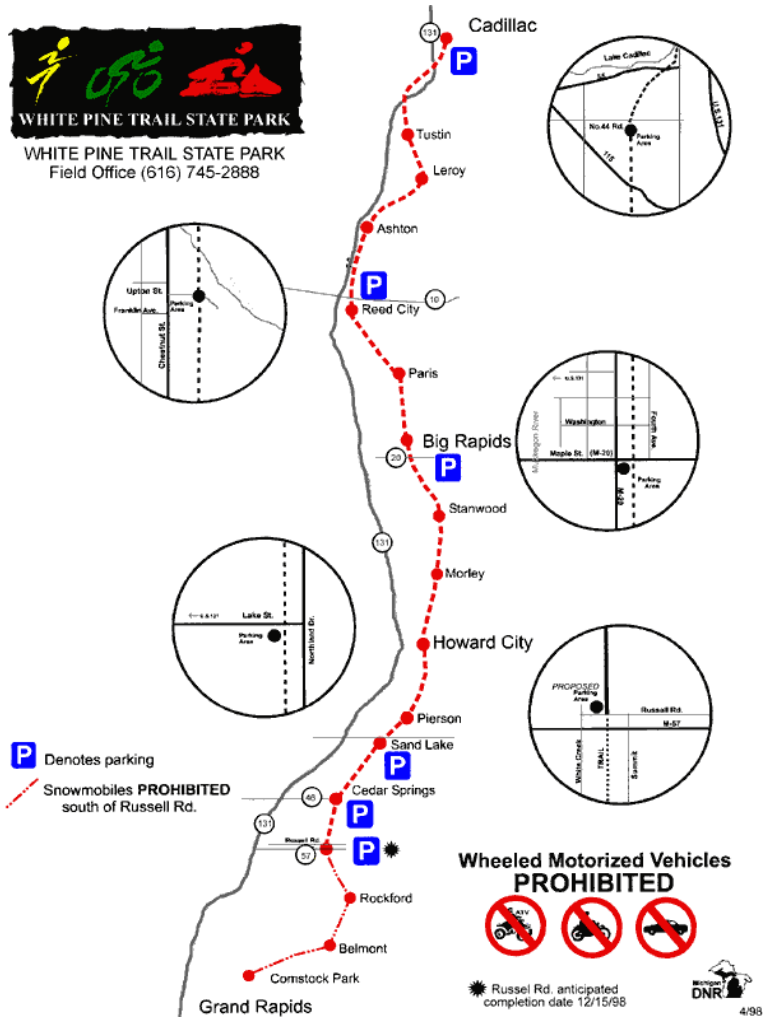
Design Case Study
White Pine State Park Trail, Grand Rapids, MI



The White Pine State Trail is a 92 mile from rail to trail development. The trail is paved and open to non-motorized uses except snowmobiles. The Trail is managed by the Michigan Department of Natural resources with some funding from a non-profit group, Friends Of the White pine Trail. Some additional funding comes from snowmobile permits that are required to ride sleds on the trail. Some of the challenges with this trail system, like many others is funding to maintain the trail. Much of the needed funding needs to originate from legislation and the process takes time to achieve (Meijer, 2007).

The fallowing study conducted in 2006 was preformed to access the impact of the trail on adjacent landowners and businesses. overall it found only 2% of bussinesses and 1% of landowners thought the trail had a negative impact on their land or community (Kristen Steger, 2006).

Design Case Study
White Pine State Park Trail, Grand Rapids, MI



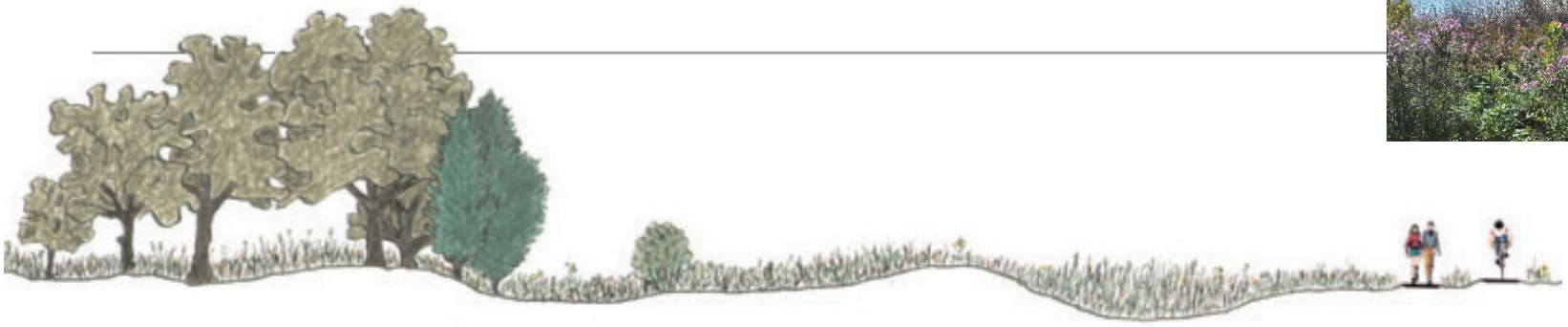
The study showed these numbers in detail: "Eight in ten adjacent businesses and residents believe the WPT has a positive influence on the community and Kent County as a whole, while only 2% of businesses and 1% of residents believe the trail has a negative influence on the community and Kent County." (Kristen Steger, 2006)

"The majority of residents (72%) stated that the WPT has increased recreation opportunities, 68% health and fitness, 68% their personal enjoyment and 65% their community pride." (Kristen Steger, 2006)

Design Case Study
Cedar Lake Park, Minneapolis, MN

Cedar Lake is a lake on the west side of Minneapolis, north of Lake Calhoun, which is an upscale neighboring community in Minneapolis. The lake is surrounded by parkland on the west side, while the east side borders the Kenwood residential area. The park like feeling aginst the skyline of the city has a large impact. ("Cedar lake," 1997)

Design Case Study
Cedar Lake Park, Minneapolis, MN



Cedar Lake is part of the Grand Rounds Scenic Byway, connecting with Theodore Wirth Park on the north end and Lake Calhoun and Lake of the Isles. The area is a great example of how to intergrate recreation with a functonal way of commuting to the city. The project addresses the programatic problems of recreationial corridor connections and linking the community with other communities. ("Cedar lake," 1997)

Design Case Study Summery
River Walk, Grand Forks, ND

The Greater Grand Forks Greenway is an extensive recreational pathway system that was developed in the flood plain area of the Red River. This area was designed as a levee area for the river after the great flood of 1997. The significance is this area is usable 95% of the time but in flood season the land could be over taken completely by water. 95% of the time the land serves as a great extensive recreational corridor that connects East Grand Forks, MN with Grand Forks, ND. The Greenway is a good example how to stimulate economic development along land that at times is unusable and uninhabited. This space attracts people to the downtown regions of the two cities creating economic value to the community.

Overall this case study is slightly different from the others featured in this theoretical review because the pathway system because it was created on the need for flood protection rather than for recreation at first.

Design Case Summery
River Walk, Grand Forks, ND

The greenway is multifunctional in that it capitalizes on land that is uninhabited but makes one of the most scenic areas of the city for people of the community to use. The drawback is that to implement this type of design there must be a body of water present or a flood plain. ATV's and Snowmobiles are currently not designated on the greenway, but in winter there are special events that feature snowmobiles on the greenway and the river.

The Typology of this case study varies from others because it was created on a need for flood protection rather than to connect communities and stimulate local economies. The design is successful due to the fact it monopolizes on land that was detrimental to the community and now is an asset and an essential part of the cities survival.

Design Case Study Summery
Cedar Lake Park, Minneapolis, MN

The Cedar Lake Park area is a good example of urban renewal and economic development. Cedar Lake Park was created on land that was acquired by community members to help protect the area from further development. The project started small and has grown to a massive city project. Much of the pathway system is constructed upon old railroad beds and around several lakes. The goal of the pathways is to provide recreation and further connect communities. The design focuses on restoration and sustainable practices around the bodies of water. The emphasis is to create habitat and recreation in the city.
This is a good example of economic development to a community through recreational corridors. The master plan connects the communities well and creates many spaces for passive recreation within the city. This project is on the high end of the funding and aggressiveness of a pathway connection project. The development of this project has saved land from being commercialy developed and has created Green space, which in return should raise property values and beauty to the community.

Design Case Study Summery
White Pine State Park Trail, Grand Rapids, MI

White Pine State Park Trail is 92-mile DNR controlled trail system that his very comparable to the Paul Bunyan Trail in Brainerd, MN adjacent to my thesis site. It was also constructed from a old rail road bed and is close to the same length. Both trails have the same functions and uses, in the winter snowmobiling, cross-country skiing and in the summer biking and walking. Both are DNR controlled and connect several rural type cities. The White Pine Trail has had some extensive research conducted on the impact on surrounding businesses and residents in proximity to the trail and this type of data helps show the possible outcomes of development along a trail of like both the White Pine and the Paul Bunyan Trail. In the research people in close proximity overall value the trail and consider it an asset to their community, business owners within close proximity also feel that the trail has a positive impact to their community.

Design Case Study Summery
White Pine State Park Trail, Grand Rapids, MI

Grand Rapids, MI is also a very comparable city to the Brainerd – Baxter area and I feel outcomes of any research my be very similar. This case study may serve as a good control group or contrast to my future research conducted in Brainerd and the Paul Bunyan Trail. This Case study also gives the financial and age backgrounds of the residents surveyed, I think that these statistics will be useful in contrast with my research in the Brainerd area.

