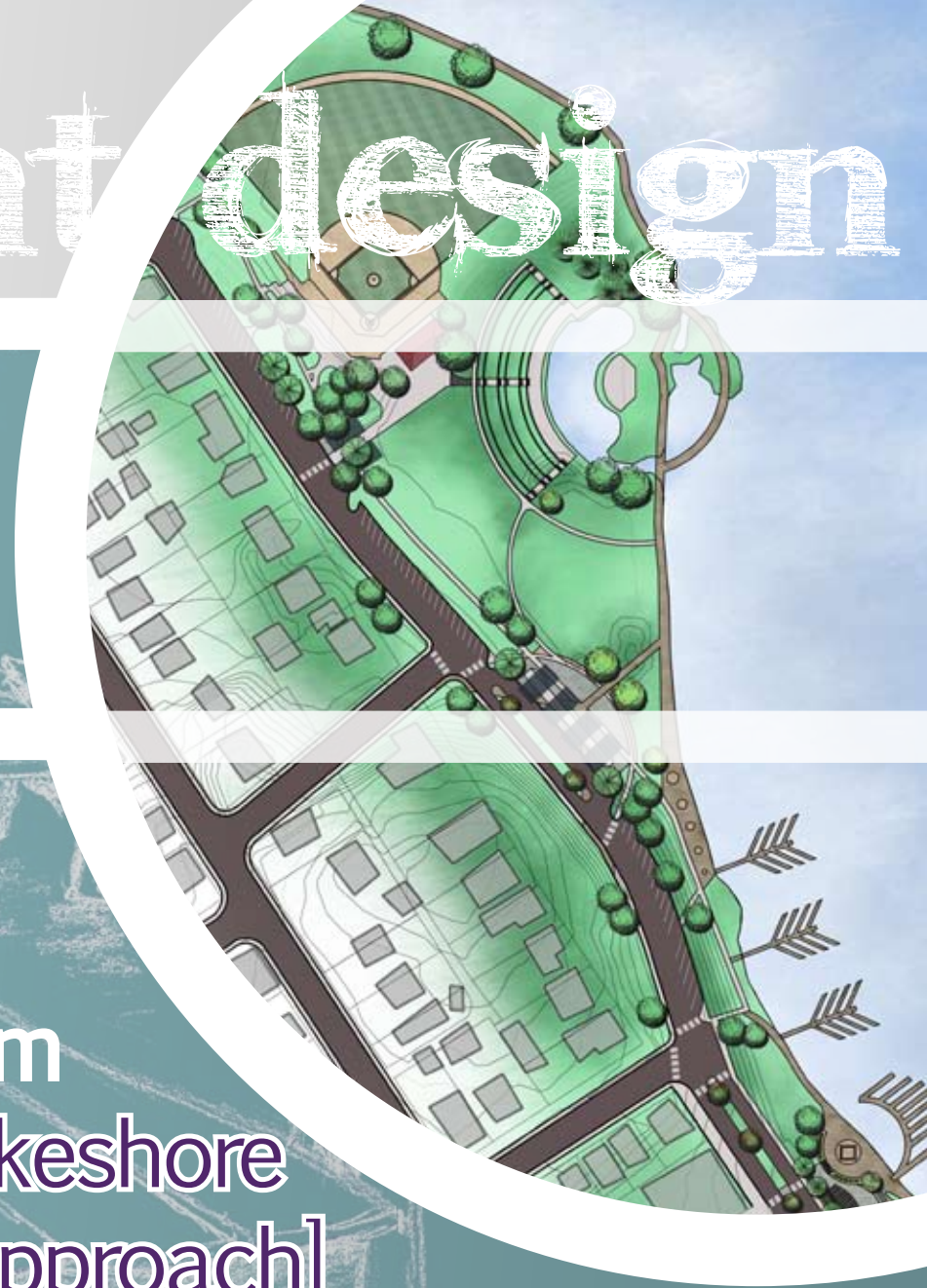


# waterfront design



Sustainable Lakeshore Tourism  
[Revitalization of an Urban Lakeshore  
Environment with a Tourism Approach]


adam joseph bishop  
Spring 2012

SUSTAINABLE LAKESHORE TOURISM  
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

  
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Abstract  
Problem Statement  
Project Typology  
Theoretical Premise  
Project Justification



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# Statement of Intent

This thesis examines the importance of urban lakeshore waterfronts for they are merely large wetlands, that play a crucial role in maintaining eco-balance, protecting bio-diversity, and replenishing underground water sources. In addition to numerous social functions and relaxation, they can provide economic development in the form of sustainable tourism as well as prosperous destinations undulating 'sense of place'. Extensive study and analysis of this valuable resource will provide indicators on how to integrate water, land, and urban needs of a declining waterfront in a harmonious fashion.

Excelsior, Minnesota located on Lake Minnetonka has a rich tradition of tourism. This design will emulate current trends of cultural landscapes revealing how natural and human factors interact through a sustainable approach. Sustainability will serve as the bonding agent in which this design evolves, re-establishing Excelsior as an ecotourist destination.

# Abstract





# Problem Statement

How can a waterfront design in a small, dense, urban city unify a fragmented pedestrian corridor?

How can this design move forward utilizing tourism practices to better support the interest of the community?

- How can the use of sustainable design in waterfront cities influence a new outlook in social and economic capital gain?
- How can sustainable practices in tourism accommodate for the growing demand of consumer interaction within the environments?

---

# Project Typology

The emphasis of this project is geared toward the redevelopment of a historic lakefront park and streetscape.

## Claim

This thesis examines the poor environmental interaction on valuable lakeshore land due to the heightened growth and subsequent decline of prime real-estate properties. Sustainable design is an advanced approach to create a lasting environment or entity. It will prove to be the crucial factor combining tourism and eco-friendly livability along this precious coastline.

---

# Theoretical Premise

## Premise

Sustainable design is becoming a common initiative worldwide; however it has yet to become a common understanding, especially for developers and tourists. Sustainable planning will maximize ecological, social and economic benefits for the local community of Excelsior furthermore enhancing cultural heritage and reducing negative impacts on the precious coastal land.

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## Unifying Idea/Theoretical Premise

In order to meet the needs of future generations, people must examine the ecological costs of the most productive waterfronts. By protecting these landscapes, humanity can gain insight as to how current methods of sustainability can exponentially influence lakeshore preservation and economic growth.

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## Conclusion

In order for the urban landscape to successfully be augmented into the environment, there needs to be a sense of place and value that promotes desirable livability fused with a welcoming atmosphere through the use of themeing and branding. The city of Excelsior contains established parks and several other designed gardens, and undeveloped open spaces. These spaces vary in size, location, and service. Parks play an important role not only in their overall recreational benefit to the residents of Excelsior, but as crucial destination points directly related to the establishment of trails.

All are interrelated and each portion of the parkland is an established recreational area, therefore adding to the comprehensive system.



Project Justification  
Narrative  
User/Client Description  
Major Project Elements  
Site Information  
Procedural Plan  
Project Emphasis  
Maps  
Plan for Proceeding  
Previous Experience

# Proposal

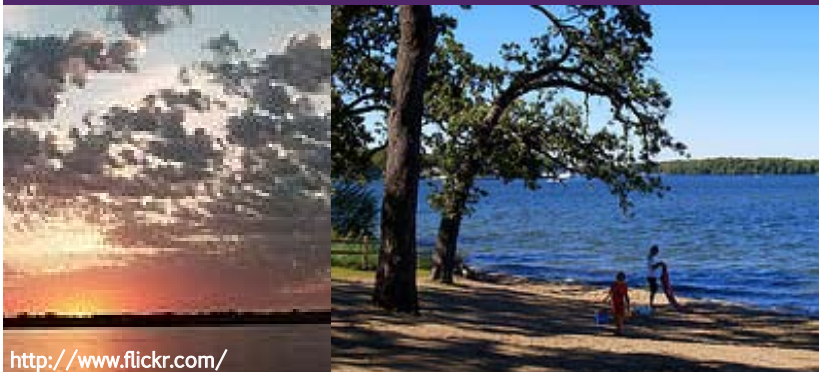




Capital gain has proven to be the backbreaker in successful waterfront design. In order to satisfy the needs of traveling, destination places of interest, and relaxation, large numbers of lakes have been constructed in many cities.

The focus of the creation of landscapes that are rich in cultural value has undoubtedly shown that natural lakeshore restoration will provide a destination for all tourists in the region.

# Project Justification



<http://www.flickr.com/>

# The Narrative

## Narrative

Lakeshore real-estate is genuinely a hot commodity for any design market. For example, in the past decade, green space opportunities have become fragmented and not thoroughly planned due to the mass amounts of lakeshore condos and cookie-cutter landscapes being built along optimal tourist defining locations. Excelsior is a small, tightly knit Minnesotan community on the expansion nestled on the shores of Lake Minnetonka. The lake itself is a hot spot for interaction of people, ideas, and other activities. The intention is to bring an awareness of the importance of the lake and the surrounding nature that shapes the town as a whole. This is done by revealing the pronounced infrastructure and the unique blend of old and new. Some examples are the unique antique shops, restaurants, theaters, and multi-use condos. Excelsior was founded in 1853 by colonists from New York. It has served as one of the main focal points of the South Lake Minnetonka area.

The intention is to utilize effective interpretations of branding and to preserve the heavily acknowledged history while still finding ways of expanding the pedestrian friendly town through boardwalks, park connectivity, lakeshore revitalization, and revamping or removal of structures or estates that conflict with the overall parkland potential. Even a bit of history has been preserved in the recently restored steamboat, *The Minnehaha*, which in summer takes passengers on a round trip from Excelsior to Wayzata and Big Island Park. There is also a restored streetcar and museum. Throughout the design process, in order to implement a design that flourishes, there needs to be a combination of a safe, environmentally-friendly atmosphere that also maintains the character of the small town feel. Clearly, the city is thriving already and is very accommodating of activities and leisure. The Southwest Regional Light Transit Trail, a favorite of bicyclists and walkers, passes through the heart of the city. Also, at the north end of town is the Commons Park and recreation area programmed for picnicking, swimming, tennis, community events, and numerous other activities. The deciding factor is how to address Excelsior's most critical issues such as how to accommodate growth and in what direction that growth should occur. The design will provide a detailed strategy to guide future growth in new development areas.

# User/Client Description

The shore redevelopment would operate in conjunction with the city of Wayzata. A comprehensive plan will be put into place involving specific land use practices, infrastructure, and transportation resolutions. This will enable the plan to tell the story of the city's future development and presents an integrated program for potential growth. The park and shoreline infrastructure will welcome Wayzata residents by employing a very desirable small town atmosphere to attract tourists. Markets and small kiosks or research centers will assist and educate visiting personnel on trending environmental design approaches such as sustainability, shoreline restoration, structures and material studies, and so on. I wish to propose an innovative development program for the city's vital town center, a distinctive place that remains an active mixed-use facility. This theme analyzes downtown, and presents a multi-faceted downtown development program that includes the public environment, redevelopment opportunities, and management strategies designed to improve the district's already historic environment. It is designed to create opportunities for additional businesses and improve the functioning and financial success of the district. The educational portion will be achieved through guided tours including boat tours, historical preservation (resurfacing old taxi boats similar to the Minnehaha), and tactile gardens with signage.

The users of this site are those interacting with the landscape, infrastructure, and surrounding elements of Excelsior, Minnesota. Because one of the main goals of this proposal is to allow for accessible movement throughout the city of Excelsior and its surrounding communities, no one user is more important than the other. Each individual will interact with the space in entirely different ways and will potentially be impacted emotionally and physically. The growth of this city is currently dictating the expansion of the Minnetonka township. The master plan will invoke a redevelopment in light of crucial greenway connections and pedestrian corridors to tie together the community as a whole. Trees will be an integral part of these systems. Many of the world's most famous urban streets and spaces are made memorable by their trees.

### **Transportation**

The infrastructure will build the connections between amenities and will determine the actual usage. Public transportation, which is already nearby, will provide economical support and alternative options for current residents. This will also attract prospective residents and clientele to the area because of the ease of commuter accessibility and resources.

### **Parks/Open and Public Space**

The largest investment that can be made for the future are these untouched open grids that provide the necessary community-wide recreational and social hubs.

#### **Park types:**

**Neighborhood park.** The neighborhood park classification is intended to provide informal neighborhood open space for active residential neighborhood needs. Recreational activities include play equipment, walking trails with park benches, picnic areas, and a limited amount of playfields. The service area range is one-half mile and is intended to serve a population of 1,000 people.

**Community park.** The community park designation includes both parks and playfields that provide facilities for more intensive recreation areas, such as ball fields, tennis courts, ice skating rinks, and picnic areas. A community park's desired service area range is typically one mile and serves a population of 1,000 people.

**Open space/special use area.** This category serves a city-wide function, but development is limited to enhancing the opportunity for activities such as nature study, educational objectives, hiking, and so on.

### **New Residential and Commercial**

This suburban community will need to reevaluate the way it approaches residential and, specifically commercial design. Higher density zoning and smart growth strategies will be employed. There should be a very environmentally friendly strategic plan for developers. More efficient construction and location will need to be executed in a long term master plan however. A mixture of residential and commercial real estate would be ideal for the economy of this area year round.

# Project Elements

## Major Project Elements

### **Hotel/Resort Planning**

Water and Lake Street once harvested an abundance of exquisite resorts aligning the beachfront. They towered above summer cottages, mingling with the green of the established elm and oak groves. One would observe poles reaching for the sky capped with bright colored flags proclaiming to the world one some of the finest summer hotels in the country. In due time, these prominent epicenters catering to the summer lake-goers unfortunately burned down due to open hearth fire places. Excelsior was truly the lake Metropolis. High pitches boat whistles, clashing of bells along with yelps from steamboat captains trying to visitor's attention. Electric cars went whizzing by up the shore adding to the unique magical charm of Excelsior as one would gaze upon Minnetonka's charm and magical offering. This charm has elusively vanished over the years, however, according to Excelsior's Redevelopment Plan, weekend summer tourists provide an abundance of economic revenue for the town supporting restaurants and stores. This being said, a new resort along the port area should be considered as an integral piece to the economy and must be included in the plan.

