



Tale of the Mouse

a plan for downtown Minot's riverfront

a design thesis submittal by: Ethan Philip Gefroh

Tale of the Mouse: a plan for downtown Minot's Riverfront

A Design Thesis Submitted to the Department
of Architecture and Landscape Architecture
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BY

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Degree of Bachelor of Landscape Architecture

**Tale of the Mouse: a plan for
downtown Minot's Riverfront**

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abstract.

This thesis explores the potential benefits a community can gain from a waterfront park as a downtown amenity. Currently, the city of Minot, ND is experiencing a growth in population due to the recent oilfield activity in Western North Dakota. Along with growth comes a demand for public spaces. This thesis proposal redevelops a derelict industrial waterfront within close proximity of Minot's downtown, assisting in the revitalization efforts that are currently taking place within the area. The park serves as a cultural gathering space, offering year round activities to the residents of Minot. In addition, the park will address the issue of seasonal flooding by providing flood protection for the area. The design of the park will be inspired by the local history, helping to create a unique sense of place within the downtown. The ultimate goals of the project include; increase surrounding economic activity, provide flood protection, create an identity for the downtown area, and provide a cultural gathering space for the community.

Key Words: *Waterfront, Post-Industrial, Flood Control, Revitalization*

chapter one.

introduction | site criteria | research questions | case studies | literature review

typology.

- Public Park.
- Waterfront Park.
- Post-Industrial.
- Flood Mitigation.

Waterfront parks are often public parks located adjacent to a body of water. The added element of water integrated with public parks increase their overall attractiveness. (Shaftoe, 2008). This project will transform a heavily used industrial site into a public waterfront, which will reconnect the community of Minot, ND to the riverfront, and serve as a downtown amenity. The study site is also subject to inundation from seasonal flooding; this post-industrial public waterfront park will also provide flood mitigation that will allow the opportunity for year round programmed activities.

introduction.

The city of Minot, North Dakota is a growing community with a thriving economy as a result of the oil field activity in the Bakken Oil Formation in Western North Dakota. Minot's economy and surplus of jobs attracts more and more residents to the community each year. According to a recent study, Minot's population is

expected to increase from the current population of approximately 49,000 to 60,000 by the year 2017. (Schram, 2013). In order to sustain the local economy, the City of Minot needs to retain its current residents, attract new residents to the area, and improve their public infrastructure to meet the needs of a growing population.

Currently, a downtown revitalization effort is taking place in the city of Minot known as "The Renaissance Zone Project." This project gives business and homeowners tax incentives if a certain percentage of a building or property is renovated. In addition to the Renaissance Zone Project, the City of Minot is currently working on a streetscape project, which will revitalize 34 blocks of the downtown area. The project is scheduled to begin construction in 2014. The city of Minot adopted the renaissance program, along with the streetscape project with the hopes of attracting new business and developments to the area. (Gefroh, 2013).

This thesis will explore how a waterfront park can benefit Minot's downtown community. In recent years, more and more people are beginning to realize that their local waterfronts are a catalyst to bring new life and energy to their

community. (Making the most, 2009). Since the rise of industrialization, accessibility to riverfront has diminished; harbor installations, railroad tracks, highways and other industrial developments create a physical boundary between urban environment and riverfront. As a result, communities have been experiencing a growing disconnection between riverfronts and the social consciousness, despite their economic relevance. (Holzer, Hund, Luke, Hamm. 2010).

John Simmons states that, in planning the use of land areas in relation to waterways and water bodies, a reasonable goal would be to take full advantage of the benefits of proximity. (Simonds, 1998). Developing a riverfront park connected to Minot's downtown would provide the area with a unique sense of place and potentially attract business, residents, consumers, and tourists, resulting in a lively and culturally diverse place.