Picture owned by Erik Twistol

Historical Narrative
The Paul Bunyan Trail

Located in the heart of Minnesota, the Paul Bunyan Trail is one of the highest quality and most senic recreational corridors. Taking about 20 years in fund raising and organization, the Paul Bunyan Trail opened in 1993. The history of the Paul Bunyan Trail started in the 1970's in Pine River, a small town about 20 miles north of Brainerd, MN.
(McGaughey, 1999)

In the 70's transporting goods by train declined and many products were being shipped by truck rather than rail. Pine River was the last user of the rail road, here a small wood manufacturing plant sent and received about four rail cars a day. By the early 1980's Burlington – Northern closed the rail line to Pine river and the manufacturing plant switched to moving materials completely by truck. The Pine River Depot then closed and local businesses in the small town suffered from this closure. Without rail road workers staying in town the local economy declined.
(McGaughey, 1999)

"It will never happen." "We have enough trails already." "We can't afford to maintain the ones we have, and we certainly don't need another 100-mile trail." – Terry McGaughey,, 1988

Historical Narrative
The Paul Bunyan Trail

The Founder of the Paul Bunyan Trail was Terry McGaughey, a local real estate broker with a desire to help the small town community effected by the closure of the rail road. McGaughey researched recreational trails and how they could be used year around by snowmobilers, bicyclists and hikers. At first, people didn't understand how a trail system could bring positive growth and renewal to their community.
(McGaughey, 1999)

In 1983, McGaughey presented his information on the benefits of the proposed trail to the chamber of commerce, the city council members supported his proposal. He presented information on a 27 mile rail to trail from near by Walker to Park Rapids, that was successful. (McGaughey, 1999)

Picture owned by Erik Twistol
The largest and most senic bridge of the trail where it crosses a street in baxter.

Historical Narrative
The Paul Bunyan Trail

After gaining his first group of supporters, McGaughey spoke to an additional 16 communities in the area gain more support for this vision. McGaughey presented information on the safety issues and demonstrated that the trail would be a safe addition to the communities. McGaughey would speak to anyone who would listen to him and his proposal and through this he found other allies to support him. Eventually these supporters joined him to form the Paul Bunyan Trail Task Force. From 1983 to 1988 the task force gathered hundreds of supporters for the proposed trails. After gaining support the project was ready to seek legislative support. The Project first gained $300,000 in funding of the $1.2 million the state had to allocate for trails in the 1989 session.
(McGaughey, 1999)

Picture owned by Erik Twistol
A tunnel where the trail crosses the high traffic hwy 210.

Historical Narrative
The Paul Bunyan Trail

Shortly after the Paul Bunyan Task Force secured $1.5 million in bond bills for the project due to the help and support of other organizations like the Minnesota Parks & Trails Council, the Minnesota United Snowmobiling Association, the Minnesota Horse Council. Planning for the trail could now begin, the Minnesota DNR started drawing the master plan by 1992. Many meeting and revisions took place and bridges where constructed for the countless bodies of water the trail crossed. The master plan the DNR drafted was adopted by the state in May of 1994 and the trail became a ten foot wide paved trail that was ideal for skaters and bicyclist. The trail was also a great solution for hikers and snowmobilers with its pavement and width. (McGaughey, 1999)

The main goal of the trail was to create a better economic opportunity for the area and to bring people to the community of Pine River and shortly after the trails completion it was inherent it was successful. (McGaughey, 1999)

Picture owned by Erik Twistol
Looking down the Paul Bunyan Trail

Historical Narrative
The Paul Bunyan Trail

In Pine river a local 30-unit motel added on a fitness center to accommodate new trail visitors. The local Dairy Queen built a new building on its site and a new gas station was built on the edge of town, close to the new trail. In near by Merrifield a new motel was built by the trail. These several examples of economic development are just some of the economic results from the creation of the Paul Bunyan Trail. Other similar development has occurred in neighboring communities with proximity to the trail. These economic developments create added local tax bases, jobs and revenue to the community from tourism. In the end the Paul Bunyan Trail in total is 210 miles, with 100 miles of it that wind around 21 lakes and 9 rivers. The small towns the trail bisects are a comfortable 8-10 miles apart and the trail has state parks at both ends of it. The landscape the trail rest on consist of some of the most scenic diverse landscapes in the area. (McGaughey, 1999)

Picture owned by Erik Twistol
Small wooded trails adjacent to the trail.

Historical Narrative
The Brainerd - Baxter Area

The Brainerd Lakes Area started in 1873 as a railroad town, which was the primary industry in the region. The founder of Brainerd was John Gregory Smith, who was president of The Northern Pacific railroad. By the 1920's over 90% of the city's economic dependence was reliant on the railroad. As technology of the railroad system has improved most of the railroad jobs and economic development has moved out of the brainerd. Currently most of the local economic basis for this community is reliant on tourism in the area. The growth of the city has spread to neighboring Baxter, where most of the retail and shopping developments are located. The focus of development is on the Baxter side of town and is slowly creeping north towards the lakes and the popular tourist areas. (McGaughey, 1999)

As a direct result from this shift of movement tourism has shifted from some of the attractions in certain areas in Brainerd, causing sites to be come vacant and remain for sale. As a member of the community it was been obvious this change has occured.

Picture owned by Erik Twistol
Apartment building to the East of the trail.

Historical Narrative
Demographics of Brainerd - Baxter

Brainerd

Population: 13,770 residents
Population Density: 1,727 people / square mile
Size:7.97 square miles
Medium family Income: $31,057 year
Unemployment rate: 7.2%
Average Home Value: $111,598
Largest Ethnic group: White, 95.4%
All Information is based of 2009 statistics
(Onboard Informatics, 2010)

Baxter

Population: 8,411 residents
Population increase of 51.4% from 2000-2009
Medium Family Income: $63,068 per year
[1]Population Density: 486 people /square mile
Size:17.3 square miles
Unemployment rate: N/A
Average Home Value: $200,610
Largest Ethnic group: White, 98.2%
All Information is based of 2009 statistics
(Onboard Informatics, 2010)

Historical Narrative
The Brainerd - Baxter Area

Overall, the Brainerd – Baxter area was founded as a railway town and has expanded into a tourism community. With 460 lakes within 25 miles of the Brainerd area the area is a very popular tourist area and has many seasonal vacation homes in the area. Many of the homes are very large, expensive homes on the shores of Gull Lake, a large lake located 5 miles north of town. Outdoor actives drive the local economy of the Brainerd area, including boating, fishing, hunting, biking, hiking, ice fishing and snowmobiling. (McGaughey, 1999)

Due to the strong tourism economic ties of the community and area it is obvious to further develop an area that has failed economically. Using the historical relevance, and the Paul Bunyan Trail history i will develop my design to incorporate those aspects.

Picture owned by Erik Twistol
Paul Bunyan at the visitor's center on Hwy 371 south.

Goals of The Thesis

This thesis will have three main goals within it's framework: academic, professional and personal.

On the academic level this thesis will show my design skills I have obtained over the past 5yrs as a student at NDSU and will demonstrate my knowledge of the study of landscape architecture. My thesis will take a vast diversity of educational knowledge and explore all possibilities to the project. As a capstone project of my education I plan to take my thesis to the highest quality of my academic career.

As a design professional I will demonstrate all the professional skills that I have acquired throughout my designing experience. I will use precise data and information to
execute a functional and sustainable plan for my thesis site. My thesis project will prove to be the most independent and demanding

Goals of The Thesis

On the personal level I have chosen this site in the Brainerd area because I have recently decided to become a resident there and a community member. Even though Brainerd isn't my hometown it is in proximity to my family and business so I chose this area to live. I have all ways liked the Brainerd lakes area and bought a home there in 2009. I feel a dedication and love for the community. My knowledge of the community will aid in my thesis proposal and design. Although I have knowledge of the area I am fairly new to the area and have a new outlook of the community. My thesis will incorporate my practical business skills and also my learned design skills to form a proposal the is appropriate for the criteria.

Overall I hope to bring my design knowledge, education and community driven desire to this thesis proposal.

Site Analysis
Photo Inventory

Picture owned by Erik Twistol

Picture owned by Erik Twistol

As pictured above here, the site is wooded with a mixture of native vegitation and is bordered by roads. The land is mostly level and good land for further development.

Looking south down dead end boulevard south, the large road dead ends to the north of the site. This is a great, wide street, that really has no function in the area. This road could be utilized and beautifed in the design of this site. A clear use of this street must be established.

Picture owned by Erik Twistol

Picture owned by Erik Twistol

Site Analysis
Photo Inventory

Picture owned by Erik Twistol

Picture owned by Erik Twistol

Above: looking West onto the site, oone can see the mature wooded nature of the site and the vacent state of the site. The large bi-way swands between the site and the Paul Buyan Trail.

Picture owned by Erik Twistol

Picture owned by Erik Twistol

Above, looking East onto the site a for sale sign has been standing here for several years and a snow fence keeps people from entering the site.

Site Analysis

Located in Baxter, MN several hundred feet from the Paul Bunyan Trail this site is an 80 acre vacant parcel of land. The site was previously a Golf Course several years ago, but due to the poor economy the site structures where removed and the site remains for sale.

The zoning of this site is mostly commercial to the south and some residential to the far north of the site

The once well maintained greens of the golf course have now returned to there more native weed filled field state. The trees consist of various species of pine and oak trees which are an asset to the site, they are mature and average about 30' in height.