### **Theming/Sense of Place**

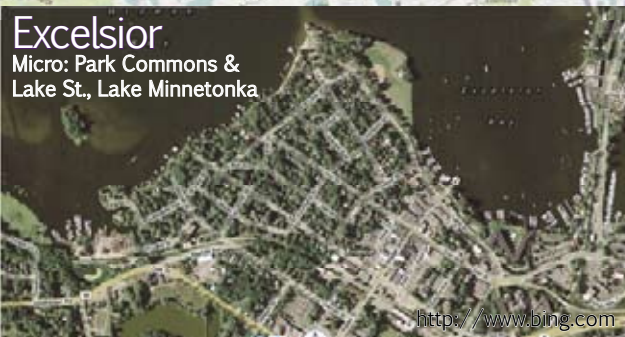
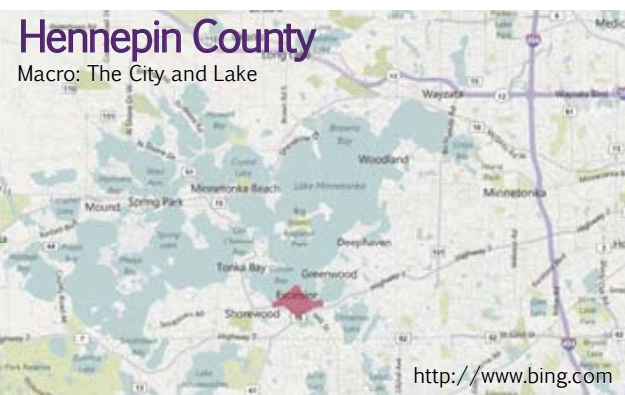
Theming the new developmental area will serve as a new staple to the community and regenerate new business ventures along Water Street. As a result, the ability to add parking while creating added multi-use pedestrian friendly storefronts will stimulate the economy and attract more local business along with weekend vacation goers. Current well-thememed buildings on the site reflect a quaint but friendly downtown carrying out a rustic feel of the old amusement parkground architecture. The character of Excelsior is crucial and should preserve the vivacious history of the small town. Tourists who walk through the charming downtown should have an ambience of friendliness and comfort until reaching the propped boardwalk which will add a distinctive experience of character along the water's edge.



# Site Information

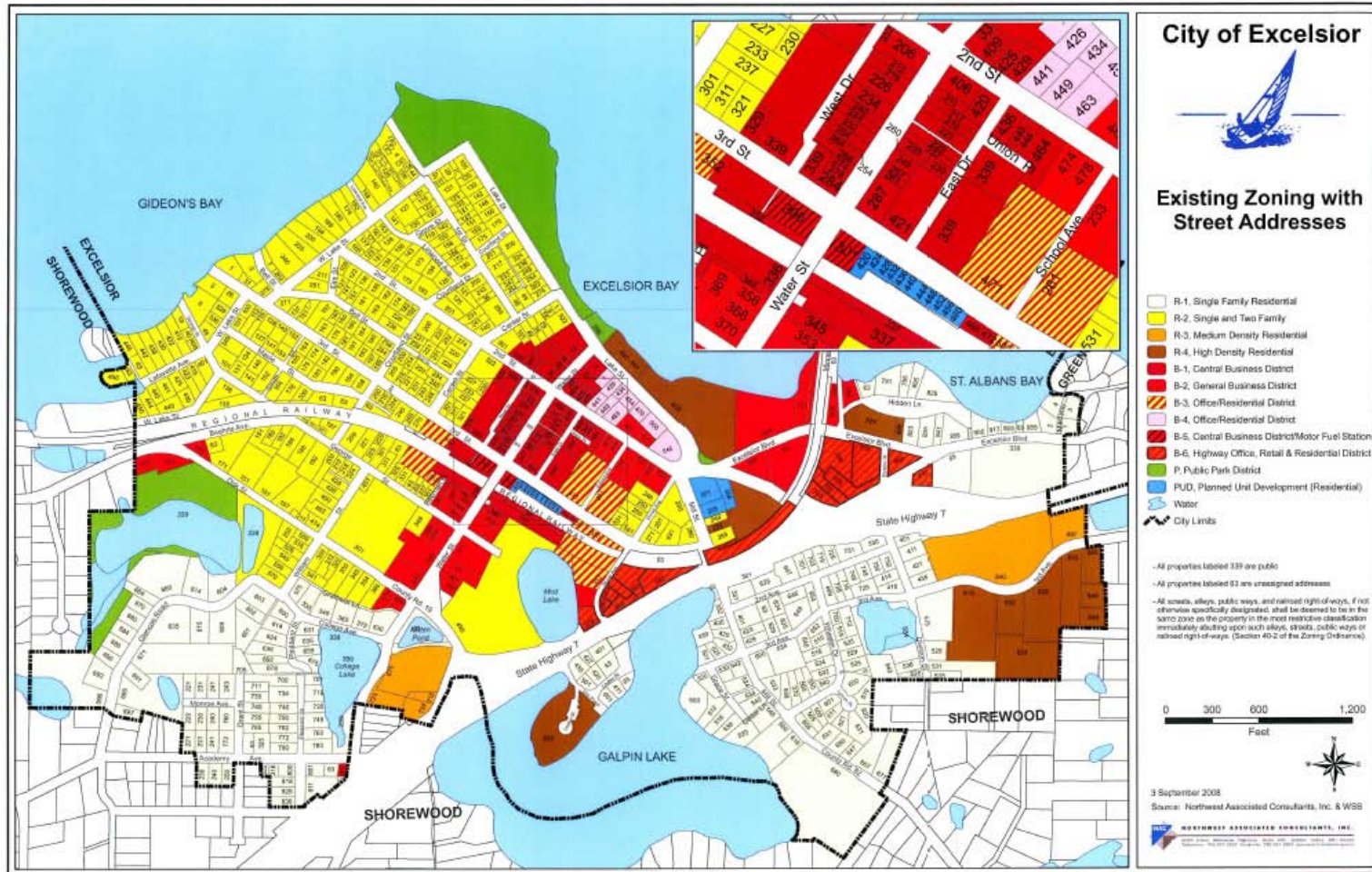
Regionally, Lake Minnetonka is located 20 miles due west of Minneapolis, St. Paul and is more of a collection of 16 interconnecting lakes with about 23 named bays and areas. The lake was formed by glacial melting during the last Ice Age. At 14,500 acres (22.6 sq miles) it is the 10th largest lake and one of the most popular leisure lakes within Minnesota.

The city of Excelsior a relaxed and personalized atmosphere in a one-square-mile area with a population of 2,397. The city is a unique blend of old and new with a variety of tastes to support anybody's palate. There are antique shops, ice-cream parlors, restaurants, a theater, a bed and breakfast inn and even a restored streetcar at the Excelsior museum.



# Diversity of Land Types

Currently, the Excelsior suburb would make a prime destination spot for any visitor because of its developed interior with close proximity to shopping, restaurants, public transportation, parks, and many other amenities.



City of Excelsior Comprehensive Plan

# Procedural Plan

## **Theoretical Premise**

Excelsior is becoming more aware of sustainable design, which is now a common initiative world-wide; however, it has yet to become a common understanding, especially for developers and tourists. Sustainable planning will maximize social and economic benefits for the local community of Excelsior, further enhancing cultural heritage and reducing negative impacts on the precious coastal land.

## **Project Typology**

Community Development and Sustainable Design

## **Historical Context**

History is important to Excelsior. Colonists from New York founded the city in 1853 and it has served as the focal point of the South Lake Minnetonka area. The small downtown and historic ambiance set Excelsior apart from other suburban communities. Even a bit of that history is preserved in the recently restored steamboat, Big Island Amusement Park was open from 1906-1911. The 65-acre park was built by the Twin City Rapid Transit Company to attract passengers for the streetcar line out of the Port of Excelsior. The 25 cent admission included a boat and rail ticket from Minneapolis to the island. For 2 years, as many as 12,000 passengers attended a day. It was later closed due to a deficit of \$250,000 (Ellis, 1906).

## **Activities & Events**

The Southwest Regional Light Rail Transit Trail, a favorite of bicyclists and walkers, passes through downtown Excelsior. At the north end of town is the Commons Park and recreation area with a swimming beach, a playground, tennis courts, baseball diamonds, and areas for picnicking.

There are a number of community events held each year in Excelsior, which are sponsored by the South Lake-Excelsior Area Chamber of Commerce and the Excelsior Downtown Business Group. Thousands of visitors come to Excelsior each year to attend the Art in the Park, Fourth of July, and Apple Day festivities.



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# Project **Emphasis**

## Theoretical Premise

Sustainable design is becoming a common initiative world-wide; however, it has yet to become a common understanding, especially for developers and tourists. Sustainable planning will maximize social and economic benefits for the local community of Excelsior, further enhancing cultural heritage by reducing negative impacts on the precious coastal land.

Excelsior has a strong community development history with an emphasis on enriching the culture through planning and development. The already built and widely used *Commons Park* is a staple to the community and should reflect smart zoning and future planning. Less desirable businesses, small single family residence along lake shore properties, and vacant stores will be reevaluated to better serve the community as a whole and hopefully connect the park and pathway systems. With the development of a new lake shore park connecting to the already built commons park the possibilities are endless. The design could potentially regain control of the aesthetic shorelines along with providing the small town feel that people admire. The sequence of different landscapes that compose trail/walkway corridors connect throughout the township, making it an interesting place to walk, bike, and ride, thus increasing revenue in local shops and acquiring a tourism fan base. Spatial components of recreational systems include: viewsheds, open and closed landscapes, and light and dark areas.

### **Viewsheds**

Lines of sight within a corridor or out to a landscape or adjacent built feature are called viewsheds. The views from adjacent lands into the trail corridor are just as important as views from the proposed trail. This is particularly important when you have a feature that should be highlighted or when an adjacent landowner objects to the trail corridor. Safety and visibility are the two viewshed issues of concern for future trail users. Viewing opportunities from a trail affect the quality of users' experiences and are classified as either open or closed landscapes.

### **Open and closed landscapes**

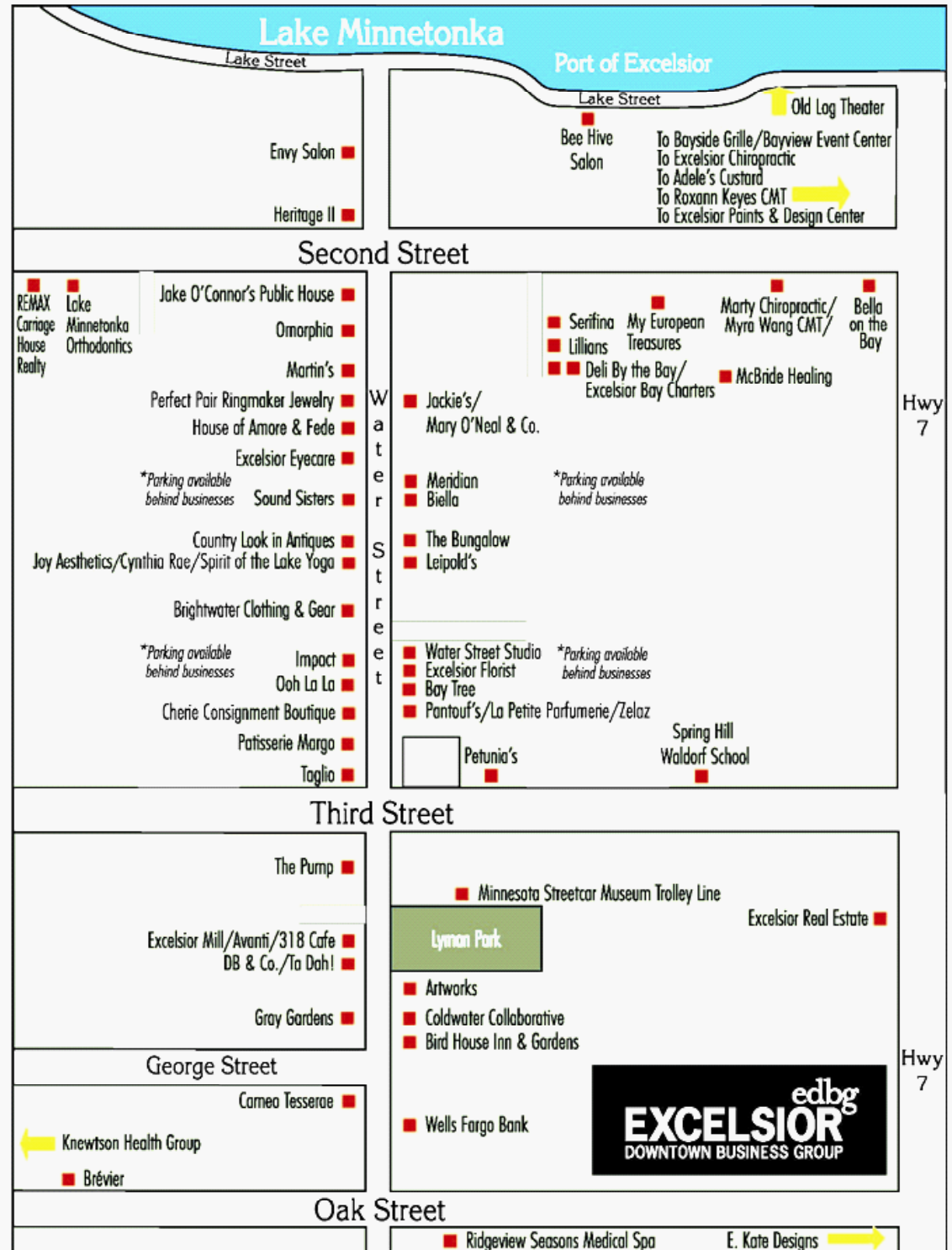
These affect viewsheds and light, provide structure, and heavily influence the spatial sequence of a trail corridor. An example of an open landscape is an agricultural field or meadow, while a closed landscape may be a segment of corridor surrounded by thick, overhanging trees or large buildings. An ideal trail has a contrasting sequence of both open and closed landscapes.

### **Light and dark areas**

These are determined by sun exposure, topography, surrounding vegetation, and adjacent structures. Light and dark areas alter the trail's environment, affect the soil's moisture content, influence temperatures, and vary the quality of the trail's features.

# Project Emphasis

Retail store and business locations



# Plan For Proceeding

## Design Methodology

A mixed method design approach will be applied. Quantitative and qualitative data will also be used throughout the process and will be based upon the theoretical premise guideline. All research data will be integrated within the stages of design. Analysis will be concluded through research and development. Quantitative data will include, but is not limited to, statistical data as well as supporting documentation. Current master planning, surveys, archives, and interaction will be primary source for this type of documentation. Display documentation will take place through digital media of photography, images, and 3-D representations such as modeling or built forms.

# Previous Experience

## Second Year Studio:

First Semester: Autumn 2007

Kathleen Pepple  
“Klai Hall” -Fargo, ND  
A student space.

Second Semester: Spring 2008

Mark Lindquist  
“Alley Park” -Winnipeg, Canada  
A public urban park.

## Third Year Studio:

First Semester: Autumn 2008

Stevie Famulari  
“Sublime Phenomenon” -Fargo, ND  
Temporary Environmental Art

Second Semester: Spring 2009

Kathleen Pepple  
“Lions Park” -Battle Lake, MN  
A recreational park.

## Fourth Year Studio:

First Semester: Autumn 2009

Mark Lindquist  
“McCormick and Baxter” -Portland, OR  
An urban rivershore development.

Second Semester: Spring 2010

Stevie Famulari  
“Remediating the Consequences of History”  
-Los Alamos, NM  
Phytoremediation design of Acid Canyon.