Regionally, in the past two decades, North Dakota cities such as Minot, Grand Forks and Fargo have experienced major flood events causing millions of dollars of damage to private and public property. Subsequent to flooding, flood protection plans began to develop to prevent similar events in

the future. These plans utilize miles of engineered levees and floodwalls to mitigate floodwaters and protect urban areas from seasonal flooding. (Mouse river enhanced, 2012)

As humans we are drawn to water (Simonds, 1998) but regional flood protection plans seen in: Grand Forks and Fargo create a visual and physical barrier in urban areas. This approach to flood protection creates a major disconnect between people and our most precious resource. Waterfronts in urban areas can be planned carefully to maximize usage along the river and allow for year round access. (Hargreaves & Campbell, 2007). However, by placing floodwalls and levees between urban environment and rivers prohibits the usage of a riverfront during seasonal flooding. By implementing landscape design methods, flood control systems can be improved in both form and function to promote pedestrian usage along a riverfront year round.

An alternative design solution to levees and floodwalls could be a waterfront park that doubles as a flood control system, similar to Guadalupe River Park in San Jose, California. (Waterfront parks, 2007). This park is an example of a modern flood control project that

integrates flood protection, public access and environmental restoration along the Guadalupe River.

Guadalupe River Park is significant because it plays two major roles in regards to landscape architecture. First, it acts as flood protection and secondly, it serves as an open space to the public. By creating a transition between inner city and water, this park encourages pedestrians to interact with the waterfront year round, despite water levels. (Hargreaves & Campbell, 2007).

This study will examine case studies of waterfront parks that have proved to be successful in creating a unique sense of place, increasing surrounding economic activity, and providing flood control. To gain better understanding of what strategies have worked and have not worked. My design methods will be derived from these case studies and implemented into the final design of a waterfront park.

When exploring alternative design solutions to flood control it is important to first understand the broader subject of flooding. I will begin studying the bigger picture of floods such as – the causes, types, and effects. After I gain an overall understanding of



This image depicts a floodwall in Grand Forks North Dakota, illustrating the physical disconnect between urban environment and the river.



This image shows the riverbanks along the Guadalupe River, demonstrating an alternative flood control measure.

urban flooding, I will then explore the social, economical, environmental consequences, both positive & negative, of urban flooding. (Garette, 2011).

Vegetation is an important element within parks, and it is especially important within a riverfront park. Because seasonal flooding will be a major issue, the appropriate vegetation will need to be utilized for reasons including: erosion control, aesthetics, natural and wildlife habitat, and site remediation. In order to implement the appropriate vegetation within my design, this research will explore vegetation able to withstand flooding.

The research in this study, adds to the field of landscape architecture because flooding is the most common type of natural disaster (Tarbuck, Lutgens & Tasa, 2004) and by exploring multi-functional flood control structures would benefit the general public. A multi-purpose waterfront would provide a public park that doubles as flood protection as opposed to using a levee system that only serves the purpose of controlling floodwater. Using waterfront parks to control floodwater is emerging as new concept, and this study will pull research from regions around the world in hopes of providing new research by

examining case studies related to the topic.

Finally, this study will explore how a waterfront park can benefit a downtown community. My research questions that I intend to answer include: Can a waterfront park provide a unique sense of place? What affects do seasons have on waterfronts? And is a

nearby industrial waterfront prohibiting downtown growth?