The site contains several small ponds and drainage ditches that appear to be important to the sites storm water run -off.

Image retrieved from Goole Earth

Site Analysis

Roadways/ Pathways:

West: Golf Course Drive
East: Unnamed Boulevard
Paul Bunyan Trail
South: Excelsior Drive

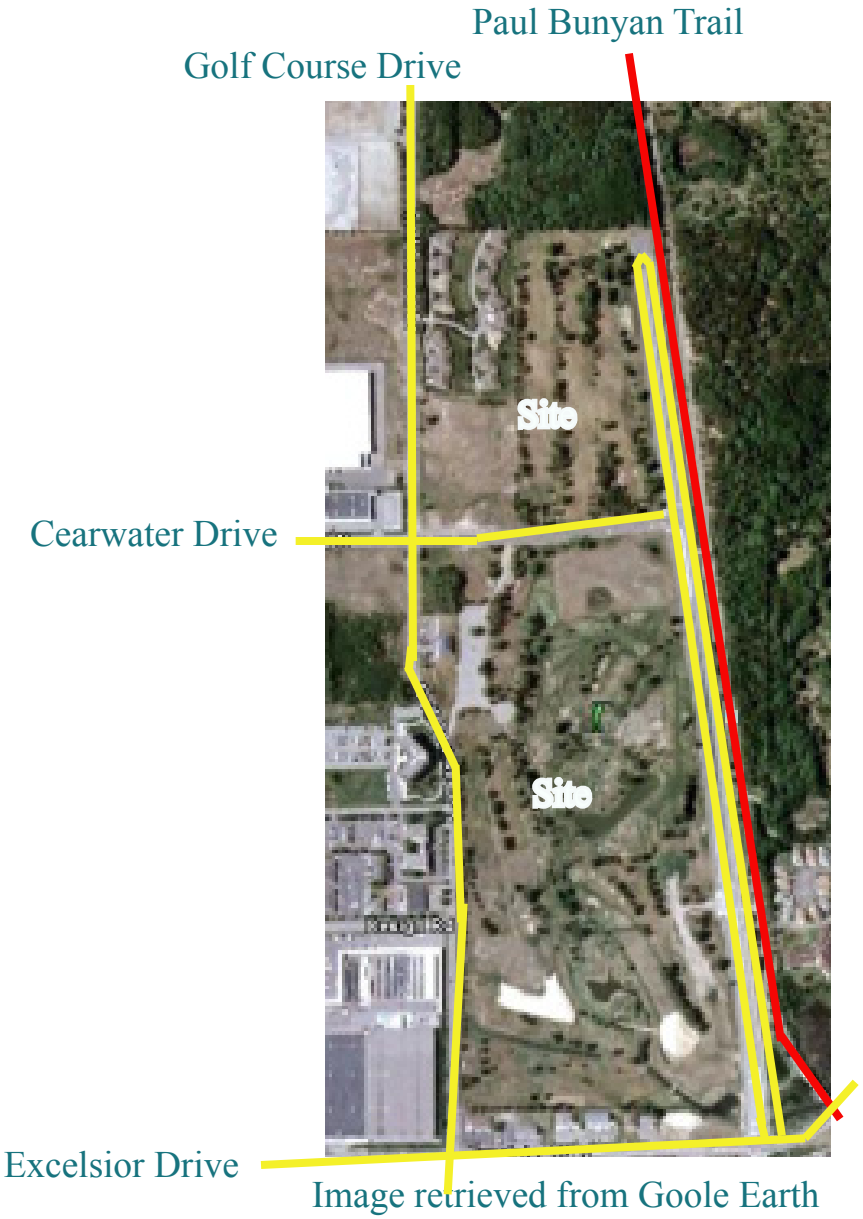


Image retrieved from Goole Earth

Site Analysis

The site conditions are generally appealing for any kind of further development. The site is blank and has remained not cared for and used since the closing of Pine Meadows Gold Course. The topography is gradual with some rolling hills, but for the most part is flat. The soils appear to be in good condition with no erosion visible. The noise and light pollution quality is good, very little of either, the only motor type pollution is from excelsior Drive to the south.

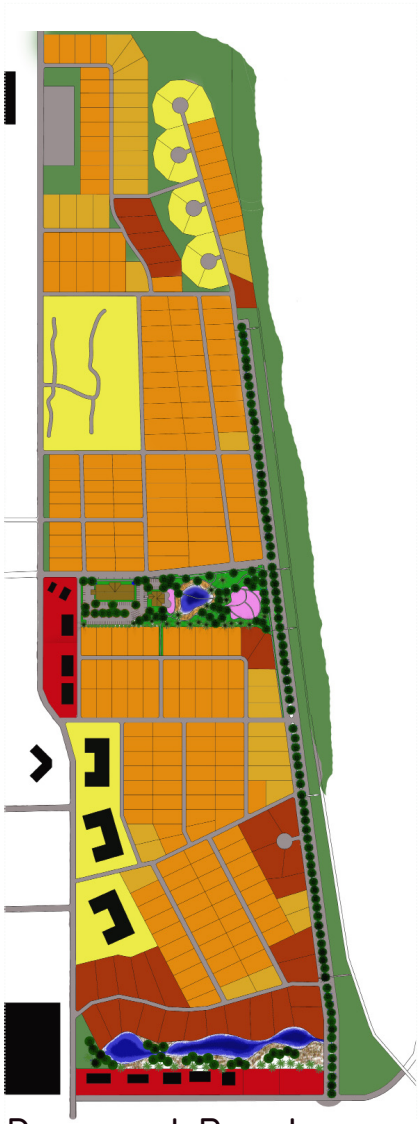
The view sheds are very appealing from the site looking North or East wooded scenery is present. Looking to the south and East some commercial buildings are visible but it has a minimal impact on the site.

The overall sense of place is a feeling of wooded savanna in the city, with access to nature only foot steps away. The site is on the thresh hold of the woods and the city, which gives it a unique feeling.

Existing Vegetation Vs. Developement

These Two Maps show how the existing vegetation drove the development of roads and property lines. In my design roadways and property lines are places to minimize destruction of the existing vegetation. In the Northern most part of the development more vegetation had to be thinned out due to the intensity of it.

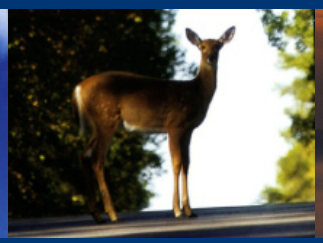
Existing Vegetation Map



Proposed Development master Plan

Spirit of Place

Escape,Relaxation, and Recreation are three words that capture tbe Brainerd Lakes Area. The feeling of this area is laid back, friendly, local, and small town northern Minnesota, making it an ideal destination for its visitors. Most visitors to the area are seeking connection with the beautiful landscapes and to retreat from the stress of the city. The area is made up of over 460 lakes, thousands cabins, hundreds resorts and small business that provide escape, relaxation and recreation in people's busy lives.



Recreational trails can be found all over the lakes area, providing places for year around outdoor activities.

Wildlife is around every corner of the lakes area, providing visitors with many opportunities to ex-perience nature

Visitors desire to experience the chang-ing of the landscape throughout the seasons

Many resorts provide places to stay and experience the area, many of them on some of the most beautiful lakes in the region.

Area culture can be seen high and low, the Pequot Lakes-water tower sets the

Historical Narrative

The Brainerd Lakes Area developed in the late 1800's as a rail road and logging town on the Mississippi River. Over 1,000 men worked for Northern Pacific Rail Road in the Brainerd area, where they fixed rail cars and maintained over 2,000 miles of track. In the early 1920's Resort tourism was on the horizon of the Lakes area. The first resort was Ruttger's on Bay Lake founded in 1898, this was the first of many family owned resorts started in the Lakes area. As time progressed, so did tourism and the demand for recreation. The lumberjack and railroad theme set in Brainerd's history has always been a strong aspect in the tourism development and community pride.

Above Top- Late 1800's loggers in the Brainerd Lakes area, this was the start of the economic development of the area. Above- Some of the 1,000 man crew that worked in the Northern Pacific Rail shop in Brainerd, this was the area's second economic development.

Photos: Curtis Johnson & Associates

Area Attractions

Breath-taking summer view of Brainerd's Gull Lake.

7 miles north of Brainerd along the Paul Bunyon Trail, Nisswa's annual City of Lights and fireworks celebration takes place prior to the holiday season.