## Fifth Year Studio:

First Semester: Autumn 2011

Dominic Fischer  
“Landscape Interventions in the Red River Basin” - Fargo, ND  
Alternative flood remedies using design strategies



# al e minnetonka



Research Summary  
Research Documents  
Case Studies  
Historical Context  
Goals

## Program



# Research Summary

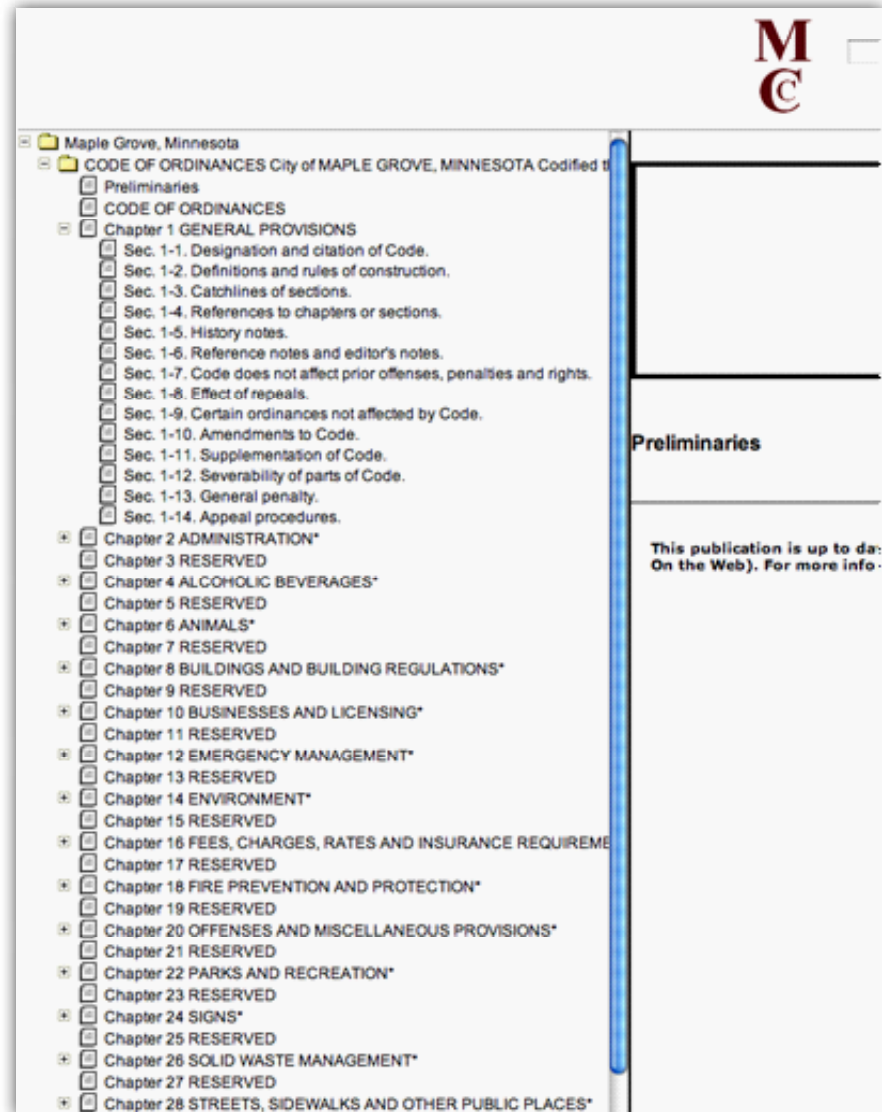
## Theoretical Premise

Americans continually seek out places that trigger memories or create rhythm of sorts. In all memorable urban spaces, trees complement built structures and create or define outdoor rooms and corridors to make one feel protected or at home. The trees in these well-designed spaces express the seasons with their leaves and record time and growth, actually influencing time and growth in people as well.



# Research Documents

The Excelsior Code of Ordinance was last updated in December of 2010 . It is organized in a way to allow for ease of public access. The chapters have been conveniently arranged in alphabetical order. This code constitutes a re-codification of the general and permanent ordinances of the city of Excelsior, Minnesota. The source of each section is included in the history note appearing in parentheses at the end thereof. The absence of such a note indicates that the section is new and was adopted for the first time with the implementation of the code. Using the comparative tables appearing in the back of this code, the reader can locate any section of the 1984 code as supplemented, and any subsequent ordinance included therein. Notes which tie related sections of the code together and which refer to relevant state law have been included. A table listing the state law citations and setting forth their location within the code is included at the back of this code.

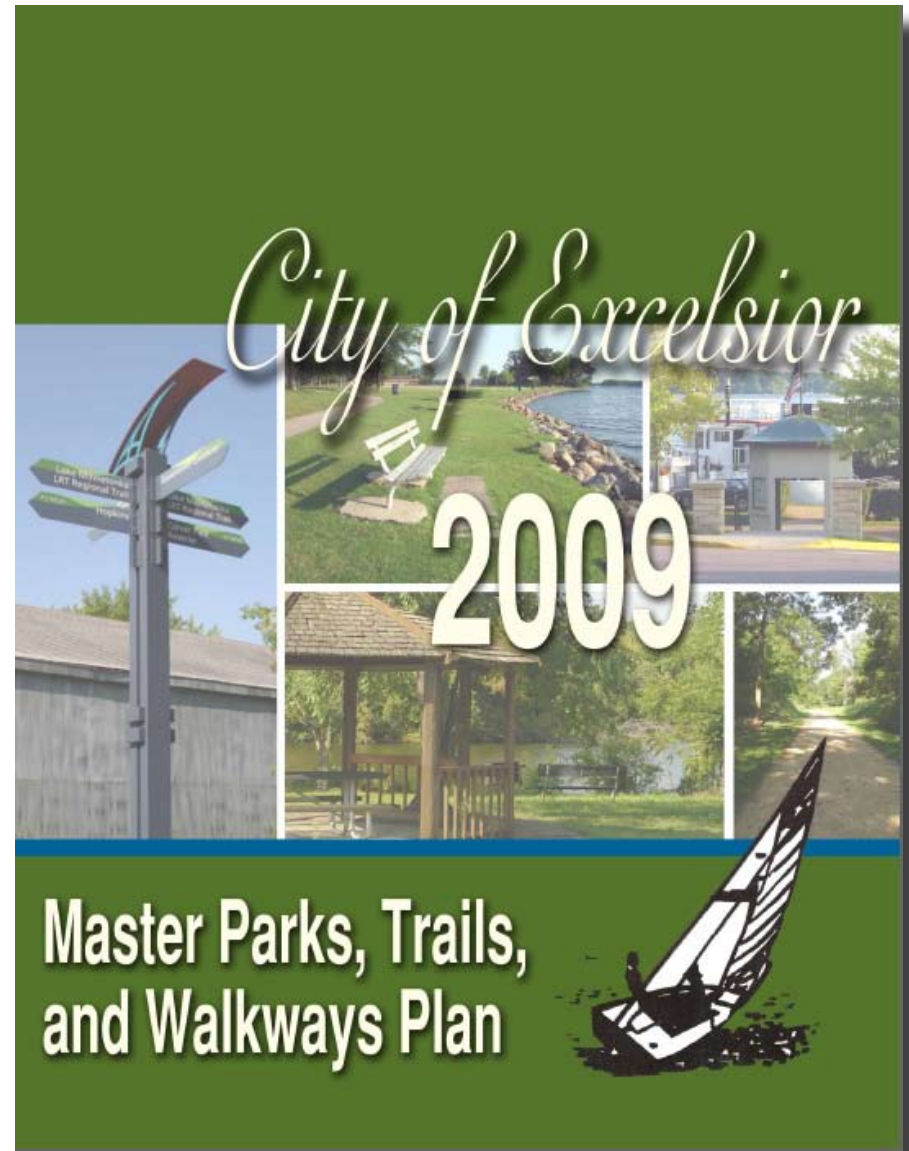


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## Planning

The Excelsior Comprehensive Plan is the long-range plan for land use and growth. It is comprehensive because it provides guidance for all aspects of the city's growth and development. The plan is a set of goals, policies, maps, illustrations, and implementation strategies that state how the city should grow physically, socially, and economically.

The Comprehensive Plan provides the overall scheme of city development – the major land uses, transportation systems, parks, recreation, housing, open spaces, and centers of shopping and employment. In its operation, the Comprehensive Plan provides the following directions to city-elected officials and staff. It was adopted in 2009 and indicates locations of all the Master Parks. It also states a tentative deadline to when rails, walkways, etc are to be completed.



<http://www.ci.excelsior.mn.us/>



# Case Studies

Louisville Waterfont Park, KY



Urban Parks near a densely populated framework are more valuable than imaginable. Not only are they efficient epicenters promoting healthy living, social prowess, and filtration for runoff but they also encourage compact growth within the city. Density is always a fundamental decision in city design. It sets that framework for all other features including proximity to necessary amenities and services. In other words, the parks formulate an equation towards complete neighborhoods. Mixing places of work, shopping, education, and recreation within a compact city neighborhood potentially reduces the demand for vehicle trips.

## About the Park

Louisville Waterfront Park is the welcome mat to Kentucky, a playground for people of all ages, and a gathering place for folks community wide. It hosts events such as concerts and festivals. There are also a varying range of activity driven design such as picnic spaces to congregate, quiet spaces along the river encouraging amazing inviting views. It can even accommodate crowds of up to 350,000 on the 85 acres of land. The park is made up of three phases and totals 85 acres. The last phase, Phase III was completed in June of 2009.

Phase I was completed in 1999. It contains broad, open spaces appropriate for large events similar to the already constructed 'Commons Park' in Excelsior. The centerpiece of Phase I is the Great Lawn, the park's most distinctive open space. Touching the Ohio River and rising gradually over its 14 acres, it ends at Witherspoon Street, connecting the river to the city. Phase I is where the largest waterfront events take place, including a natural amphitheater to the heavens for the Independence Festival on July 3rd and 4th.

Just north of the River, Phase II is a promising take on what a waterfront park can actually be. In contrast to Phase I, Phase II is a place where it is possible to feel nature without a reminder that the city is right over your shoulder. It offers medium to small spaces suitable for picnics, weddings, parties, and small events.

Lastly, the final phase of the Waterfront Master Plan was opened to the public in June 2009. It is commemorative and intimately pronounced to the history of Louisville. There is a large memorial along a riverside promenade that commemorates Abraham Lincoln's lifelong Kentucky connections.

According to the Waterfront Master plan: "In broad philosophic strokes, the Master Plan seeks to pull into the 21st century the cultural waterfront heritage of the 18th and 19th centuries, to interpret and restore the ecology of the river as it was before western civilization, and to extend downtown Louisville to the river--and conversely, magnify the presence of the river and extend the river into downtown. In so doing the Waterfront can become a vessel for public activities, with the natural systems of the Ohio River Valley generating its structure and power. Finally, it is the spirit of the people who will fill this space that adds the most necessary dynamic, that of the natural exuberance of human life."



# Case Studies

Tanner Springs Park, Portland, OR

There's a sense of place study designed by Atelier Dreiseitl and GreenWorks for bringing the relationships of water and land together. It provides a social hub to draw the community in and utilizes specific lakeshore elements that make it mesh within the interior of the city.

Tanner Springs Park  
NW 10th Ave & Marshall St



## About the Park

Tanner Park is a geometric phenomena knit within the fabric of the well known Pearl District. It is connected to the busy Jamison Square two blocks away by a wooden boardwalk made of ipe. As early as 1990, the creation of an extensive open green-space network remained the main goal in efforts to draw crowds and promote green living. Some unique features of the sensory pleasing atmosphere is that it's centrally located within a network of multi-use buildings. The park plays off materials that are relative to waterfronts and the history of the railroads. This can be seen in the ipe boardwalk, rusted steel sheet pilings, and art installations composed of rail tracks. Tanner Springs Park is a quiet and naturalistic setting, yet when stripping away the industrial cover, the intention of reconnecting the neighborhood with the pre-industrial wetlands is successfully mastered.

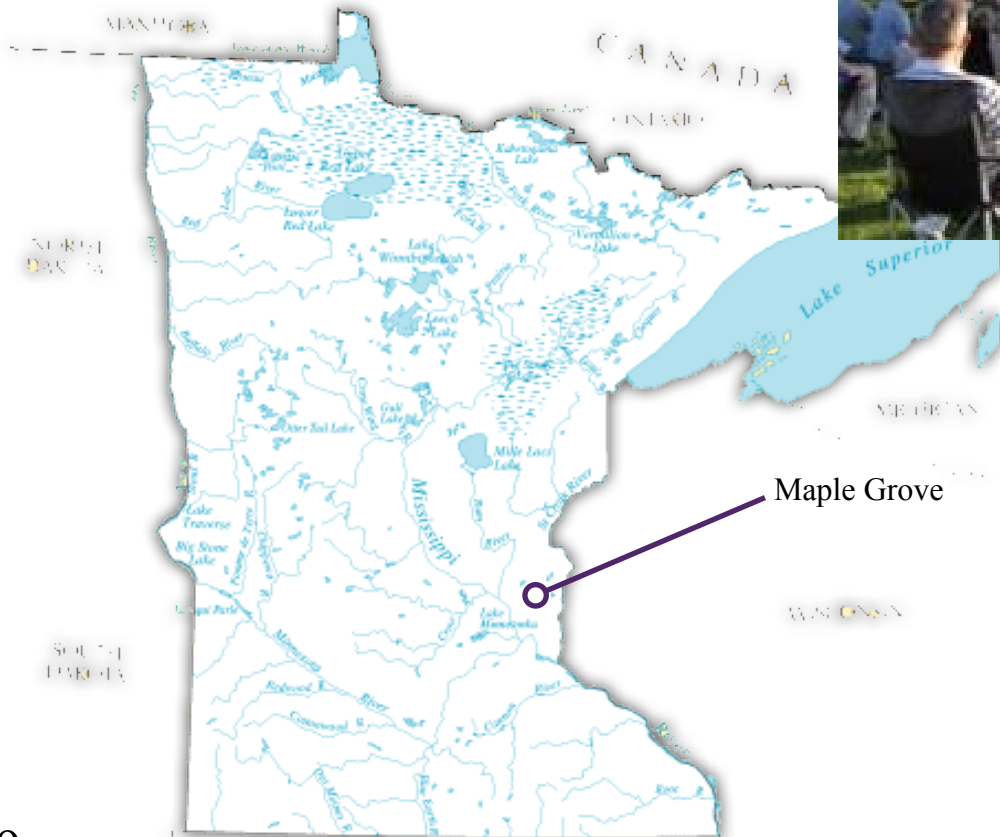
“The final plan is characterized by a series of recurring elements which strengthen the connection between each of the three parks.” Jamison Square was the first to be developed. North Park Square was the working name given to the second block to be developed. The design of Tanner Springs Park attempts to recapture the area's past with its native wetlands and flowing tunnels that ultimately connects to Tanner Creek, hence the name.

# Case Studies

## Town Green, Maple Grove, MN

What is the Town Green? A brand new urban park connected to the Hennepin County Library provides a distinctive community gathering place with it's sole purpose of entertainment and performing art shows. The iconic shelter drawing all the attention is an immaculately built bandshell with a dramatic wing-like canopy located on the water's edge.

The three pavilions include a concession space, rest rooms and a rentable meeting room for small gatherings or parties.



## About the Park

The Town Green plaza along Main Street provides a relaxing setting for daily park activities. Another distinct feature of the park is the peninsula, which is a great spot to experience the lake or host a small event.

The band shell went through an extensive design development process that included the study of various concepts and architectural styles. Through multiple revisions, the design molded to a subtle and simple form. The architectural theme of the band shell canopy meeting the sky is meant to have multiple associations with nature: an abstract grove of trees, the delicate and curved maple seedpod, and clouds. The 105-foot wide white concrete canopy is supported on six narrow concrete columns and gently arcs toward the sky in an acoustically-formed shape. At night, there are reflected lights on the underbelly of the canopy, creating a very lively atmosphere when there are late movies or shows.