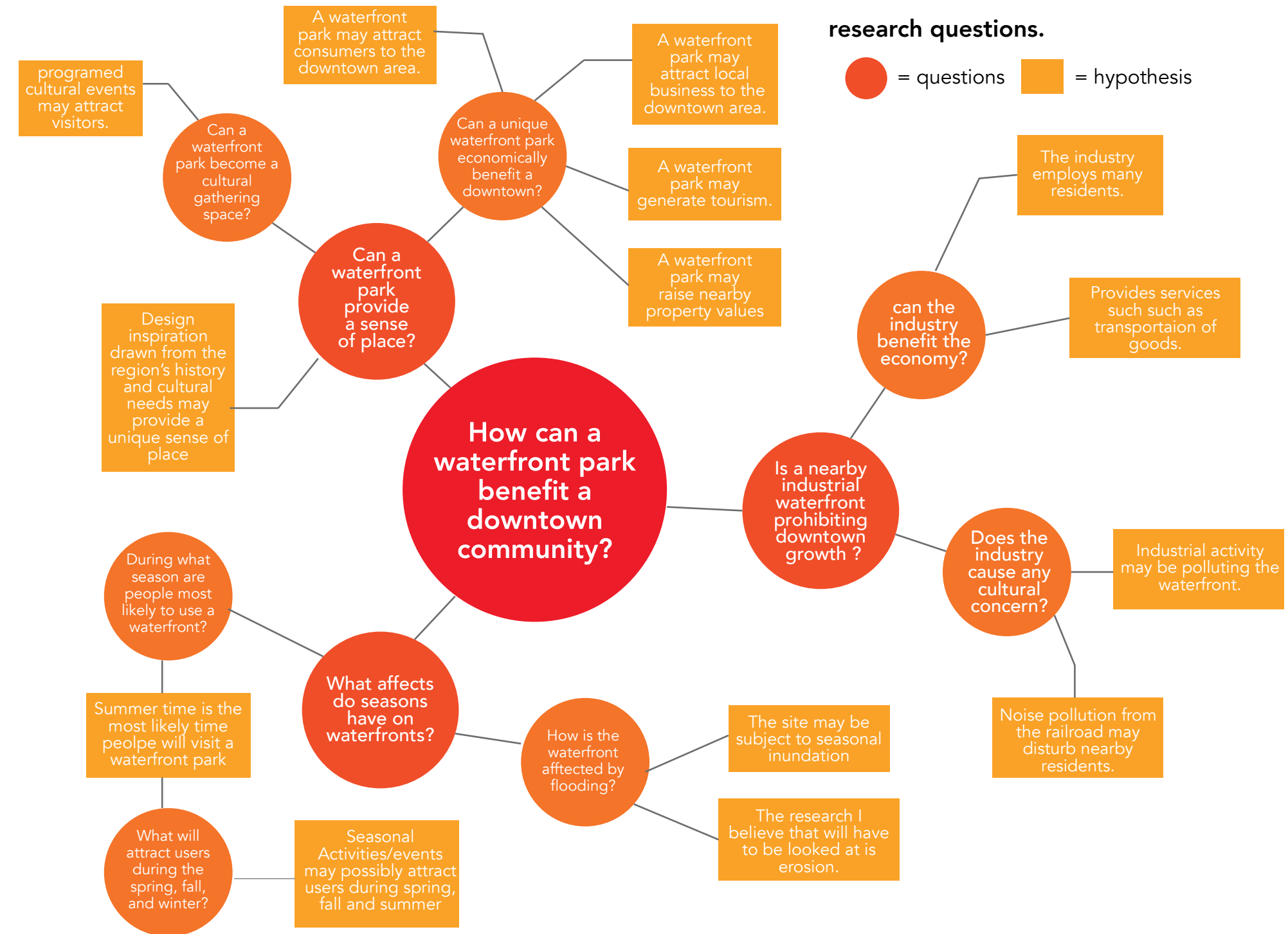
Looking North on 3rd Street East, Minot, ND

Site Criteria

When designing a riverfront park as an amenity, the chosen site should contain specific criteria in order to achieve a desirable outcome. The set criteria ultimately determines the site as well as the project goals. The following list of criteria will be used to determine an appropriate site for the development of a post industrial waterfront park.

- **The site can be zoned industrial.**
- **The site can have industrial facilities.**
- **The site can be affected by environmental consequences** such as flooding, erosion, pollution, environmental degradation. Addressing environmental issues will provide further support for developing a post-industrial riverfront park.
- **The site should be located in an urban environment** in order for the park to be easily accessible by various modes of transportation.
- **The site should be easily accessible** so connections to walking/bike trails, sidewalks, and streets are important.

- **The site should be located adjacent to a river** since the ultimate goal of the project is to redevelop an industrial riverfront.
- **The site should allow for vegetation** to establish because vegetation stabilizes river banks and is an important element within a park.
- **The site should be 20+ acres** to allow for various recreational activities.
- **The site can contain wildlife** to increase biodiversity.
- **The sites region can have multiple seasons** such as; winter, spring, summer, and fall, to allow for seasonal activities.
- **The site can present safety issues.**
- **The site should be within walking distance of a mixed-use district** so that economic activity can benefit from the park.
- **The site has the ability to improve negative impacts** such as: visual pollution, noise pollution, light pollution, safety concerns, environmental and, economics.
- **The site can face contamination issues.**



Louisville Waterfront Park - Louisville Kentucky

Designed by Hargreaves Associates, the 120-acre, Louisville Waterfront Park was constructed to transform derelict industrial waterfront into a large-scale public park. "Converting these postindustrial sites in parks results in outstanding improvements in the health of cities by returning these vital locations to the public domain." (Hargreaves & Campbell, 2007). This project transforms a riverfront that was once blighted with industry into a large scale open space that offers the public a range of recreational opportunities. The park is able to host crowds ranging from 25 people for small family gatherings and up to 350,000 people for a music event known as Thunder Over Louisville.