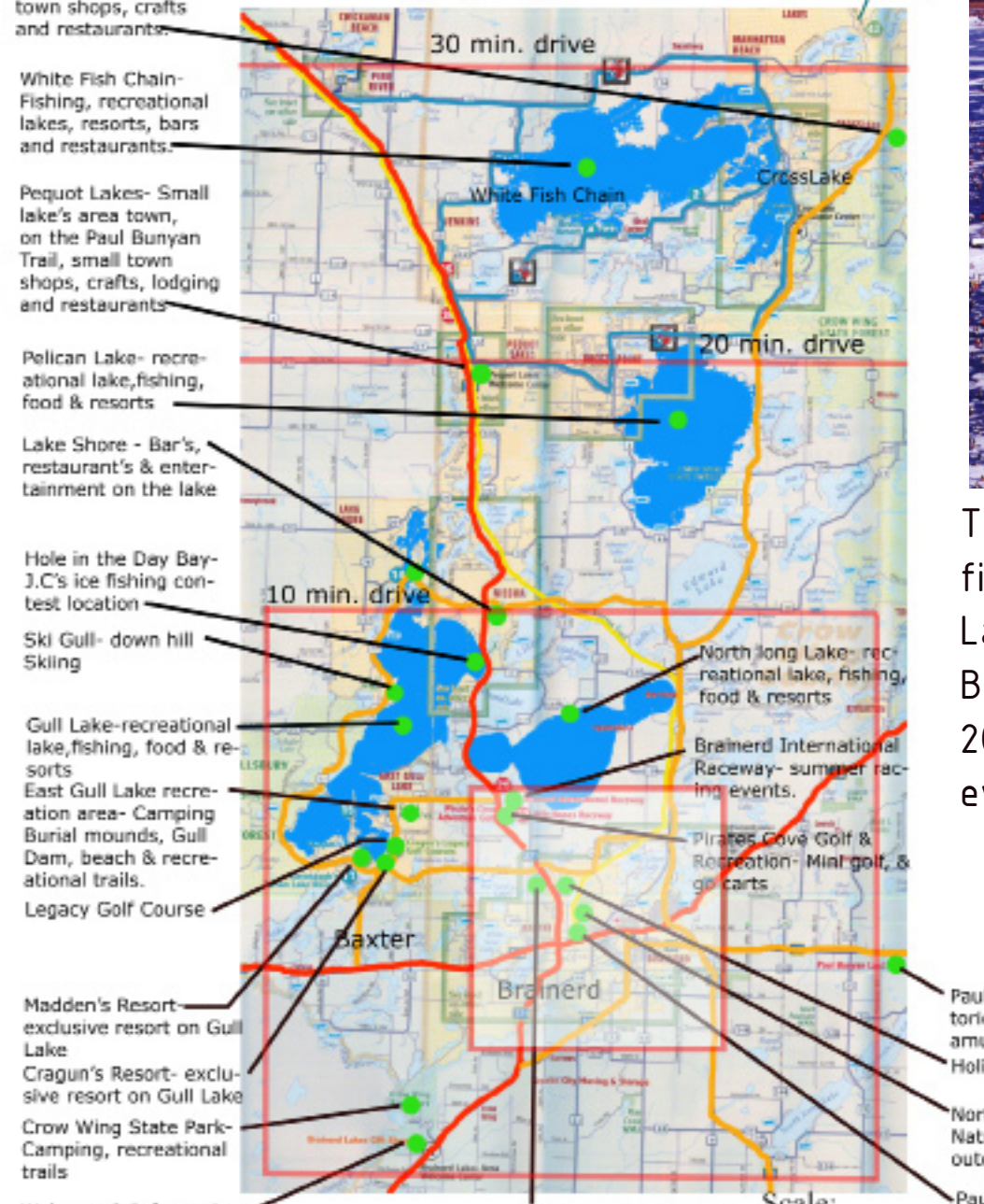
No matter how cold it is, Minnesotans make it out for the big ice fishing contest.

Brainerd International Raceway (BIR) attracts thousands of visitors to the area all summer long.

Photos: Curtis Johnson & Associates

Area Attractions Map

Attractions Analysis



The annual J.C's Ice fishing contest on Gull Lake's Hole in the Day Bay attracks over 20,000 people for the event in late January.

Trail Analysis

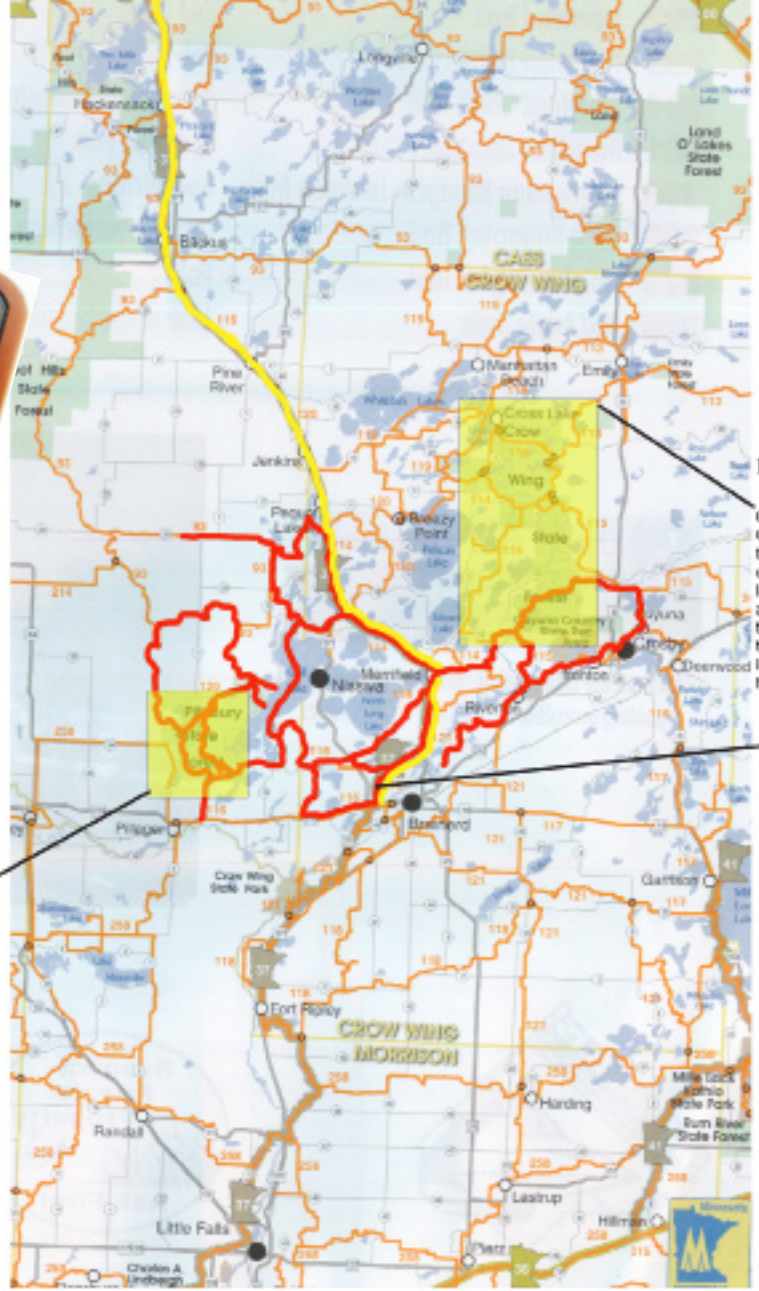
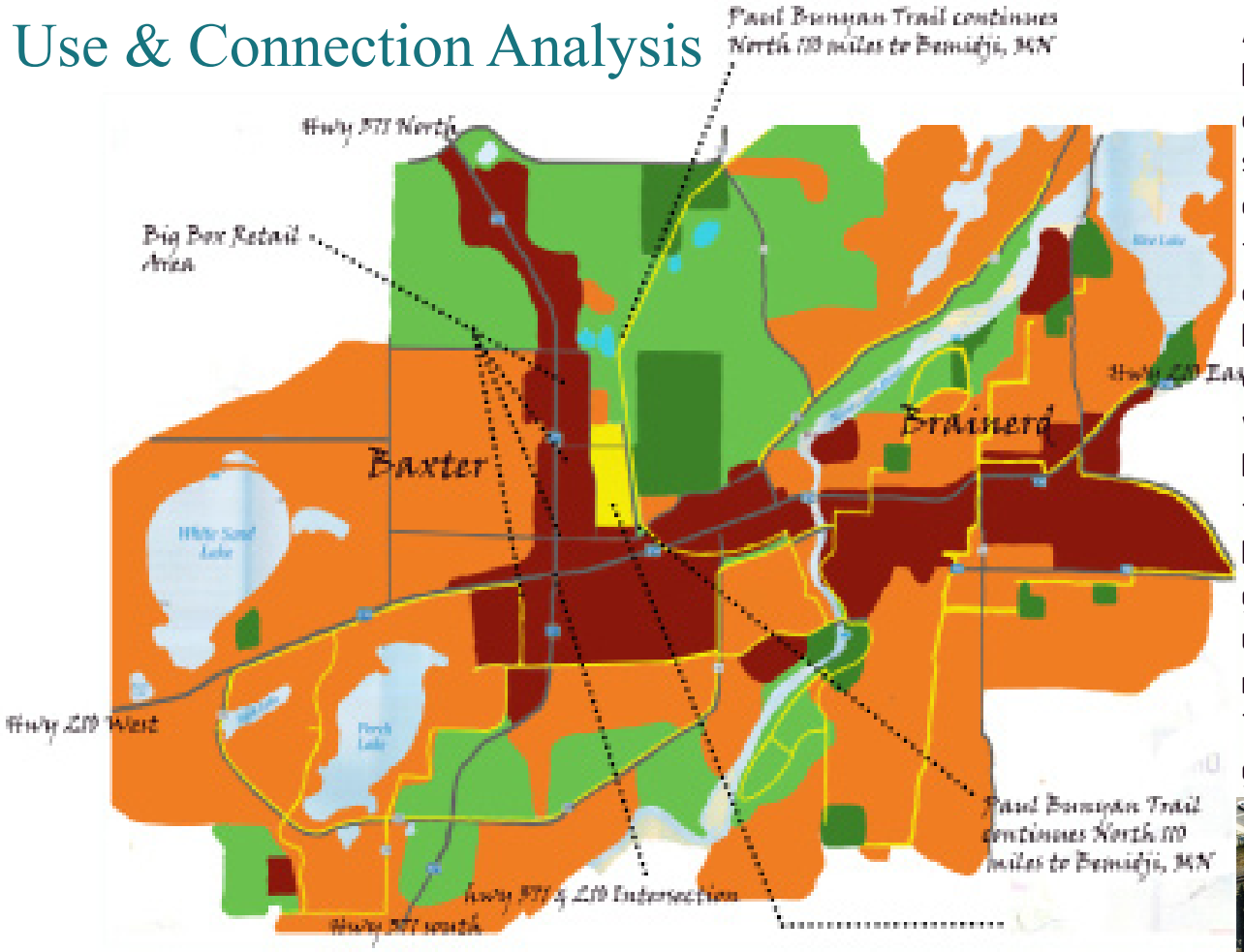