Excelsior's 'Commons Park' can and should further develop some of its community gathering spaces. The current status of the bandshell is simply a 4 sided geometric wall that could possibly use some revamping after 15 years of usage.





## Typological Summary

All three of these case studies provide a framework for the project in Excelsior. The studies in Portland and Kentucky represent cities that were at a stage of growth or meeting their peak limit of growth and density. Due to this, some of the old infrastructure was in need of redevelopment to improve the quality of space and land use. In both studies, sustainable green planning with an emphasis on tourism design surrounded by the historic outskirts of the cities make the sites places of comfort and relaxation. Essentially, the diversity in neighborhoods should improve due to the new recognition of Excelsior should it take on any of these case study models. Ecologists have established that a healthier ecosystem will have more plant and animal diversity. In both studies, mixed-use and smart growth were primary factors in the expansion of the city.

The Town Green case study is more of an aesthetic implementation that hypothetically could make 'The Commons Park' a staple to the already thriving community. An alternate placement closer to the lakeshore along with a new design could go a long way being that it's such a popular area during large events. The new bandshell could possibly even influence the development of a connecting boardwalk to the shelter taking an individual along the ridged rocky shoreline west to the beach.

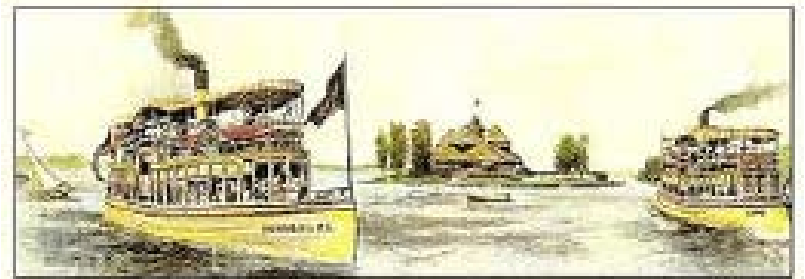
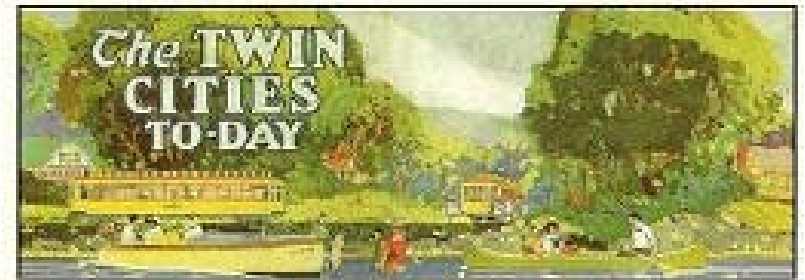
# Historical Context

## Excelsior

Lake Minnetonka offered up some of the most prestigious hunting and camping grounds for many years and surrounding it's wooded landscape boasted sites considered by the Dakota Indians to be sacred. The Dakota's were the earliest indication of any human activity in an around the South Lake Minnetonka area. There is clear, concise evidence and artifacts such as burial mounds left by the ancient people located in the area.

Unfortanetly, as pioneers moved west across the Mississippi in the mid-19th century the Dakota feared increased encroachment. Tribal leaders asked the national government in Washington to have the Lake Minnetonka area included in the lands reserved for them in the 1851 Treaties of Traverse des Sioux and Mendota. This request was denied, and so the Dakota became silent bystanders as their hunting grounds were opened to settlement (Meyer, 1993).

In 1852, an opportunist and entrepreneur, tailor George Bertram traveled from upstate New York in search of prime western land to purchase and develop. He finally stumbled up the picturesque South Lake Minnetonka area where he wrote:



<http://elmhs.org/>

## Excelsior

“I have selected a site for a village and farming country, that for healthfulness of climate, fertility of soil, beauty of scenery and nearness to markets cannot be surpassed by any other locality in the country, being within twelve or fifteen miles of two of the most important towns in the territory, and having a front on a lake navigable for steam and other boats over forty-one miles, its waters clear as crystal and abounding with fish. The land around the lake is also supplied with natural meadow, the country is gently rolling and interspersed with the most beautiful growth of timber that the eye could wish to look upon, consisting of sugar maple, black walnut, butternut, white and red oak and a variety of others; also with wild fruit, grapes and berries of almost every kind; the whole country, in fact, possessing almost everything that the heart of man could wish for.”

After forming the “Excelsior Pioneer Association” in 1853, Bertram and fellow business partner Robert McGrath, began to construct homes and businesses in what is now the city of Excelsior. The origin of the city’s name is thought to come either from Longfellow’s popular poem “Excelsior,” or New York State’s motto “Excelsior” – meaning “Ever Upward.” In any case, the name suggested the optimistic, striving nature of the community the settlers from the East hoped to build.

Blessed with scenic beauty, plentiful game, rich soil, and the immense expanse of water, the town flourished. The town was first platted by George Galpin where the lakeside “Excelsior Commons” was set aside in agreeance by the settlers as a “public pleasure ground,” to be owned and enjoyed by the neighboring citizens and townships. And now after 150 years of service, this expanse of green running along the shore is one of the few pieces of publicly controlled land continuing to serve such a purpose today.

## Excelsior

Excelsior was incorporated in 1877, and soon became an international tourist mecca. It may have never catered to factory interests, but you can't go without mention of its great fruit industry. Their fruit industry was no understatement either, practically all the south shore fruit is handled through what was known as the "Excelsior Fruit Grower's Association." Excelsior was complete with 4 deluxe hotels and a bountiful of luxury excursion steamboats. Summer homes and cottages sprouted up along the shores of Lake Minnetonka. Often times their owners made the daily commute from Minneapolis by streetcar, swelling the population during the summer months. One might imagine that being the inevitable summer attraction it was that it might not be the most desirable place to raise a family due to the noisy hustle and bustle of frequent crowds, but this was not the case. In fact, it would be a difficult matter to find a more orderly, restful, and serene home town.

Although tourism was the area's largest industry like I touched on earlier, many residents were employed in agriculture, growing berries, apples and other fruits which were then shipped by rail to markets across the country. Lyman Lumber Company also employed many in Excelsior, beginning as a small lumber yard in 1897.

From 1925-1974 Excelsior was home to the popular Excelsior Amusement Park attracting hundreds of thousands to the area each summer. It opened on May 30th and was said to have 20,000 people in the park the first day. The streetcar from Minneapolis delivered visitors to the amusement park, which was located where Bayside Grille, Maynard's Restaurant, and the Gables Condominiums exist today. Fred Pearce, was known as "Mr. Roller coaster," due to his international fame of building 27 coasters at amusement parks across the country. He proposed the plan to the Village Council meeting was eventually approved and work began in the fall. Pearce later emphasized how the park proved to be his most unusual job in because he had to extensively dredge some of the land and fill in some ten acres of swamp ground to add acreage and improve the shoreline to increase the lake frontage to 1,600 feet. Pilings were also added to support the attractions at the amusement park, which later closed in 1973 due to the lack of room to expand (Meyer, 1993)

The park's ballroom hosted musical acts from Tommy Dorsey to Lawrence Welk, and in later years, the Beach Boys (1963) and the Rolling Stones (1964). The Old Log Theater in Greenwood opened in 1940 and continues today, having entertained over six million people over the years.

Today, Excelsior's historic business district serves the city's 2,400 residents and thousands of others from surrounding communities. Shops, services, dining and entertainment on historic Water Street and the area's many historic homes offer a glimpse of the community's beginnings and continue to attract visitors today."



# History Timeline / Population Trendline



<http://elmhs.org/>



Here is an artist's perspective or rendering of the site back in its heyday between 1906-1911. This fanciful overhead night view portrays Lake Minnetonka as a Midwestern tourist Mecca. The Lake is lit up as steamboat navigate from town to town.

# Thesis Goals & Objectives

## Excelsior Objectives

### THE COMMONS AND PORT OF EXCELSIOR POLICIES

- Preserve the Commons Park and the Port of Excelsior as the preeminent city assets to be enjoyed by residents and to be shared with the greater community.
- Work to enhance the facilities, beaches maintenance, appearance, landscaping, and trees of the park and port area.
- Consider the Port of Excelsior as a gateway into the community and as such, improve the signage, add restrooms, and enhance the service areas for charter boats.

### EXCELSIOR PARKLAND POLICIES

- Develop a plan for the potential re-use/facility options for the Excelsior Parkland including Studer Pond.
- Improve access to the Parkland over/under County Road 19 by the addition of a trail from College Avenue to the Parkland.
- Work to improve the signage, appearance, and maintenance of the Parkland.

### SPECIAL POPULATIONS POLICIES

- Meet the needs of seniors and other special populations by providing programs and services including recreation, and information and referral services.
- Provide recreation programs and facilities for disabled persons as the needs for those facilities and services dictate.
- Introduce individuals with developmental disabilities to a variety of leisure opportunities within the community that encourage development of individual skills and behavior.
- Evaluate the younger and aging population in Excelsior and their future needs in relation to existing facilities and programs in order to project future growth requirements.

# Thesis Goals & Objectives

## Academic Goals

- Educate the public of the rich historical context that lies in excelsior and how it can once again be a beneficial tourism epicenter.
- Implement a design that will cohesively mesh the shoreline with the hardscape and pedestrian traffic without hindering a notable wildlife habitat.

## Career Goals

- My future career aspirations break down to re-focusing fragmented or broken community development with an emphasis on sustainable procedures to inflict onto a promising area. Lakeshore recreation and tourism is an interest of mine in due part for my love of the great outdoors and leisure activities it provides (fishing, hunting, camping, and so on).

## Personal

- Continue to expand my comprehensive architectural knowledge and vocabulary to equip myself in the field, thus increasing my confidence and ability to communicate with professionals and clientele.
- Acknowledge that it's alright to be out of my comfort zone at times and make it a priority matter to stretch my own limits and possibly learn 3D Studio Max, Dreamweaver, Adobe Flash, or even a new rendering software such as Maxwell Render to create interactive representations.
- Remain attentive, focus, and be involved in the design process at all times to promote an optimal likelihood of success.
- Contribute in constructive criticisms and critiques which inevitably should increase competence and awareness of possible design strategies to employ in future projects.





# minnetonka

- Site Photos
- Site Analysis Issues
- The Commons/Port of Excelsior Assessment
- Schematic Plan: Circulation & Zoning Map
- Existing Site Plan
- Area of Focus
- Pedestrian Safety: Circulation and Nodes
- Land Use, Topography, Property Assessment
- Demographics
- Opportunities

## Site Inventory/Analysis





# Site Photos



Old Pier and Transit taxis

Parks and Event Celebration



# Site Photos Continued



Panorama of Private Docks



Panorama of Park Shoreline



Panorama of Port Entry

# Site Analysis Issues

## Transportation Issues

- Disconnect to water: Need for reactivation of waterfront
- Poor access to Excelsior Bay
- Traffic congestion throughout the City, Downtown in particular
- No clearly defined waterfront destinations except park beach
- There is a need for sidewalk trail linkages and connections
- Traffic speed
- Pedestrian/bicycle crossings on Water Street and throughout the community.
- Appearance of private/public parking lots
- Streetscape improvements Downtown
- Public dock space on Lake Minnetonka

## Land Use Issues

- Disconnection from downtown to waterfront and Municipal Charter docks
- Lack of waterfront trails and connection to existing trails
- Under utilized historic districts
- Lack of available boat and Park Commons PARKING (Parking ramp)
- Lost sense of place or identity. Need for preserving historic character of city
- Maximization of the amount of green space in development/redevelopment
- Control of mass, scale, and building height of structures



## Existing Park Inventory & Assessment

Excelsior is serviced by a variety of recreational facilities provided by the City, regional government, school districts and private enterprise. In addition, the community has benefits from abutting communities whose facilities may service Excelsior's residents. This section summarizes these existing parks, trails, walkways, and open space facilities and the resources currently available to Excelsior residents.



Park Facilities	Park Class	Total Acres	Archery	Baseball Field	Basketball Court	Biking/Walking Trails	Boat or Canoe Launch	Conservation Area	Cross Country Skiing	Equestrian Trails	Fishing	Flower Gardens	Football Field	Hockey Rink	Horseshoe Pit	Open Playfield	Park Building	Picnic Facilities	Picnic Shelter	Playground Equipment	Pleasure Skating	Restroom	Sledding	Skate Park	Snowmobile Trails	Soccer Fields	Softball Field	Swimming	Tennis Court	Volleyball Court
<b>COMMUNITY PARK</b>																														
The Commons	CP	13.06			●	●	●				●	●				●	●	●	●	●	●	●					1	●	2	
	Total	13.06																												



Park Classification



Community Park



Location

Northeast edge of Central Business District on a peninsula between Excelsior and Gideon Bays.

Size

13.06 acres

Physical Features

The Commons' dominant physical characteristic is its extensive Lake Minnetonka shoreline, resulting in dynamic lake views and other beachfront areas. Topography varies from rolling hills to flat, shallow spaces. Spaces within the park vary from narrow shorelines along the southern leg to more generous, regular-shaped areas within the northern central area.

Vegetative Features

Mature canopy of trees are scattered throughout much of the park. These trees vary in their species and vitality.

Adjacent Land Use

Bordered by the Central Business District to the southeast, established residential neighborhoods to the south and west.

Notes and Comments

The Commons is the most heavily used park in Excelsior, providing two beaches, a playground, docks, and playfield, as well as space for a wide range of active and passive areas. It is the location of the Port of Excelsior and the site of special events such as the Fourth of July fireworks and Art in the Park. Events and the park's unique location draw many non-residents to The Commons. In this respect, it acts somewhat as a regional park as well as a community park.