Stated by 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 be come 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." (Louisville waterfront park, n.d.)

This project successfully addresses key criteria for determining a site to develop an urban waterfront park on. The project is located in an urban area adjacent to a river, faces seasonal flooding issues, and was once used for industrial purposes. As a response to these flooding issues, Hargreaves Associates designed the park to withstand temporary flooding. "This was achieved by slope stabilization through construction methods and native plantings, fast draining soils, and durable bolted furnishings. The lower banks are stabilized with geo-textiles and gabions planted with riparian species, and the landforms are sited in tandem with river flows, minimizing damage as the water levels rise and fall. The lawns consist of a shredded material mixed in with the topsoil layer, which binds with the grass roots to create a tougher lawn. Program is placed according to elevation of what can be temporarily flooded and what cannot." (Hargreaves & Campbell, 2007). These design methods can be directly applied to the final design of

this thesis, by doing so, erosion will be better controlled and site furnishings will not be carried away during seasonal flooding.

Another major issue noted on the site was a psychological barrier between the waterfront and downtown due to an elevated freeway that encroaches the site adjacent to the waterfront. This issue was addressed by sloping the top elevation of the park from the 100-year flood line, under the elevated freeway and down to the river. This design method allows for a continual view shed from the downtown to the river, thus drawing pedestrians to the river. (Hargreaves & Campbell, 2007). Having a continual view shed between the downtown and river is important for attracting people to the waterfront park, this idea will be implemented into the final design.

Historical elements were also integrated into the final design by implementing a Lincoln memorial. This commemorates Abraham Lincoln's lifelong connection to Kentucky. (Louisville waterfront park.) "This memorial tells the story of how, as a young man, Lincoln began developing his abhorrence of slavery while watching slaves being loaded onto riverboats on the Ohio River in Louisville. The memorial features a 12

foot statue of Lincoln seated on a rock and looking out over the river. Behind the Lincoln sculpture is a tree-canopied landscape with an amphitheater that faces the river and provides a frame for the sculptural pieces. The face of the granite amphitheater seating is engraved with four famous Lincoln quotes, and the site is planted with a variety of trees, including several that were Lincoln favorites." (Louisville waterfront park, n.d.)

By incorporating local history, Hargreaves was able to create a unique sense of space specific to the area. The final design for Minot's waterfront park will be largely inspired by the town's rich local history. Drawing inspiration from past events is a great way to engage the community, preserve history, and create identity.



http://www.hargreaves.com/projects/Waterfronts/LWDOverall/LWD_12.jpg

Louisville Waterfront



http://farm4.staticflickr.com/3197/3039802552_174fb8db84_z.jpg

Water Feature



http://farm4.staticflickr.com/3619/3687593817_823d15742c_z.jpg

Lincoln Memorial

Guadalupe River Park - San Jose, CA

The city of San Jose, California, is situated along the banks of the Guadalupe River. The Guadalupe River is fed by a 170 square mile watershed, and travels 80 miles from its mountainous headwaters draining into the San Francisco Bay. (Guadalupe river flood, n.d.).

Historically, the City of San Jose was established along the Guadalupe River, which was important for irrigating fruit crops and transportation. As time went on, the farm fields diminished and San Jose was transformed into an urban center. As Silicon Valley gained popularity, San Jose saw rapid growth and development. The increase in human development along the river increased, and floods went from bad to worse with severe flooding causing millions of dollars in damage. (Guadalupe river flood). This case study examines a flood control method that provides open space and year round recreation and activities despite flood levels.

In the 1960's two separate planning strategies along the river were presented, one suggesting a linear central city park to provide open space near the river, and the other proposed constructing flood control structures to mitigate floodwater. Nearly 30

years later, construction on the project began in 1992. Despite the public's desire for an open space along the river, the United States Army Corps of Engineers implemented deep channelized river sections guarded by chain link fences. (Guadalupe river flood, n.d.).