Photo: Erik Twistol

Photo: Erik Twistol

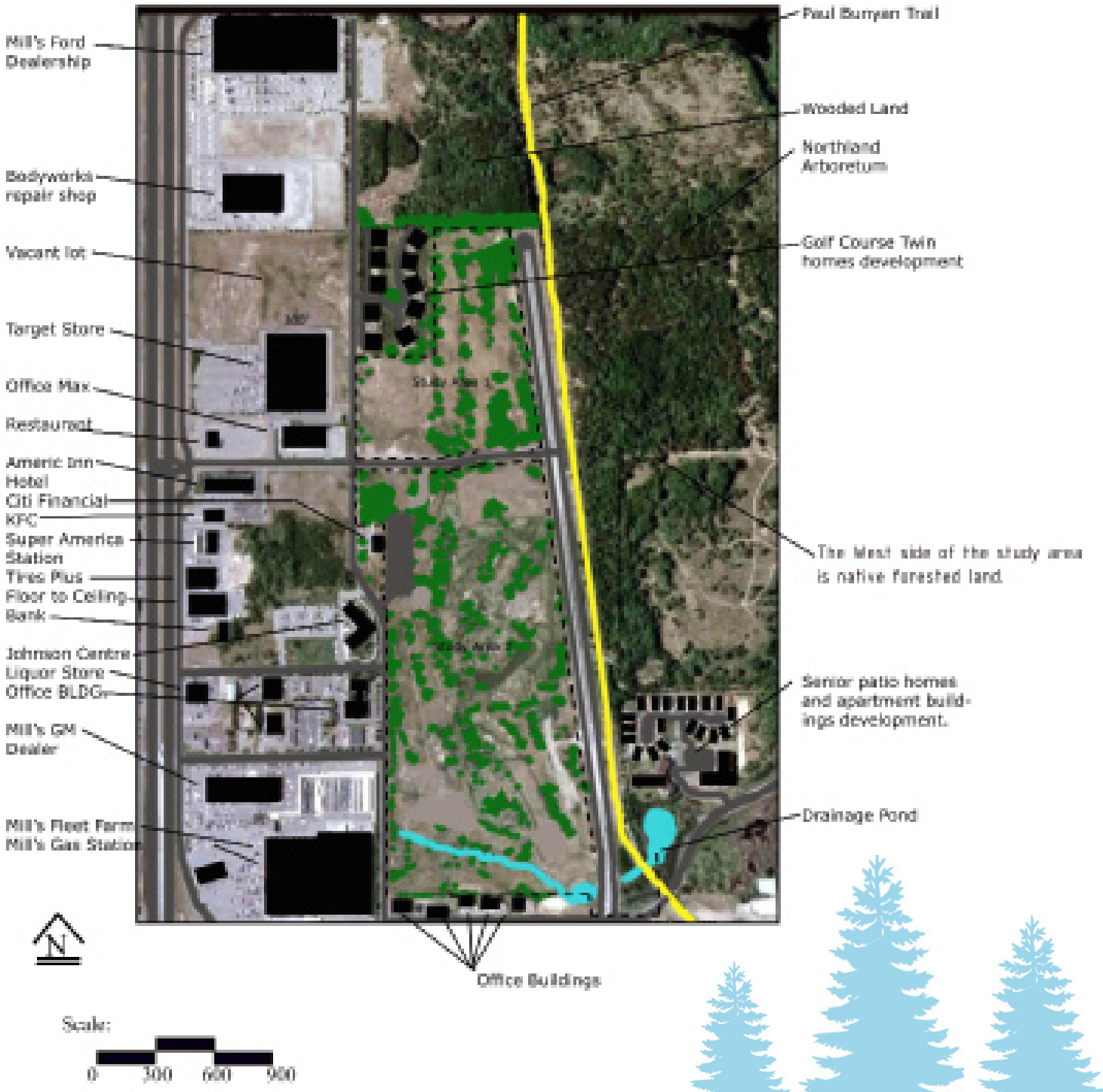
The Brainerd-Baxter area is the heart of the snowmobile trail system. From here one can travel in any direction and encounter different landscapes and terrains. Every trail is very scenic, however some have better access and less intervention with roads. The Crow Wing and the Pilsbury State Parks are examples of some of the best riding conditions, with little traffic interference. The Paul Bunyan Trail serves best as a main collector or expressway for the area's trail system. Minnesota trails have a speed limit of 50mph, however on most winding trails it is difficult to go half the limit. On the Paul Bunyan, one can go the maximum speed limit due to the width and straightness of the trail.

Land Use & Connection Analysis



As the land use map shows, the Brainerd-Baxter area is a spread out community, positioned on both sides of the Mississippi River. The oldest area is on the East side of the river, and the newest development is on the West side or the Baxter side. The commercial development follows the two main Highway corridors, hwy 210 & hwy 371. Most of the new development in the past 15 years has progressed North along hwy 371. Much of this growth movement can be attributed to the rich economic development on the lakes north of town. The Brainerd -Baxter area is the gateway to the Lakes area.

Study Area Detailed Inventory Map



Site Viewshed Map

Looking west to the golf course twin homes that where developed. Design needs to provide good views for these homes.

Looking south down the former fare way is open area with good elevation. Great area for residential development.

To the West big box retail borders the site, making undesirable views.

Looking West down the roadway of the middle of the site, towards Office Max and Target.

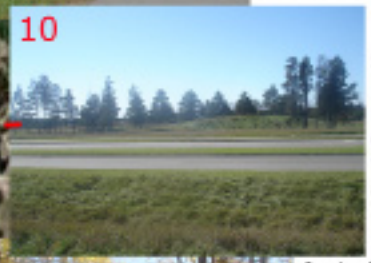
Taken in Fall looking West across the site to the back of Mill's Fleet Farm. The once well groomed greens of course are now field grass and weeds.

The southern most part of the site, looking West across site the existing watershed can be seen, good natural drainage area for the design

Looking North down the trail, a biker uses the smooth paved trail. The natural landscape here makes for a great connection with nature and wildlife.

The dead end four lane street to the East of the site between it and the trail, a very wide open nice street, but serves n function currently, needs to b utilized in the future design.

Fall on the trail, looking North to the undeveloped natural woods. This view shed shows the natural beauty of the trail and the threshold of the trail and the site.