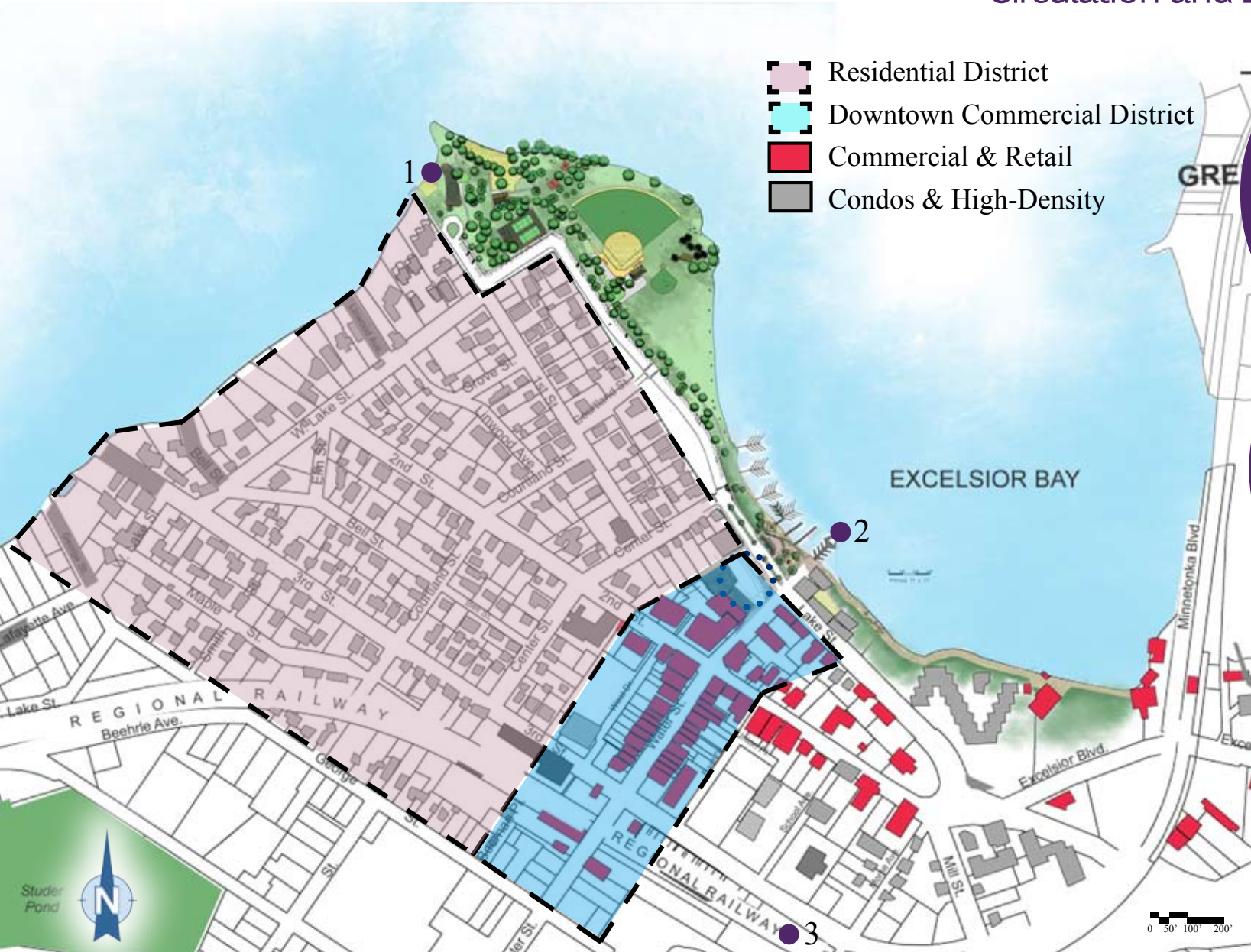
Park Facilities	Park Class	Total Acres	Archery	Baseball Field	Basketball Court	Biking/Walking Trails	Boat or Canoe Launch	Conservation Area	Cross Country Skiing	Equestrian Trails	Fishing	Flower Gardens	Football Field	Hockey Rink	Horseshoe Pit	Open Playfield	Park Building	Picnic Facilities	Picnic Shelter	Playground Equipment	Pleasure Skating	Restroom	Sledding	Skate Park	Snowmobile Trails	Soccer Fields	Softball Field	Swimming	Tennis Court	Volleyball Court
<b>NEIGHBORHOOD PARK</b>																														
Excelsior Parkland	NP	15.50				●													●											
<b>Total</b>		<b>15.50</b>																												



Park Classification	Neighborhood Park
Location	South of County Road 19 on the western edge of Excelsior.
Size	15.5 acres
Physical Features	Significant wetland area, referred to as Studer Pond, surrounded by vegetation and some undeveloped land.
Vegetative Features	Wetland aquatic community, limited canopy trees except at parcel edges.
Adjacent Land Use	Low density residential, freestanding commercial business and natural open space.
Notes and Comments	The Excelsior Parkland is currently utilized for passive use in an attractive natural setting. The park contains some undeveloped land which could be developed for more active use or the community may want to preserve it in its natural setting. The site is a former landfill site which may pose environmental constraints and implications. The City is currently working with Hennepin County and the Minnesota Pollution Control Agency on addressing any environmental issues.  Currently 40 rental garden plots, each 15 x 20 feet are available.

# Schematic Plan

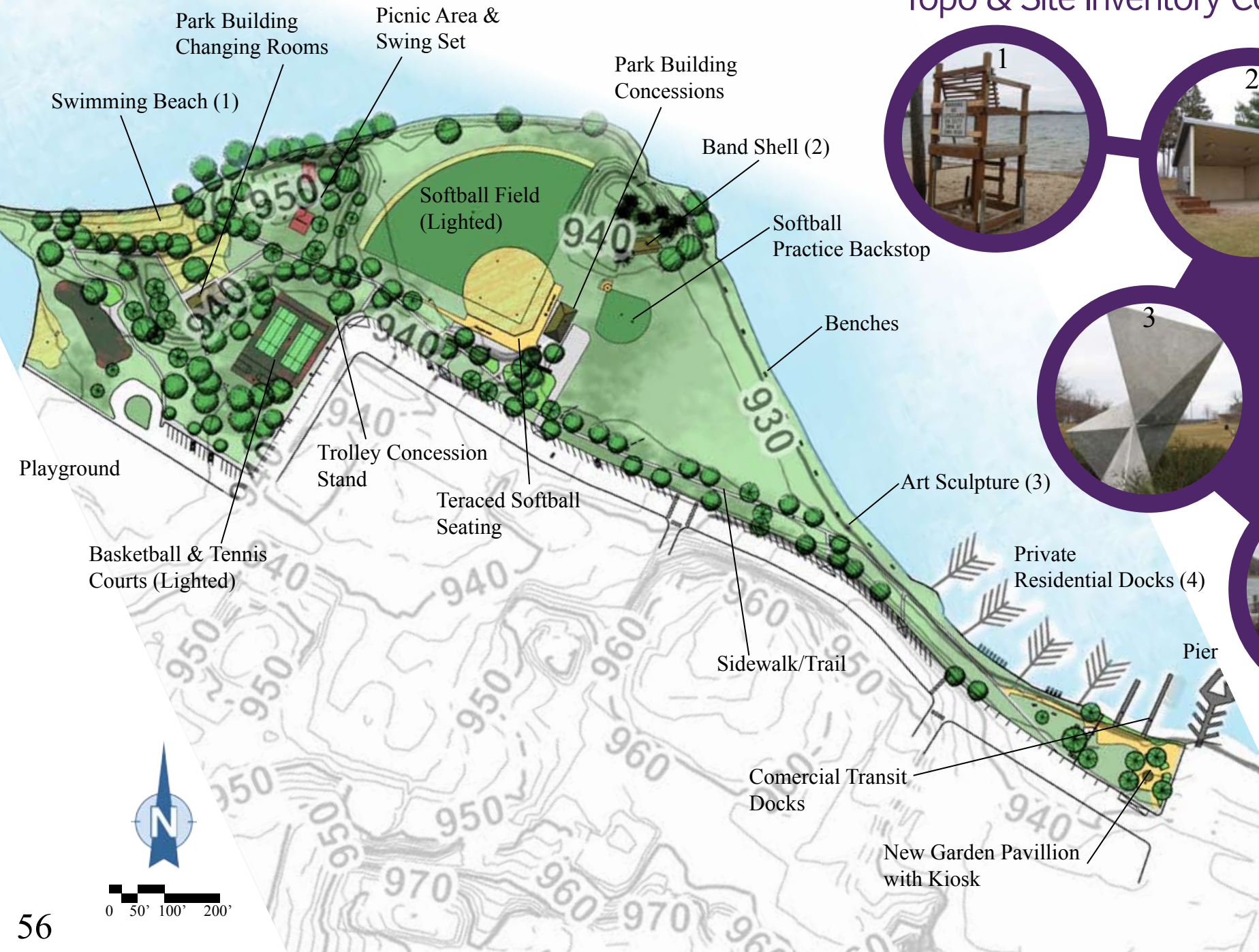
## Circulation and Zoning Map





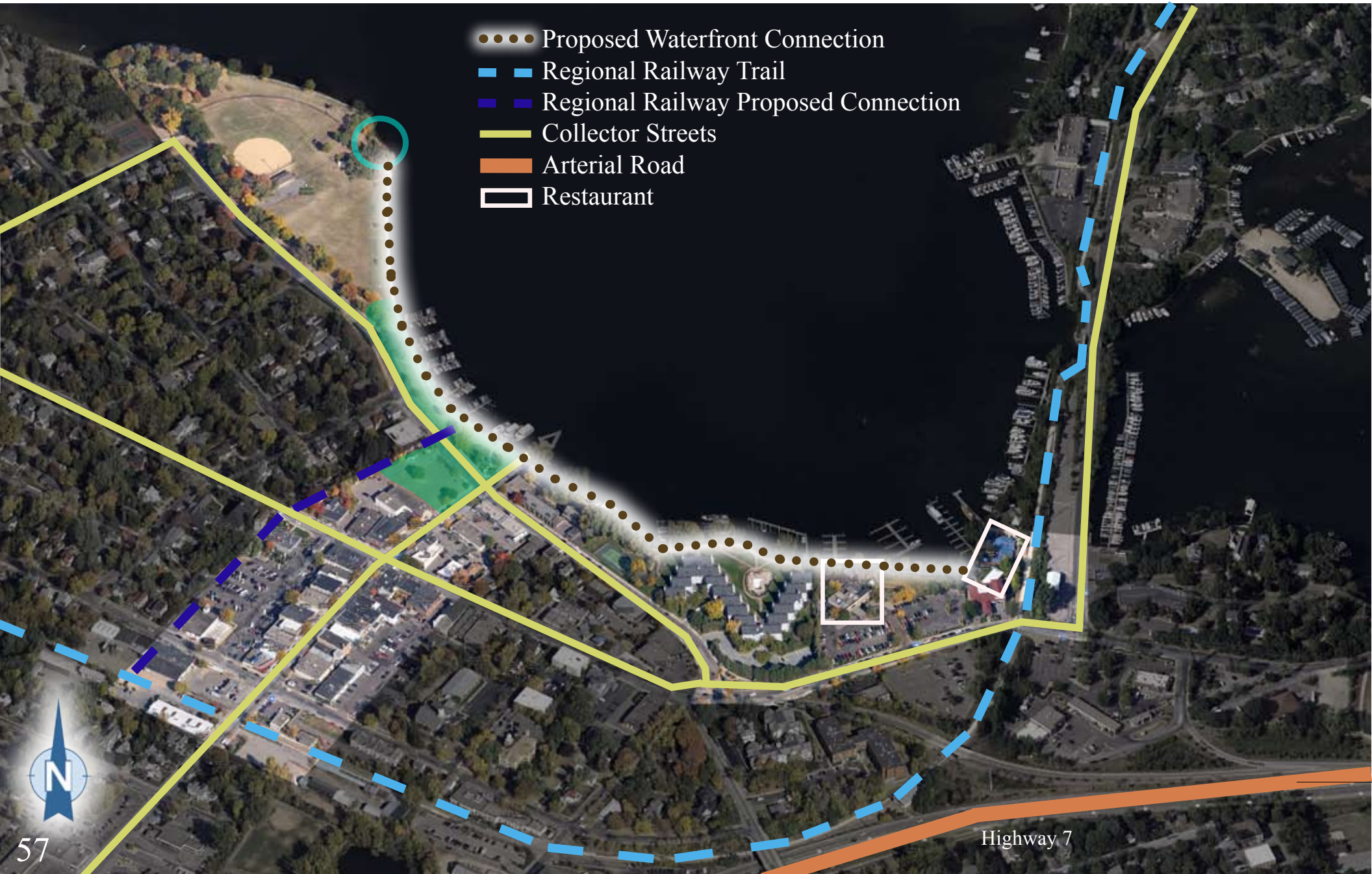
# Existing Site Plan

## Topo & Site Inventory Conditions





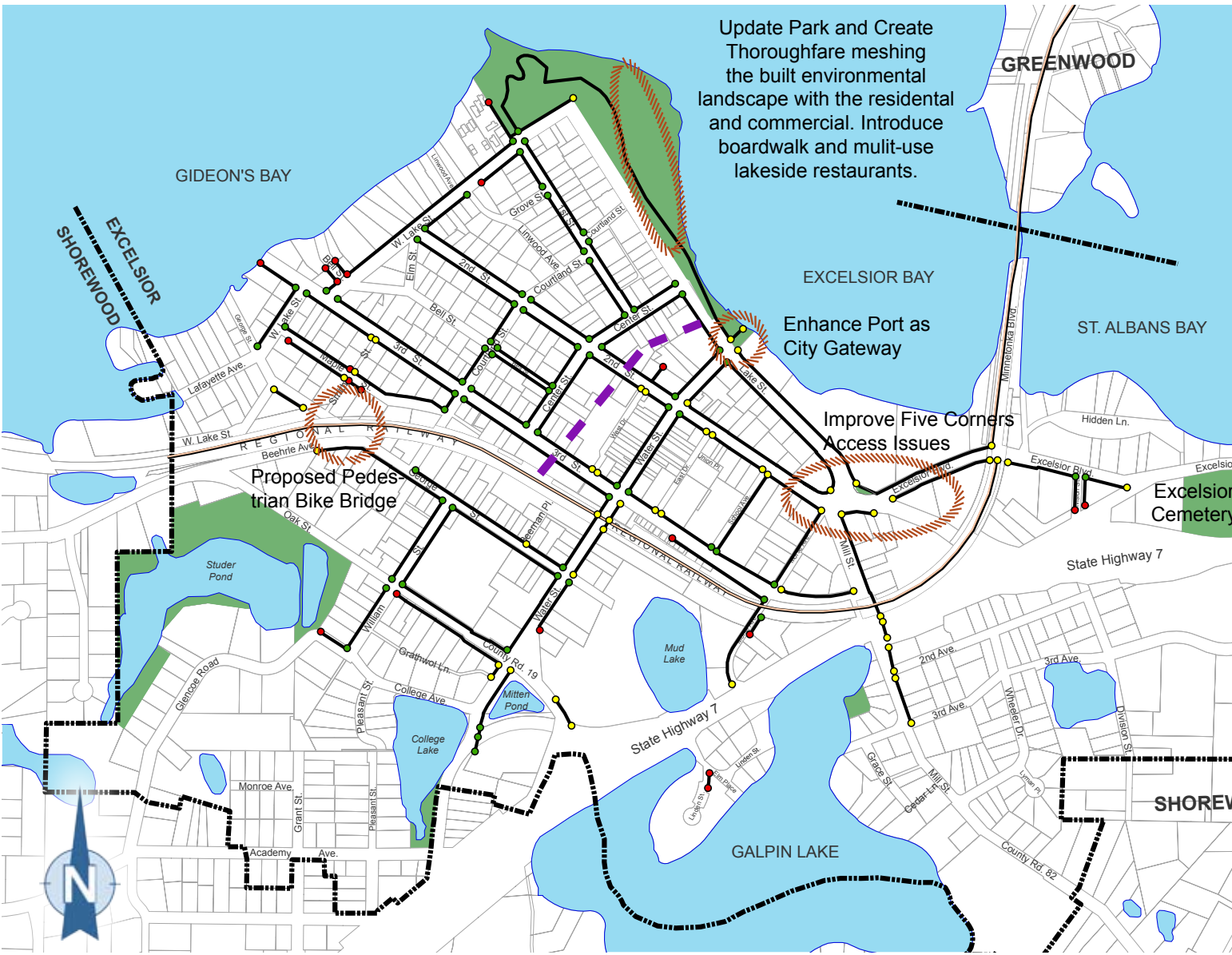
# Area of Focus



# Pedestrian Safety

## Pedestrian Circulation & Nodes

-  Areas of Interest
-  Possible Connection
-  Existing Sidewalks
-  Good to moderate
-  Disability accessible
-  Not Disability accessible



Update Park and Create Thoroughfare meshing the built environmental landscape with the residential and commercial. Introduce boardwalk and multi-use lakeside restaurants.

Enhance Port as City Gateway

Improve Five Corners Access Issues

Proposed Pedestrian Bike Bridge

Lake Street should be redesigned to allow for a more pedestrian friendly access path along the lake. It will further allow for the possibility of a widened boardwalk connecting to some multiuse high-density living along with a necessary hotel that would parallel the historic hotel that once existed there known as the Excelsior Bayfront hotel which burned down in 1945.

Between 1853 and 1964, there were more than 60 hotels and boarding houses around Lake Minnetonka, including the notable Excelsior House, according to "Lake Minnetonka's Historic Hotels," by Ellen Wilson Meyer.

There has always been an issue with local dock parking. Recently Excelsior installed dock meters to alleviate this issue however there is still a limited amount of space for yachts 30 feet or longer.

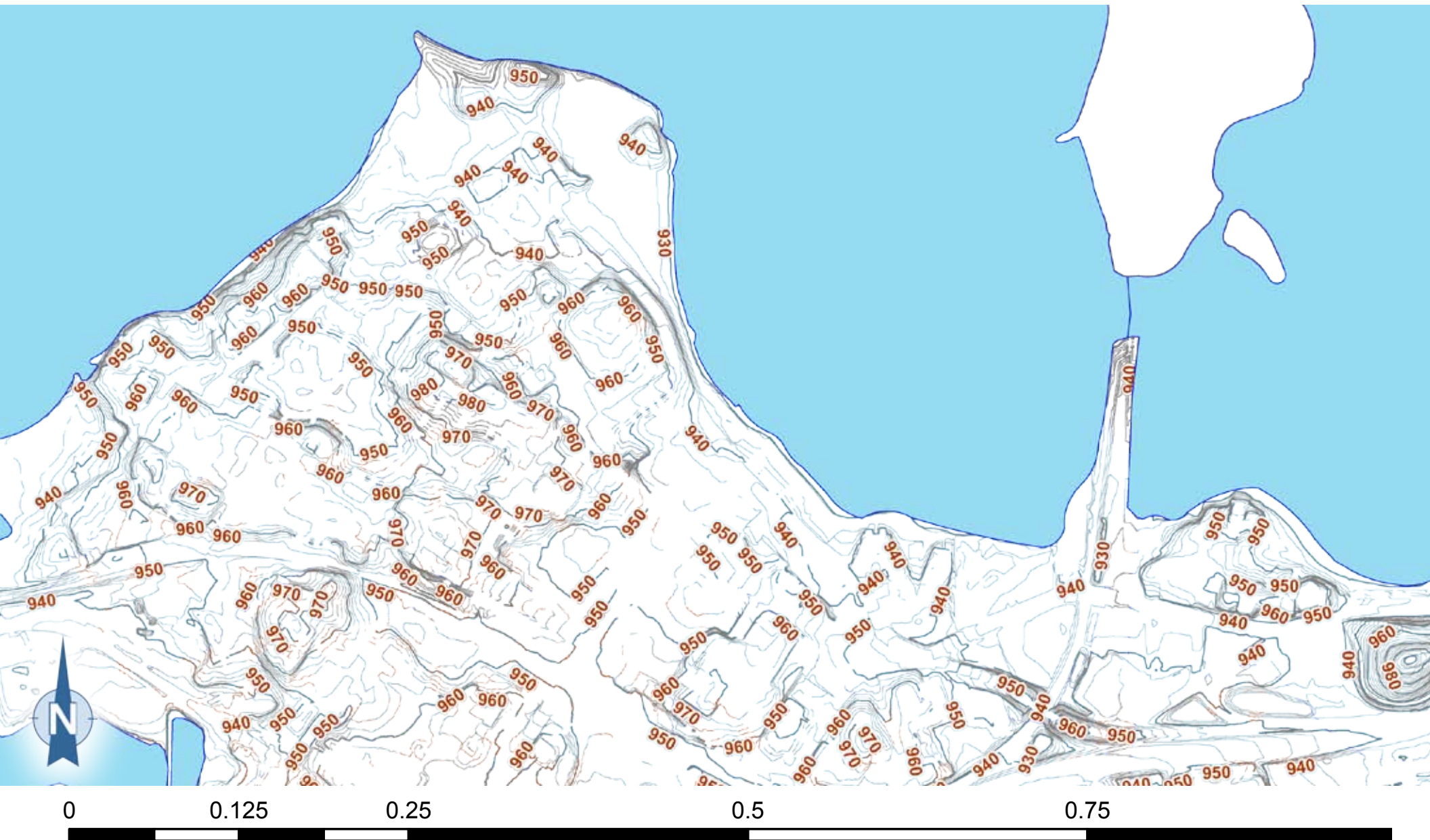


# Inventory: and Use

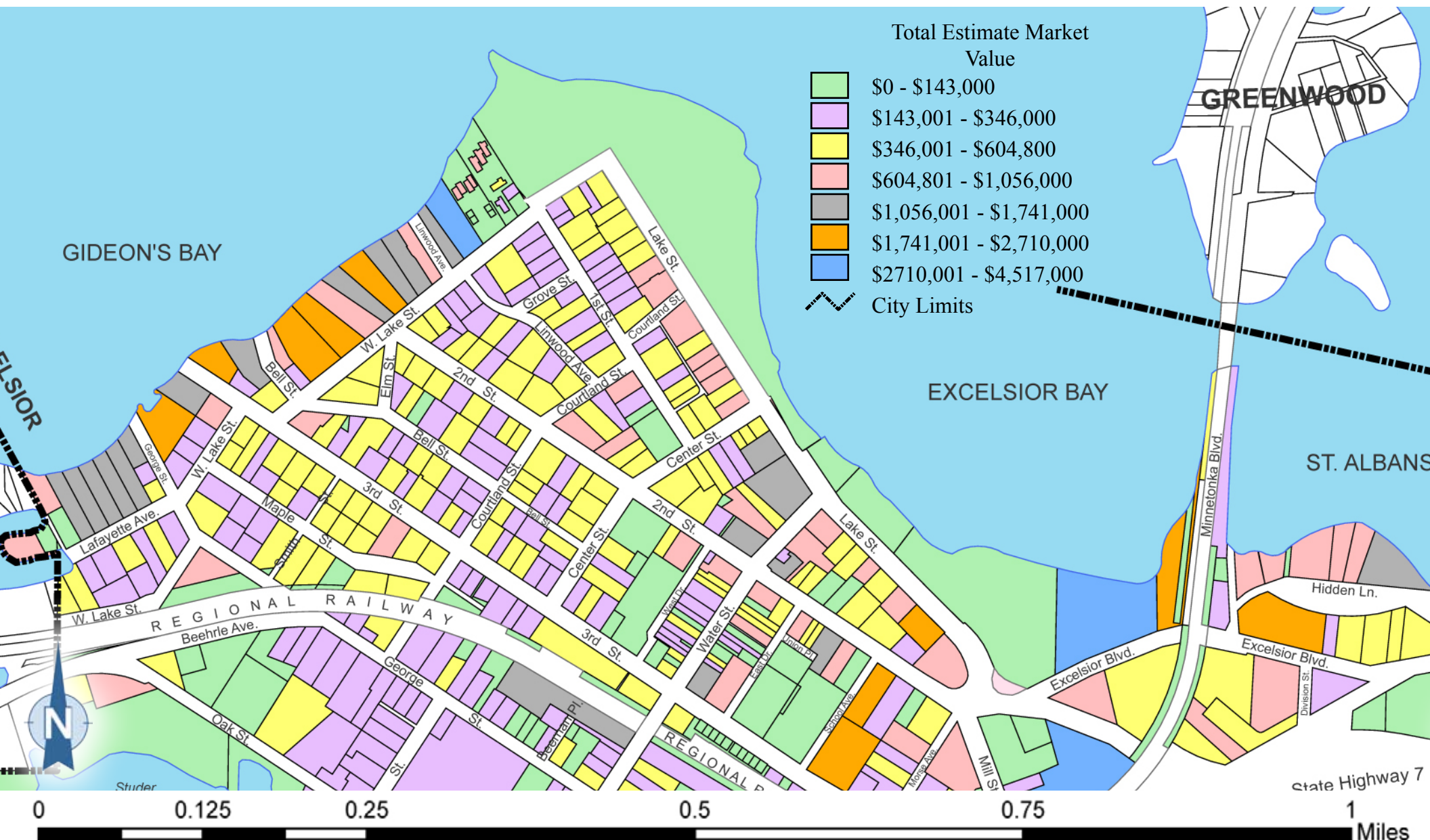




# Inventory: Topography



# Inventory: -estimated Property Value

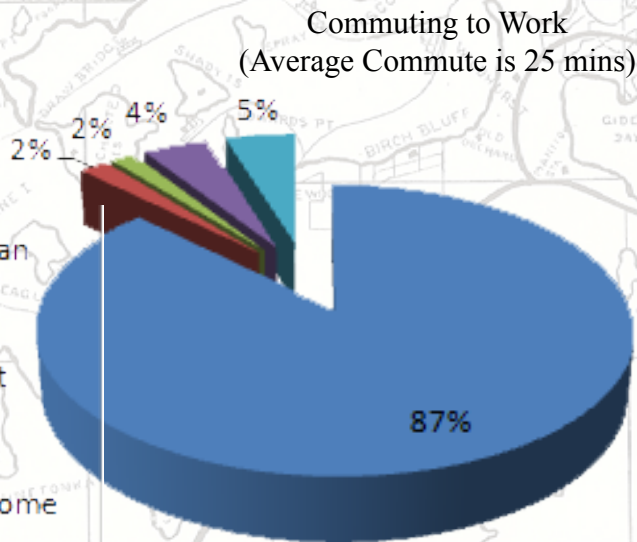
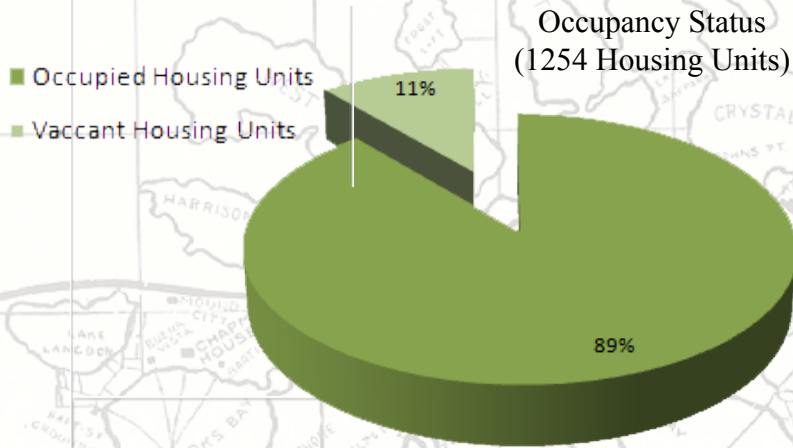




# Inventory: Property Age



# Inventory: Demographics



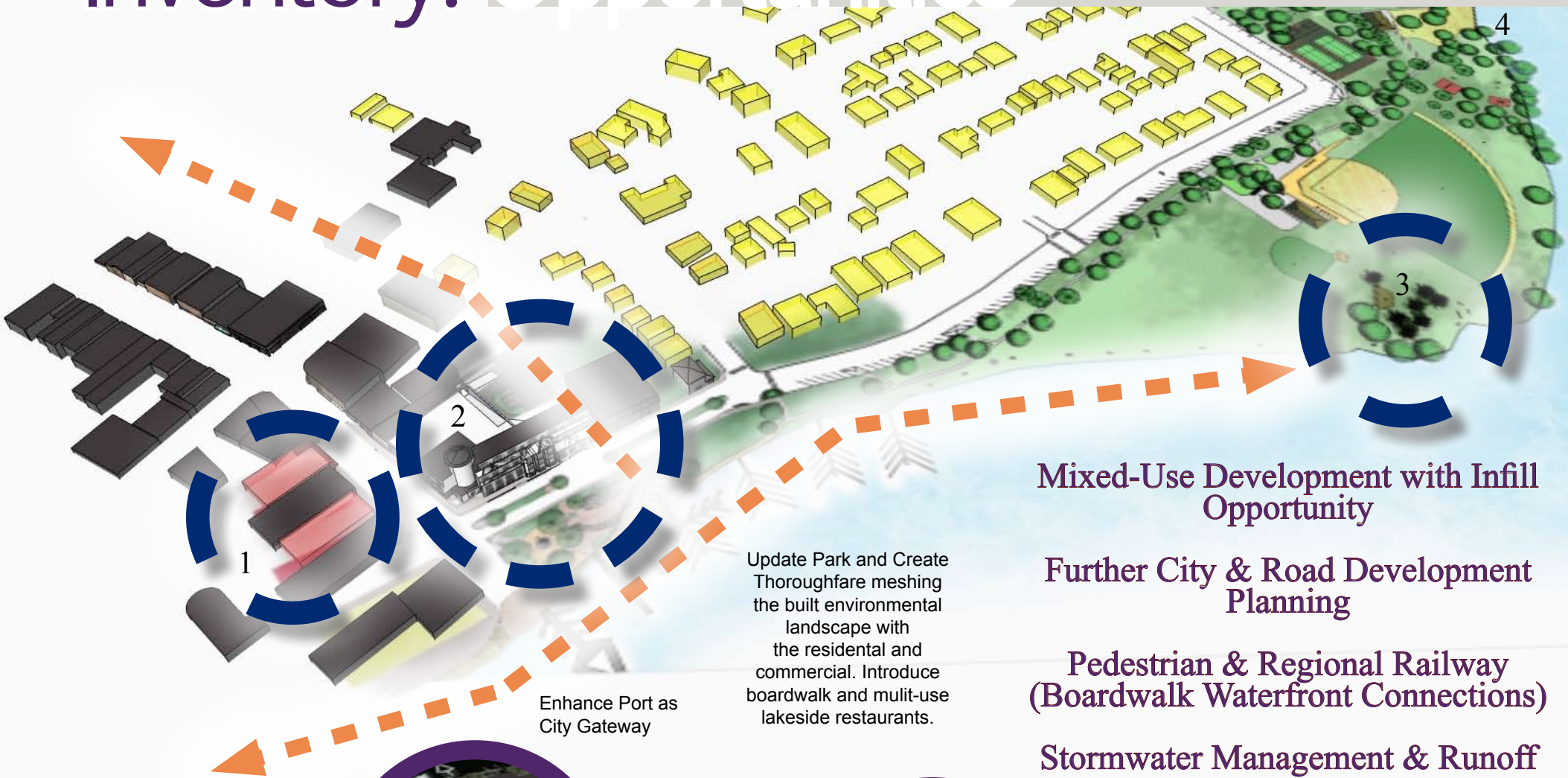
These Demographic figures to the left here initially were showing how the majority of Excelsior's population travels to work toward the Minneapolis area and because of this, there is an excessive consumption of fossil fuels. The possibility of implementing a mass transit system is not out of the question given that the former TCRT streetcar rail system emerged into what is now the Lake Minnetonka Regional Trail (LRT) which provides 27 miles of biking, walking, jogging, etc. Some of the former streetcar rails are now Highway 7. While the former corridor is now used for recreational purposes, the right-of-way could eventually be used for mass transit.