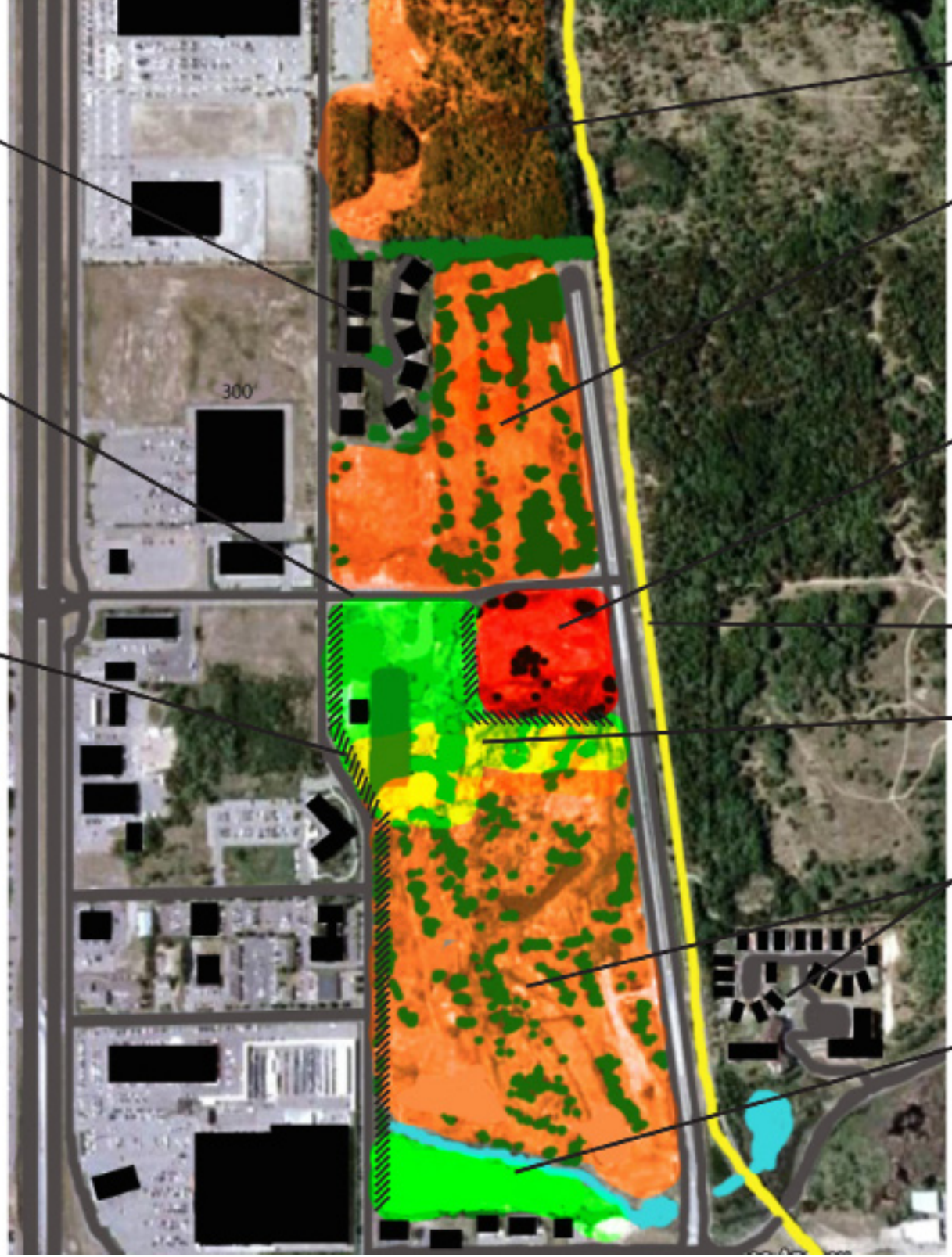


Standing on the Paul Bunyan Trail across the road onto the site. One can see the change in topography of the once golf course and the mature landscape.

Just off the Trail, a path connects the trail with the trail head parking and the senior homes overlook the trail. this is a good example how good the view of a trail could be onto a trail.

Standing on the Bridge, one can see the senior apartment building and the drainage pond to the East of the site. This is a very scenic view but will not be visible from the site.

Pictured is the Paul Bunyan Trail bridge over Excelsior Road. This Bridge is an iconic asset to the community and to the Trail. this is a good view shed to the site.


Incorporate residential design to provide good view of existing neighborhood.
Increase traffic on under utilized roadway.
Screen out views of commercial development to the west of study area.
300'
Residential Development
Commercial development
Park/ Greenspace
Paul Bunyan Trail
Screened out views
N
Scale:
0
300
600
900
Possible additional expansion of residential development
Residential development of affordable family homes, 150k -175k on .25 -.5 acre lots.
Good location for corner type store, good proximity and access to Paul Bunyan trail.
Possible lodging or rental establishment
Screen views of commercial buildings to rest of the site.
Create main trail connection point with development
Good location for park development between commercial area and residential development. Will serve as a good transitional space.
Residential development of affordable family homes, 150k -175k on .25 -.5 acre lots. Creates a connection to the neighboring senior development and the trail.
Preserve natural drainage corridor and create green buffer between residential development and office buildings.

Post Analysis Justifacation

Neighborhood need....

The Paul Bunyan Development is about a 90 acre addition to the Brainerd- Baxter area. The development has great proximity to shopping and the Paul Bunyan Trail, which makes it a prime location for residential and some commercial development.

The real estate trend of the Brainerd Lakes area has changed from $300,000 plus lake homes to more affordable family homes. The biggest shortage is of quality single family homes ranging from $150k -$175k. As the area recovers from it's economic struggles these homes will increase in value.

The area's market is flooded with expensive homes, which the average year around resident can't afford and the $150 - $175 homes are selling. This market analysis was gathered first hand from Century 21 realtor, Cindy Holden, who has over 10 years experience selling homes all over the lakes area.

Lot Programing....

The development offers three different single family lot sizes, 1/4 acre, 1/3 acre and 1/2 acre sites. The development will also have several 1/2 acre Twinhome sites that will be controlled by a community association. The community will have several apartment buildings on the West side to create a smooth transition between the retail areas and the residential areas. To create economic development on the trail a hotel and restaurant is located in the center of the development for visitors to the trail. The restaurant overlooks a community pond and wildflower garden.

Preliminary Master Plan

Architectural Styles

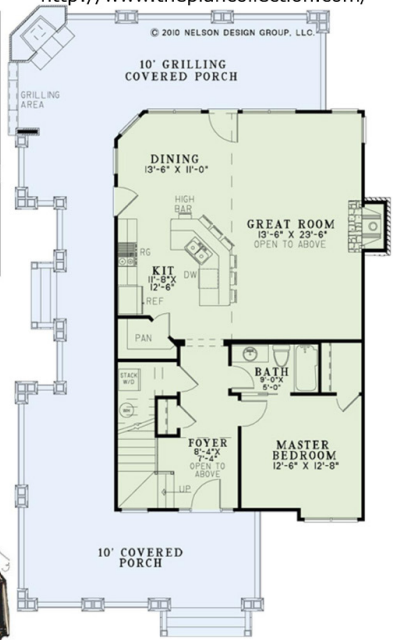
Below are some of the programic styles of homes for the development. The styles for the community were selected to go with the feeling of the community and fit the sence of place analysis.

http://www.theplancollection.com/

http://www.theplancollection.com/

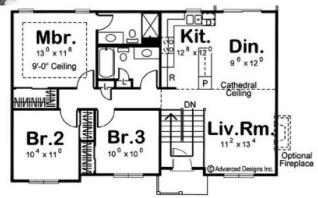
http://www.theplancollection.com/

http://www.theplancollection.com/



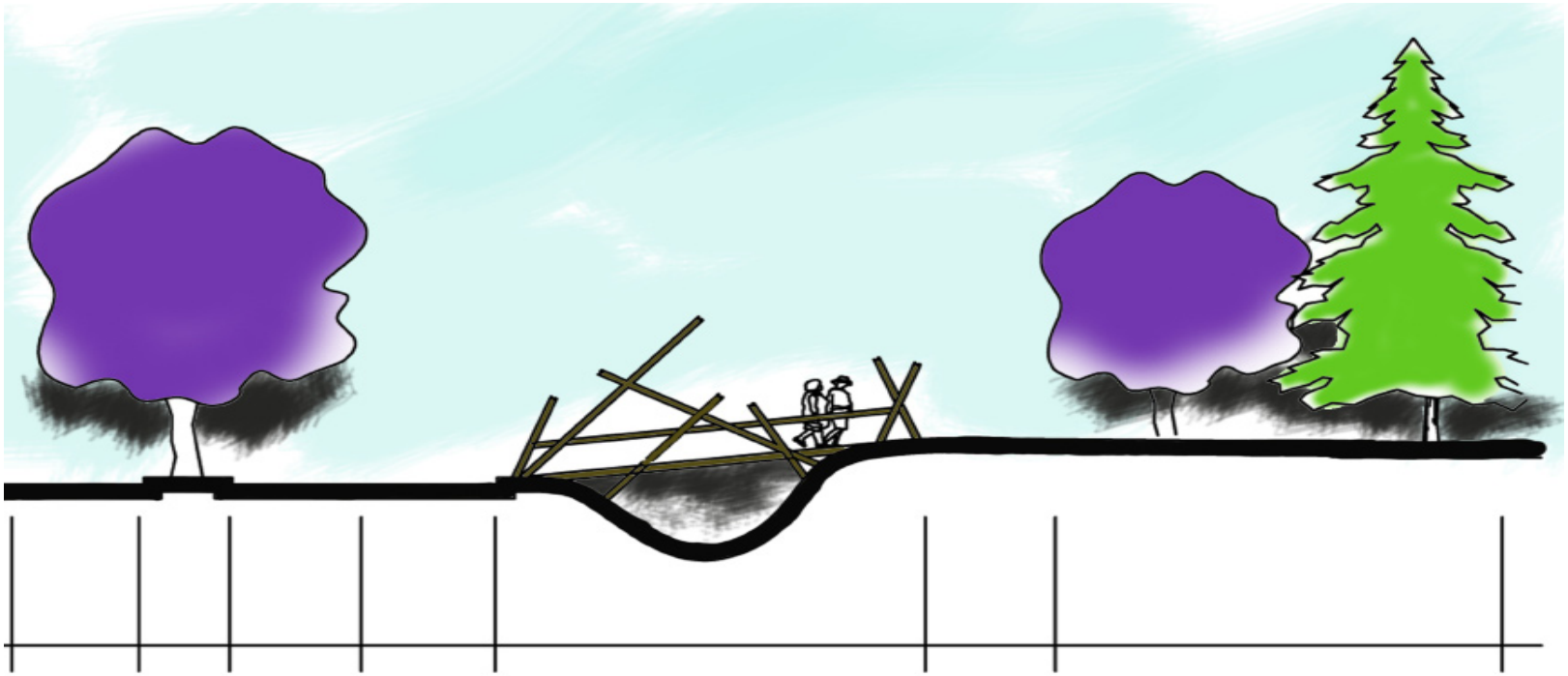
http://www.theplancollection.com/

http://www.theplancollection.com/

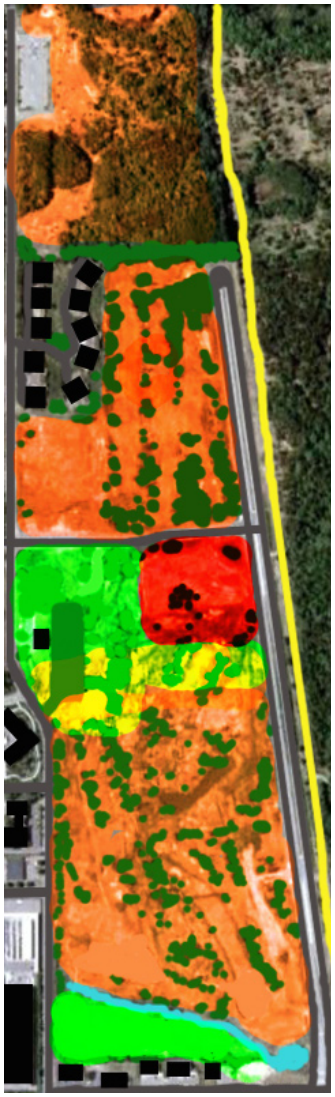


Concept Details

Trail connection Log brifges where an idea from early on in the project that where later fully developed details in the final design. The bridges capture the great logging history of the area in their design.