The Metro Transit also runs right along Water Street with two bus routes (670 and 671)

Since around 1975 the population has steadily decreased from a peak of 2,500 to 2,188 residents. Refer to page 45. What I did realize is that the inventory revealed that the much of the population is older in nature and the estimated property values are much higher now allowing a young home-owner base to move into the quaint connected town. The opportunity to create jobs and bring more tourism into the town might just change the perception of the once thriving town.



# Inventory: Opportunities







# Iako Minnetonka

SEVERELY TRUNKED TREES

- Preliminary Master Planning
- Master Plan
- Attraction Nodes
- Plaza Section
- Urban Waterfront Hub
- Market Pavilion
- Catalyst Active Park
- Materials Used
- Planting Suggestions
- Construction Detailing Documents

IMPLE SPACE  
THOROUGHLY  
FORM THE...  
UP AND LAYERING  
VEGETATION ON

- References
- Personal Information

HEDGE

BENCH

ENCLOSED  
PATH GUIDED  
BY VERTICLE  
WALL ON LEFT &  
VEGETATION ON RIGHT

PATH

LOW GRADE  
PLANTINGS

## Design Proposal

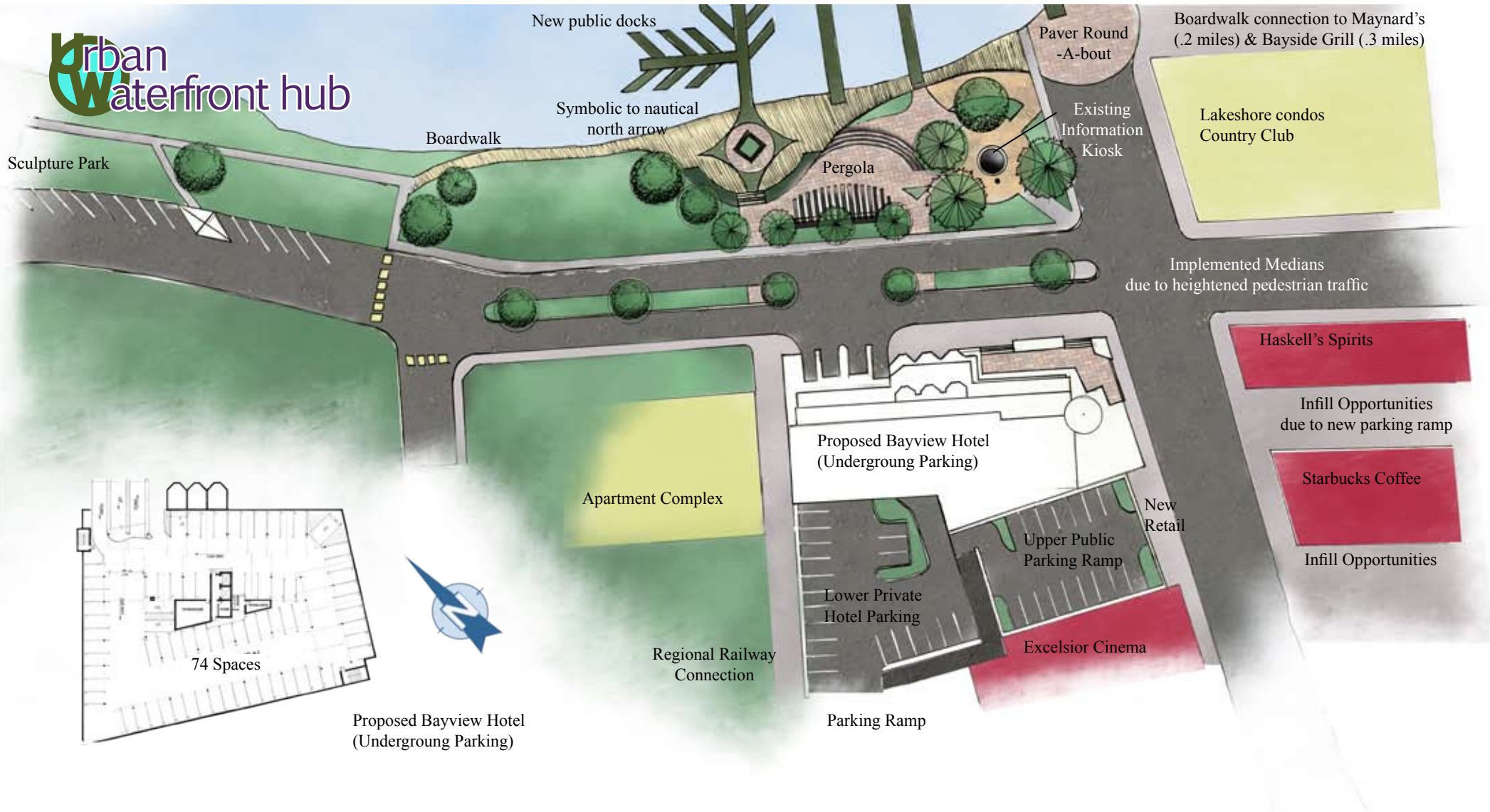




# Design: Preliminary Master Planning

## Site Detail

Urban Waterfront Hub



# Design: Preliminary Master Planning

Site Detail

**Catalyst  
Active Park**

Existing Baseball Diamond

Connection to Public Beach

Bluff

Renovated Bandshell

Built in terraced seating

Boardwalk bump-out for private interaction

Open turf

Continued boardwalk

Lake St.

Schematic diagram of what the restroom/concessions and service building could look like. The building design reference is taken from the structures that were found on the Excelsior Amusement Park grounds.





# Design: Master Plan



EXCELSIOR BAY



0 50' 100' 200'



# Design: Attraction Nodes



## Urban Waterfront hub

- Plaza
- Pergola with harboring shade trees
- Terraced Patio with material studies
- Public event seating for lake charters
- Informational Kiosk
- Interpretive waterfront boardwalk
- Connection to Regional Trail
- Pedestrian friendly median implementation
- Streetscape redevelopment
- Mix-use Infrastructure (Hotel & Retail)



## Market Pavilion

- Entry Pavilion Plaza into the park
- Public art display and Sculpture Park
- Opportunity for monthly or yearly gathering hub for farmers markets and events
- Relaxed earth mounded seating grouped with a knee wall fosters conversation and interaction
- New social epicenter for the public neighborhood
- A reestablished greenspace that was once under utilized



## Catalyst Active Park

- New public dock access
- Integrated bandshell with boardwalk
- Amphitheater and terraced seating for events
- Secluded private lake connection space
- Interaction with water (Swim)
- Increase Habitat Diversity
- Revamp Park Commons community space

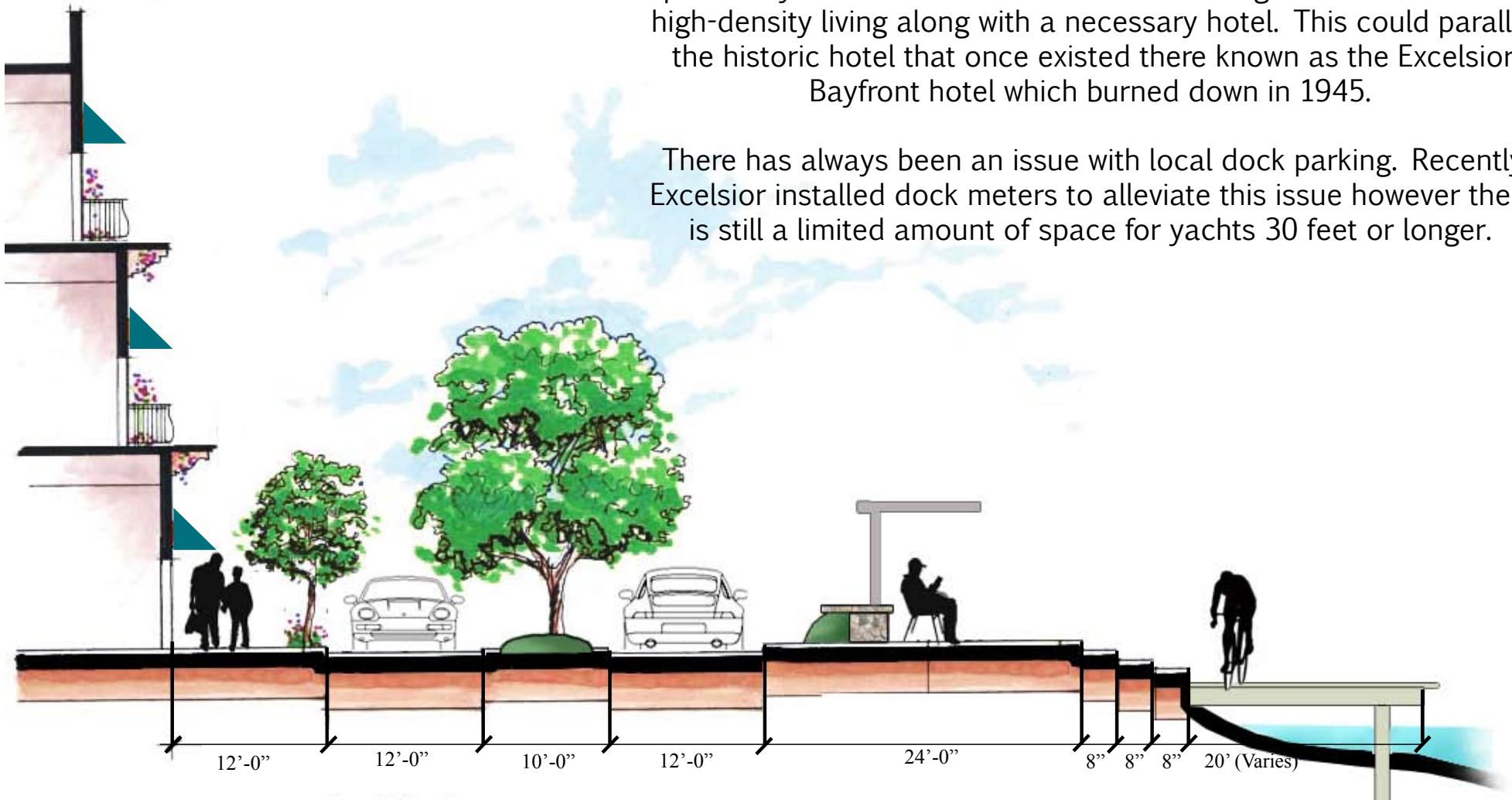
The design focus must extend beyond the park's boundaries and that is why a site analysis is necessary to be done before any design considerations are put into place. A few questions that one could ask are, will the proposed park development cause flooding? Will it cause traffic to back up into residential collector streets? Will the arrangement of new facilities (like the rundown bandshell) replace the pleasant view of undeveloped land?

This is where I ran into an instance that there was a large vacant lot in the works to be made into a possible hotel by the City of Excelsior. That being said, this changes the entire dynamic of the docks and port area. The rendering to the right shows the new development of the hotel along with green streets and a newly renovated patio and pergola waiting area for the charters. It is now a natural hub and this design should alleviate some of the poor traffic flow paired with some obvious downtown parking issues stated earlier.

# Design Plaza Section

Lake Street should be redesigned to allow for a more pedestrian friendly access path along the lake. It will further allow for the possibility of a widened boardwalk connecting to some multi-use, high-density living along with a necessary hotel. This could parallel the historic hotel that once existed there known as the Excelsior Bayfront hotel which burned down in 1945.

There has always been an issue with local dock parking. Recently Excelsior installed dock meters to alleviate this issue however there is still a limited amount of space for yachts 30 feet or longer.





# Design: Urban Waterfront Hub



Urban  
Waterfront hub

- Plaza
- Pergola with harboring shade trees
- Terraced Patio with material studies
- Public event seating for lake charters
- Informational Kiosk
- Interpretive waterfront boardwalk
- Connection to Regional Trail
- Pedestrian friendly median implementation
- Streetscape redevelopment
- Mix-use Infrastructure (Hotel & Retail)





## Design Concept

Perspective on the corner of Water Street and Lake Street looking NW

My preliminary drawings show a clearly defined meshing of the built lands with the natural cohesively combining the needs for the proposed hotel and tourism epicenter which you can see on your right in the rendering. It is on the corner of Lake and Water St. There is an obvious in-fill opportunity of a fragmented downtown strip where two parking lots exist. Each of design solution plays off of each other which is known as the Umbrella Effect (Molnar, 1992). By connecting up that block, there would need to be a parking solution so the vacant lots comes into play. I'm proposing a day-trip more tourism friendly atmosphere, so a terraced hotel looking outward into the bay would not hinder views of the neighboring apartment complex and would support or alleviate parking issues for the downtown and charter hub complex. There is now purpose to this particular area which makes it necessary for a more developed hardscape to allow for mass amounts of people sitting and waiting along the now proposed boardwalk that will connect the two restaurants to the charters and the beach on the north side of the park. The newly implemented medians should slow traffic as well.





## Perspective

This rendering to the right simply shows the in-fill possibility present if the elevated parking structure is built on the vacant lot. The two red buildings are currently parking lots but could eventually close up the fragmented block. Above is the charter node along the boardwalk with the Minnehaha parked in one of the slips to the left. You can also see the awe-inspiring pergola serving as that noise buffer from the traffic while also filtering the hot sun.

Perspective looking south towards the siting plaza along the main charter hub



Downtown Water Street looking NW towards pier



# Design: Market Pavilion



## Market Pavilion



- Entry Pavilion Plaza into the park
- Public art display and Sculpture Park
- Opportunity for monthly or yearly gathering hub for farmers markets and events
- Relaxed earth mounded seating grouped with a knee wall fosters conversation and interaction
- New social epicenter for the public neighborhood
- A reestablished greenspace that was once under utilized







## Design Concept

Perspective just off of Lake Street looking South East

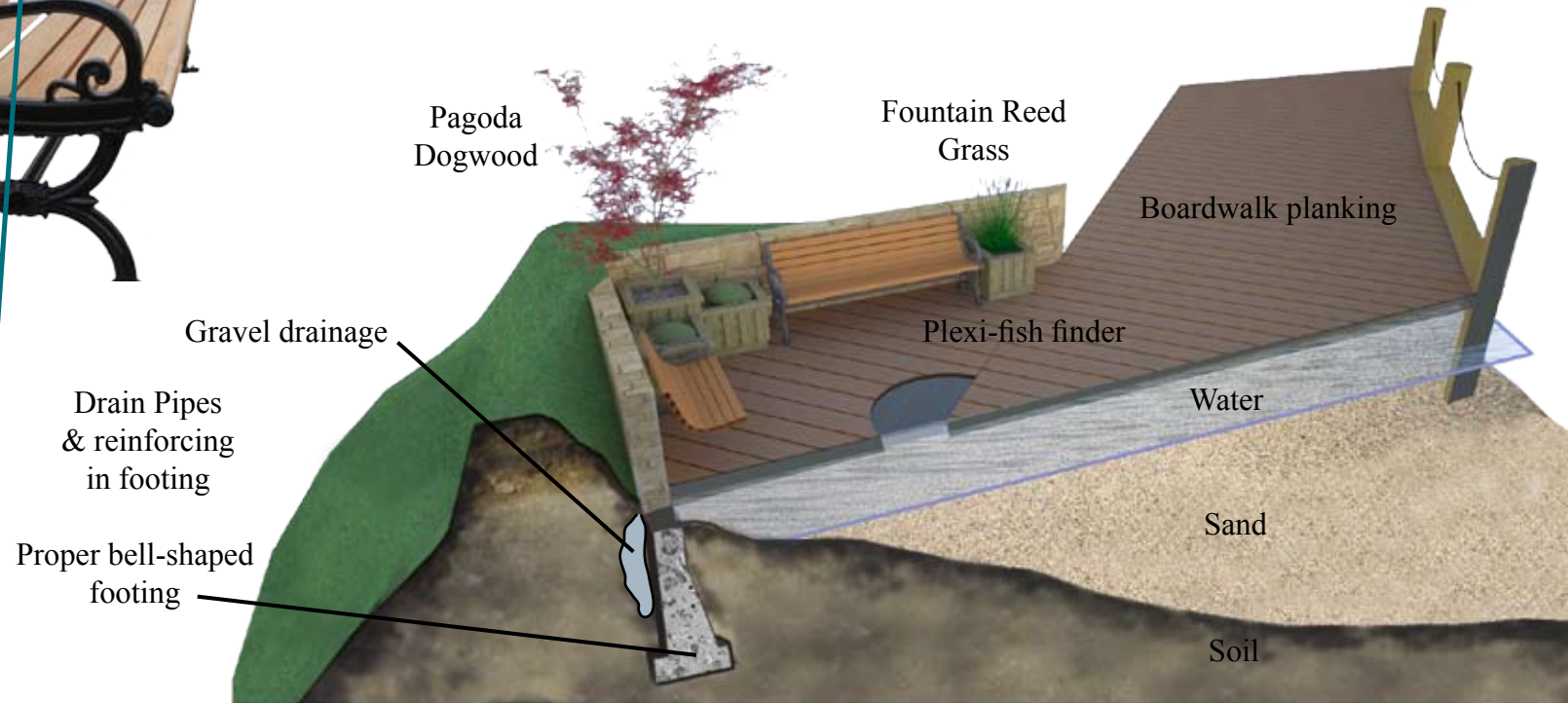
The key word to focus on is the ‘establishment’ of ideal relationships, which essentially is the only purpose of design in order to meet the public’s needs. The rendering to the left simulates an entrance pavilion into the heart of the Park Commons. Not only does it provide an articulately chosen pallet of materials and textures meshed cohesively together, but it is a natural destination point to house smaller day trip visitor events such as Farmer’s Markets or Socials.

People need visual refreshment and mental exercise when biking or driving, and the Park Commons is just that place that would catch anybody’s attention. There are framing trees along the pavilion that create a natural line out towards the lake along with rolling bluffs or mounds that semi-mimic waves. The grassy protrusions provide the ideal place to grab a bite to eat and catch some rays before heading to the beach on the north side (Molnar, 1992).

Existing bench  
from site



# Section Cut Detail



Above is a section cut detail of a sitting or conversational node right as you enter the boardwalk east of the Market Pavilion. There are built into the backside of a small 4 foot berm creating an ideal stable backdrop adding comfort and security. There will be a small pagoda Dogwood to provide some filtered light. An interesting fact is that these small triangular bumpouts along the boardwalk not only are the obvious resting points but also observation perches. People watching becomes the central and critical requirement for any designer to understand ideologies of analysis, but, whats suprising to some designers, it is also the most desirable activity for people. “Seeing and being see. This is a need that includes and transcends all other activities, and encompasses all categories of people regarless of age, sex, and interests (Molnar, 1992).”

Interaction is encouraged by the common ‘L’ shape of the repurposed benches existing on the site. There will also be isolated benches for those who just wish to watch the sunset or enjoy a quiet evening out with their significant other along the boardwalk.



# Design: Catalyst Active Park



Catalyst  
Active Park



- New public dock access
- Integrated bandshell with boardwalk
- Amphitheater and terraced seating for events
- Secluded private lake connection space
- Interaction with water (Swim)
- Increase Habitat Diversity
- Revamp Park Commons community space



# Ampitheater Section Cut



The City of Excelsior 2009: Master Parks, Trails, and Walkways Plan states that there are many surface types available to complete the cross section of your multi-use trail ranging from granular stone, asphalt, concrete, soil cement, wood chips, and natural surface. Surface materials are either soft or hard, defined by the material's ability to absorb or repel moisture. Many single use trails throughout the country, particularly hiking and equestrian trails, have soft surfaces (natural earth/turf, wood chips, etc.). However they often do not hold up well under heavy use or varying weather conditions. Hard surfaced materials (soil cement, asphalt, cement, etc.) are more practical for multi-use trails, especially in urban and suburban areas.

Trail surfacing can be used to encourage or discourage use. If you want to encourage as many users as possible, choose one of the hardest surfaces. If you want to limit the number or speed of users, choose a soft surface.

## Materials Used

# Winter Bandshell



## Design Concept

“People are the benefactors of any park development, however some designs are evaluated by their successfulness in how well they meet the demands of machines and equipment (Molnar, 1992).”

The next two pages reveal renderings showing possible seasonal activity. It is a very engineered amphitheater that would require weekly maintenance due to the shallow holding pond that can be drained and filled depending on the occasion. This inlet cut would potentially serve as that magnetic force driving people up toward the beach and passive bandshell picnic grounds. The terraced seating is wide-enough to double as a relaxing picnic grounds overlooking the beautiful shoregrounds from approximately 50-60 feet up on the bluff. The bandshell would again bring in large crowds during events like the 4th of July. Kids may be drawn to computer screens and video games, but nothing can replace the lake experience. We're wired uniquely as humans to take in sunsets and be near the water.





# Summer Bandshell

## Trees and Shrubs for Native Landscapes

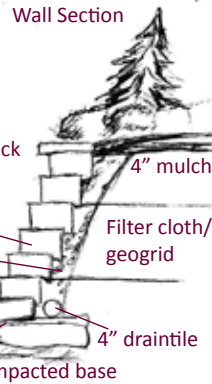
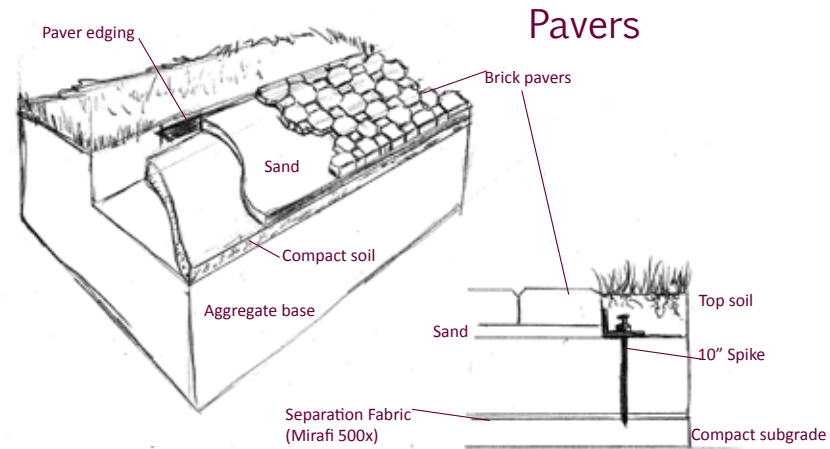
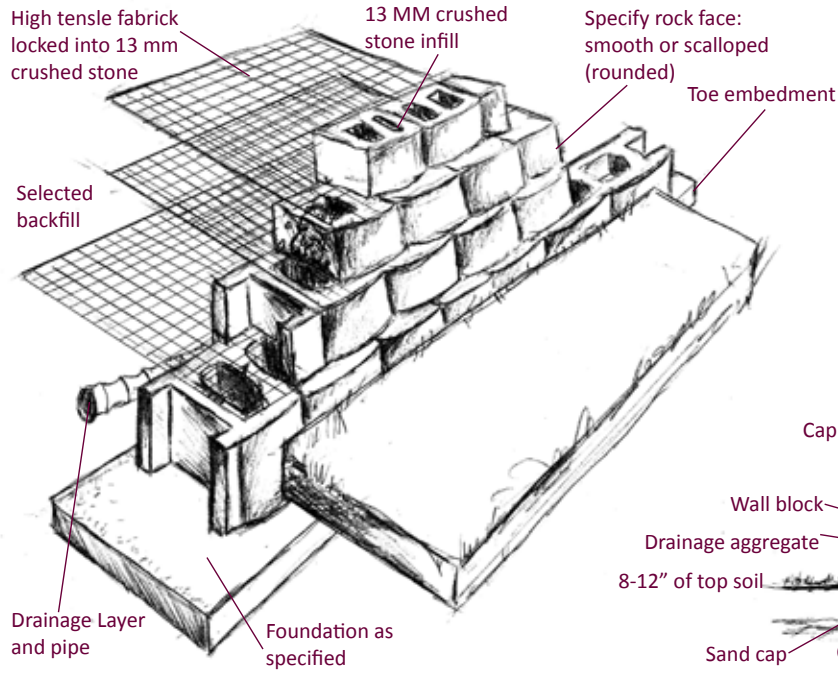
Living Landscapes in North Dakota: A Guide to Native Plantscaping

Common Name	Scientific Name	Mature Height	Mature Crown	Growth Rate	Shade Tolerance	Wildlife Food	Wildlife Cover	Fall Leaf Color	Minimum Precip (in.)	Human Food
<b>Trees</b>										
Ash, Black	<i>Fraxinus nigra</i>	30-50	15-30	Medium	I	S	N, L	Yellow	H	
Ash, Green	<i>Fraxinus pennsylvanica</i>	35-65	30-40	Medium	I	S	N, L	Yellow	10	
Aspen, Quaking	<i>Populus tremuloides</i>	25-60	20-30	Medium	N	W	N, L, E	Yellow	14	
Birch, Paper	<i>Betula papyrifera</i>	8-15	6-12	Medium	N	W	N, L	Yellow	H	
Boxelder	<i>Acer negundo</i>	30-60	30-60	Fast	N	S	N, L, W, B	Yellow/Brown	14	Yes
Cottonwood sp.	<i>Populus sp.</i>	50-99	40-75	Fast	N	W	N, L, W	Yellow	H	
Crabapple*	<i>Malus sp.</i>	10-25	15-25	Medium	N	W	N, L	Brown/Yellow	14	Yes
Hackberry, Common	<i>Celtis occidentalis</i>	40-60	25-45	Medium	I	W	N, L, B	Yellow	18	
Hawthorn, Downy	<i>Crataegus mollis</i>	15-20	15-20	Slow	N	S	N, L, E, W, B	Yellow/Brown	14	
Juniper, Rocky Mountain	<i>Juniperus scopulorum</i>	12-30	12-20	Slow	I	W	N, L, E, W	None	10	
Linden, American	<i>Tilia americana</i>	50-70	30-50	Medium	T	S	N, L	Brown/Yellow	H	
Oak, Bur	<i>Quercus macrocarpa</i>	40-70	35-60	Slow	N	W	N, L, B	Yellow/Brown	14	
Pine, Limber	<i>Pinus flexilis</i>	20-50	15-25	Slow	N	W	N, L, E, W	Green	10	
Pine, Ponderosa	<i>Pinus ponderosa</i>	50-70	15-30	Medium	N	W	N, L, E, W	None	10	
Spruce, Colorado Blue*	<i>Picea glauca var. pungens</i>	30-65	15-25	Medium	N	W	N, L, E, W	Green	14	

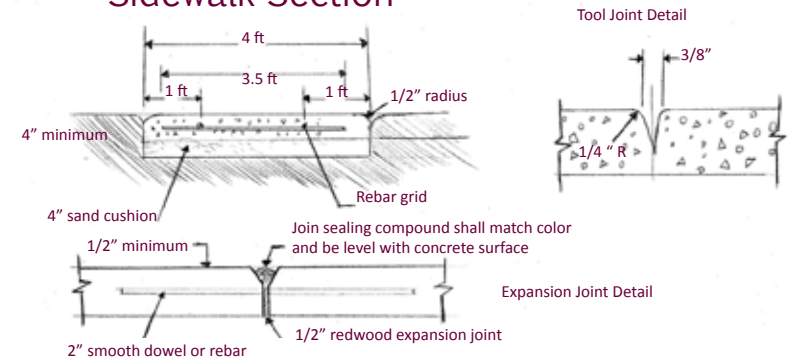


# Construction: Detailing Documents

## Composite Retaining Wall



## Sidewalk Section



## Trees and Shrubs for Native Landscapes

Living Landscapes in North Dakota: A Guide to Native Plantscaping

Common Name	Scientific Name	Mature Height	Mature Crown	Growth Rate	Shade Tolerance	Wildlife Food	Wildlife Cover	Fall Leaf Color	Minimum Precip. (in.)	Human Food
<b>Shrubs</b>										
Buffaloberry, Silver	<i>Shepherdia argentea</i>	6-14	8-14	Medium	N	W	N, L, E, W	None	10	Yes
Chokeberry	<i>Aronia melanocarpa</i>	5-6	5-6	Medium	I	S	N, L, E, W, B	Yellow/Red	18	Yes
Chokecherry, Common	<i>Prunus virginiana</i>	12-25	10-20	Medium	I	S	N, L, E, W	Yellow	14	
Cranberry, Highbush	<i>Viburnum trilobum</i>	8-12	8-12	Medium	T	W	N, L, W	Purple/Red	18	Yes
Currant, Golden	<i>Ribes aureum</i>	3-6	3-6	Medium	I	S	N, L	Yellow	14	Yes
Dogwood, Redosier	<i>Cornus sericea</i>	7-10	10-15	Fast	T	S	N, L, E, W, B	Purple	H	
Hazel, American	<i>Corylus americana</i>	6-8	6-8	Medium	T	S	N, L, E	Yellow	18	Yes
Indigo, False	<i>Amorpha fruticosa</i>	8-12	6-10	Medium	N	W	L, B	Yellow	18	
Ironwood	<i>Ostrya virginiana</i>	15-30	10-20	Slow	T	N	N, L	Yellow	18	
Juneberry	<i>Amelanchier alnifolia</i>	6-15	5-12	Slow	I	S	N, L, E, W	Yellow	14	Yes
Juniper, Common	<i>Juniperus communis</i>	3-6	3-8	Slow	I	S	N, L, E, W	Blue/Green	10	
Plum, American	<i>Prunus americana</i>	8-10	8-10	Medium	I	W	N, L, E, W, B	Yellow/Orange	14	Yes
Raspberry	<i>Rubus idaeus</i>	3-6	3-6	Fast	I	S	L, B	Yellow	18	Yes
Rose, Prairie	<i>Rosa arkansana</i>	1-2	1-3	Slow	N	W	L, B	Yellow	10	

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Success is the progressive realization  
of a worthy goal or ideal.  
~Earl Nightingale

The purpose of life is a life of purpose.  
~Robert Byrne