The Design Process



Concept Plan

Existing vegetation

Prelim Plan

Final Master Plan

The Initial concept design was to establish land use and find the best places for residential, commercial and green space.

As demonstrated in the second plan the design process started with identifying
Existing vegetation.

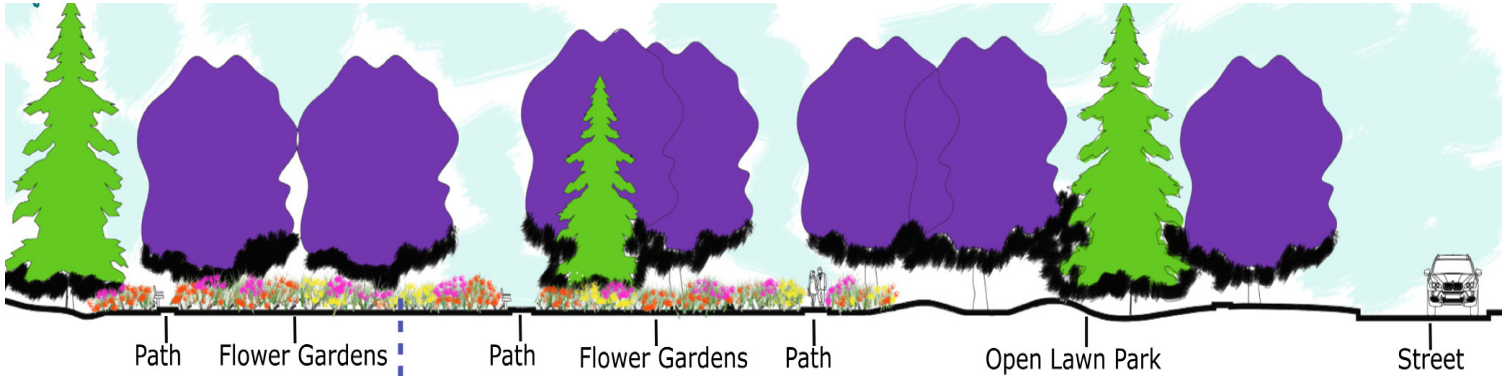
The third plan uses vegetation analysis with existing commercial sites and main streets to develop a Concept master plan. streets to develop a Concept master plan.

The fourth plan is the Refined master plan that was developed after the mid term review. This plan adds more park areas and less lots in the community, which makes it a community rather than adjust a development.

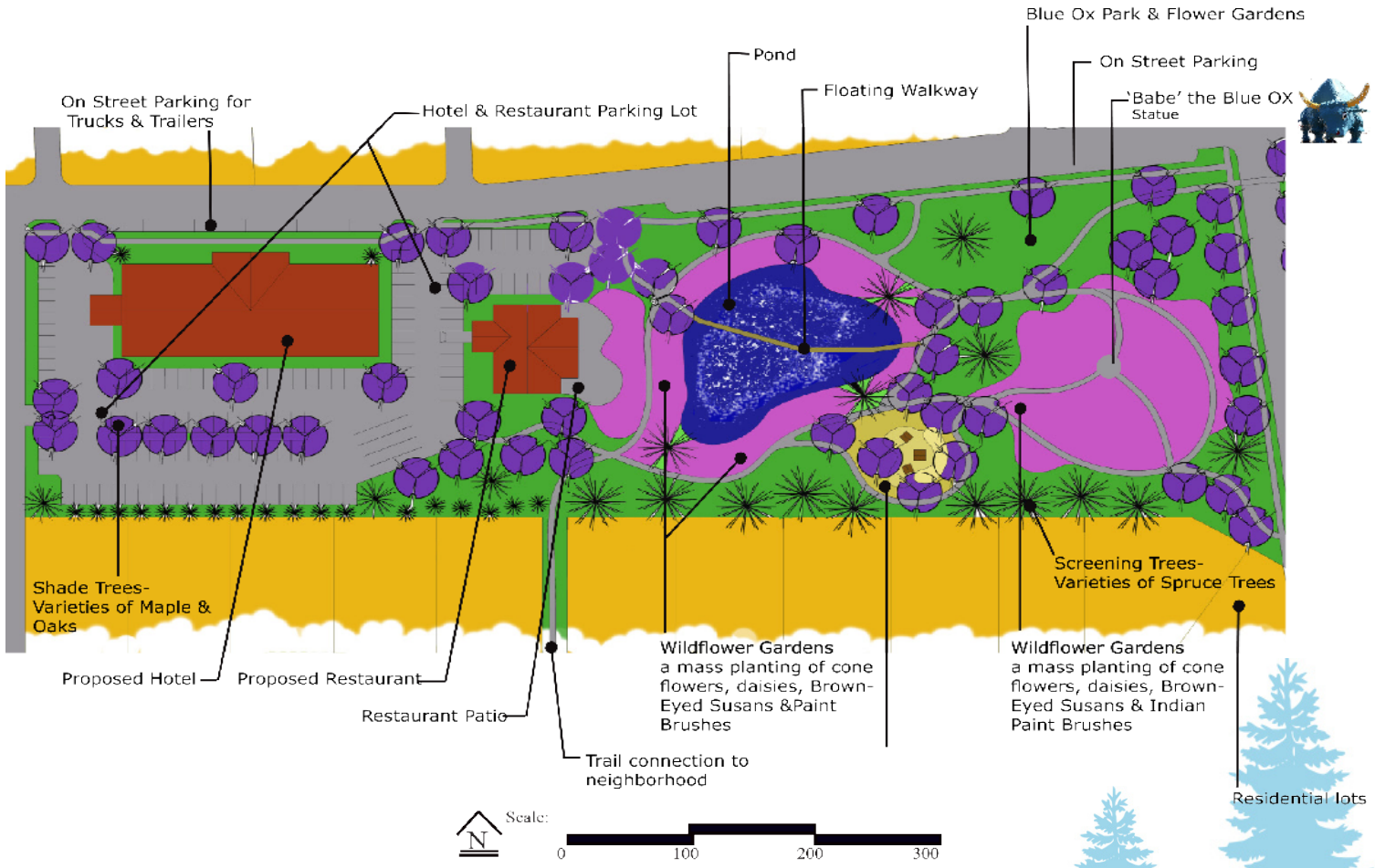
Master Plan

Development totals....

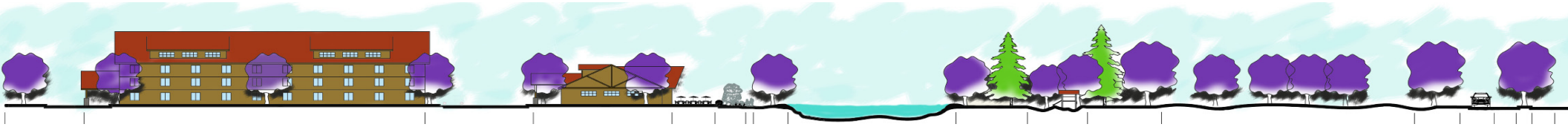
1/4 Acre lots -196 lots
1/3 Acre lots -31 lots
1/2 Acre lots - 25 lots
Commercial - 6 lots
Multi Family -9 lots



Detail Context



Main Lodge & Park Section



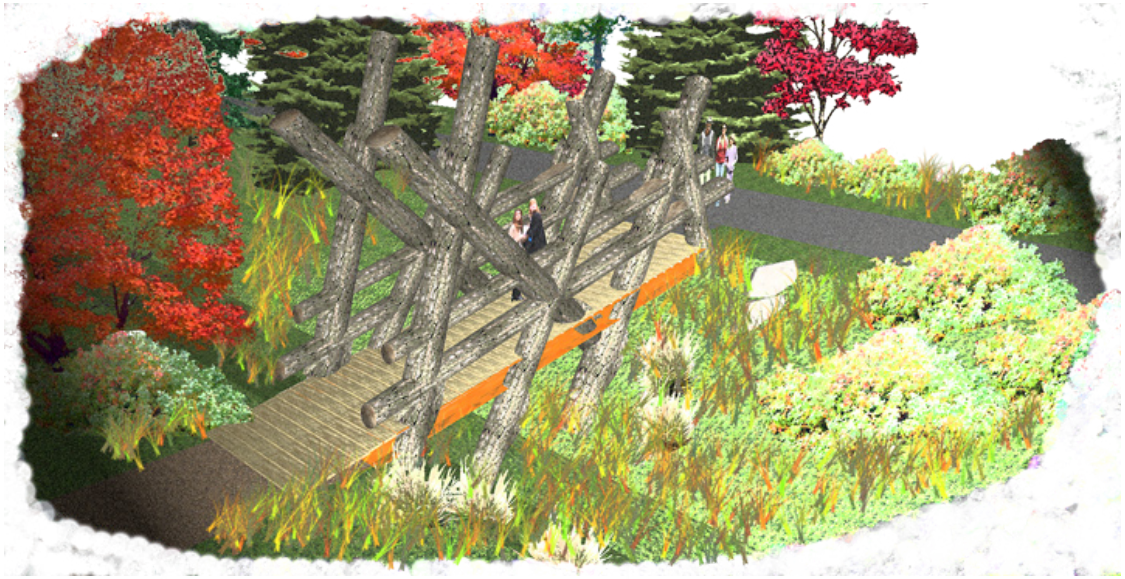
The centerpiece park of the development is Blue Ox Park, which has wild flower gardens, a pond and a sand trap style playground. The main lodge for the Blue Ox Resort and cabins is located at the West end of the park. The Resort's restaurant overlooks the park and gardens.

Economic Ties

Blue Ox Resort is an important way to provide economic stimulus to the Community by attracting visitors to the community and to the Paul Bunyan Trail. The Blue Ox Park creates a center public space for visitors to experience as well as community members.

Connecting The Trail With the Community

This design makes a strong connection between community and the Paul Bunyan Trail which will stimulate economic growth in the community. These bridges not only provide access to the trail for pedestrians but also snowmobiles and bikes as well.



Historical Design Connections

The design of the pedestrian and snowmobile bridges that connect the development with the Paul Bunyan Trail were influenced by the historical log jams. These jabs occurred on the rivers in the logging days when timber was sent down the Crow Wing River.

Community Style

An alley loaded design has an alley corridor at the rear of the lot and cars are routed to the alley, rather then the front of the lot and the main streets. This design eliminates garages on the public side of the homes, thus creating a greater appearance and interaction with the public spaces of the neighborhood. The Front Loaded with set back design pushes the garage further back from the sidewalk, forcing the house to become more pronounced and appealing.

Connecting Spirit of Place to Design

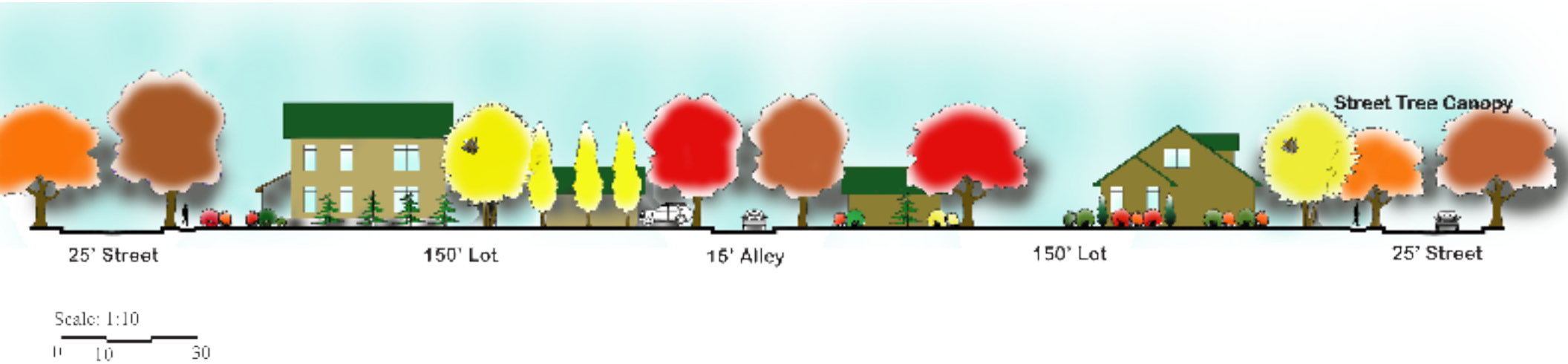
One of the main goals of this development is to create a neighborhood that is ascetically pleasing by reducing the appearance of garages and to bring the homes closer to the public corridors. This Design uses two different Corridor styles to accomplish this, front loaded with garage set backs and alley loaded designs.

Lot Sections

Both lot designs push the public space threshold by moving the front of the home closer to the sidewalk, thus making it interact with the public areas of the community. This threshold then becomes the space where social interaction will occur, creating social corridors.

Front loaded lots offer other advantages to the community too, they create a privet, larger backyard and make the ability to attach a garage to the home much easier. Pushing the garage back further on the home can create a better feeling on the street.

Rear loaded community design creates a stronger pedestrian connection in the neighborhood, as well as brings the scale of the neighborhood down to a more Comfortable level.



Scale: 1:10

0 10 30

Blue Ox Campground

The Blue Ox Resort would have 40 cabins, all could be year around, they would be about 20' x 25' in size with a loft.

The Blue Ox Resort North is an expansion of the main Blue Ox lodge located in the center of the development. This resort is filled with small year around cabins that are carved into the natural forested landscape.

Detail Context

Trail Crossings Parks

Detail Context

Trail Crossings Park is the neighborhood park in the North part of the community. Here a corner water feature provides attraction and beauty to the neighborhood and adds value to the community's spirit of place. The Park is in the center of the area, with homes looking onto it.

Development Plantings

Boulevard Trees


Sugar Maple


Red Maple


Norway Maple


Red Oak


American Linden

Wildflower Gardens


White Daisy


Indian Paint Brush


Purple Cone Flower


Brown Eyed Susan

Public Spaces & Park Trees


Colorado Spruce


White Pine


Siberian Larch


River Birch


Quaking Aspen

Boulevard trees also included in park space planting list as well

Trail side Plantings


Red Twigged Dogwood


Serviceberry Shrub


Forsythia


Winged Euonymus


Staghorn Sumac


Purpleleaf Sand Cherry


Arrowwood Viburnum

Project Conclusion

Social Corridors is a project that took an empty old golf course and has turned it into a great community that offers many amenities, making it a sustainable community for the future. The development ties The Paul Bunyan Trail to the community and bring some business and development to the area, thus helping the communities economy. The master plan provides parks, home lots and commercial opportunity as well as a good plan for pedestrian movement and recreation.

Personal Identification

10835 Heritage Lane
East Gull Lake, MN 56401
(218) 280-3603
erik.twistol@ndsu.edu
Hometown: McGregor,MN

"NDSU is a down to earth university with a sense of community"

Studio Experiance

2nd Year

Fall 2007- LA 271 Professor: Kathleen Pepple
Small Spaces studio

Spring 2007- LA 272 Professor: Mark Lindquist
Public Spaces studio

3rd Year

Fall 2008- LA 371, Professor: Stevie Famulari
Environmental Art

Spring 2009- LA 372, Professor: Kathleen Pepple
Neighborhood Design

4th Year

Fall 2009- LA 471, Professor: Mark Lindquist
Urban Design Studio

Spring 2010- LA 472, Professor: Stevie Famulari
Remediation Studio

5th Year

Fall 2010 - LA 571, Professor: Catherine Wiley
Environmental Planning Studio

Spring 2011- LA 572 Design Thesis: Jason Kost &
Catherine Whiley

Referances

Feeney, S. (1997, November). New york study finds trail benefits trail neighbors. Retrieved November 10th 2010 from http://www.americantrails.org/resources/adjacent/mohawkhudson-study.html

Meijer, F. (2007). the white pine state park trail. Retrieved November 10th 2010 from http://www.americantrails.org/resources/adjacent/whitepineMIstudy.html

Webel, S. (2000) Trail Effects on Neighborhoods. Retrieved November 18th 2010 from. http://www.americantrails.org/resources/adjacent/sumadjacent.html

National Park Service, . (1990). Economic benefits of greenways: summary of findings. Retrieved November 8th 2010 from http://www.americantrails.org/resources/economics/GreenwaySumEcon.html

Gary Sjoquist (2003) The Economic and Social Benefit of Trails. Retrieved November 12th December 1st 2010 from www.americantrails.org/resources/economics/MNecon.html

2010 best trails state award. (2010, November). Retrieved November 22nd 2010 from http://www.americantrails.org/awards/NTS10awards/state10.html

Crain (1988) Economic Benefits of Greenways: Summary of Findings.
Retrieved November 12th 2010 from. http://www.americantrails.org/resources/economics/GreenwaySumEcon.html

Macdonald, s. (2007, September). Grand forks national recreation trail, nd and mn. Retrieved December 5th 2010 from http://www.americantrails.org/nationalrecreationtrails/trailNRT/grandforks-ND.html

Cedar lake. (1997, June 21). Retrieved November 10th November 23rd 2010 from http://www.cedarlakepark.org/Resources/ConceptMasterPlanBook.pdf

Kristen Steger, . (2006, September). Study evaluates impacts adjacent to michigan rail trail . Retrieved November 18th 2010 from http://www.americantrails.org/resources/adjacent/whitepineMIstudy.html

Onboard Informatics, . (2010). Brainerd, minnesota. Retrieved November 25th 2010 from http://www.city-data.com/city/Brainerd-Minnesota.html

Onboard Informatics, . (2010). Baxter, minnesota. Retrieved December 9th 2010 from http://www.city-data.com/city/Baxter-Minnesota.html

Meijer, F. (2007). the white pine state park trail. Retrieved November 10th 2010 from http://www.americantrails.org/resources/adjacent/whitepineMIstudy.html

Webel, S. (2000) Trail Effects on Neighborhoods. Retrieved November 18th 2010 from. http://www.americantrails.org/resources/adjacent/sumadjacent.html

National Park Service, . (1990). Economic benefits of greenways: summary of findings. Retrieved November 8th 2010 from http://www.americantrails.org/resources/economics/GreenwaySumEcon.html