By 1996, the U.S. Fish and Wildlife Service conducted a wildlife impact study and concluded that implementing the flood control project would cause adverse habitat impacts that would threaten the steelhead trout and Chinook salmon. The constructed river sections affected both species as they migrated through the Guadalupe River to reach their breeding grounds. Once these conclusions were drawn, construction the river channels halted and alternative design solutions were explored. (Guadalupe river flood).

Hargreaves Associates was then consulted to develop plans for an open space that would also provide urban flood protection. Since the project affected the steelhead trout and Chinook salmon this case study also addresses the needs of wildlife as well as the urban population. The creation of a wild life habitat was achieved by utilizing an underground bypass culvert that would provide substantial shaded riverine aquatic

cover, avoid impacts on the riparian environment, and retain cooler water temperatures, which is important to a viable fish hatchery. (Hargreaves & Campbell, 2007).

To manage water flow, Hargreaves associates designed a combination of smooth impermeable areas around the city bridges to allow for the water to pass through more quickly. They also developed rougher planted areas in order to hold floodwater for longer periods. The circulation system creates a coherent spatial experience in the park, running parallel with the riverbanks that rise from 0.2 meters to 5.4 meters, allowing for continual use when the water is high or low. (Hargreaves & Campbell, 2007). This technique can be applied to the final design of this study in order to design the park to be accessible during flood season.

The banks were stabilized by gabions planted with native riverine species that are able to withstand periodic flooding and reduce erosion. (Hargreaves & Campbell, 2007). This technique to reduce erosion has been used in both case studies and proves to be an effective way to handle erosion; this method will be directly applied to my final design.



Guadalupe River Park (Not Flooded)



Guadalupe River Park (Flooded)



Guadalupe River Park's Trail System

Removal of Contaminants

Because rivers carry many unknown contaminants, due to storm water run off, and herbicides and pesticides that drain from farm fields. It is important to understand how phytoremediation can play a role in a waterfront park. (BP, n.d).

Recently, British Petroleum (BP) launched its largest phytoremediation project, located in Woodriver, Illinois. Phytoremediation refers to the removal of toxins and contaminants through the use of strategic planting. The site previously consisted of an oil refinery, as a result, chemical compounds and petroleum impacted the soils and ground water. (BP, n.d).

Groundwater was removed from the 24-acre site by planting 3,500 trees in five separate groves scattered amongst the site. The groves consisted of specially selected species such as; river birches, swamp oaks, bald cypresses, willows and poplars. The willows and poplars were selected because they can draw more water through their roots, which helps to bring down water levels to minimize the risk of and impacted water escaping. Additionally, the trees will help to break down residual petroleum and other chemical compounds

on site. Overtime the mini-forest is expected to not only seek positive results in removing contaminants but to also serve as a wild life habitat for birds. (BP, n.d.).

This literature review is directly connected to the following set of criteria: the site may face contamination issues, the site can provide wildlife habitat, and the site may face environmental issues such as erosion. By including trees such as river birches, swamp oaks, bald cypresses, willows and poplar trees in the final design, contaminants on site will become stabilized and eventually break down over time. In addition to stabilizing and breaking down contaminants, the selected trees will provide wild life habitat to birds and control erosion during flooding events.

This example of phytoremediation can be directly applied to the final design if it is determined that such toxins are located on site.

Connectivity to Urban Surroundings

Commons Park, located in Denver Colorado, serves as a model for successfully connecting a riverfront park with its urban context through multiple means of accessibility. The park is approximately 21 acres and is

a component within the South Platte Riverfront. The South Platte Riverfront is a 10.5-mile greenway that runs parallel to the Platte River. Linking the waterfront park to a larger trail system is beneficial because it increases the pedestrian activity on the site. In the book, "Social Life of Small Urban Spaces," William Whyte states that the people attract people, so by directing runners, bikers, joggers etc, through the site, these individuals may attract more users to the site.

The park can be accessed by multiple ways such as;foot, bicycle, bus, or car. The surrounding neighborhoods are linked to Commons through various bridges, tunnels, and paths. (Baker, n.d.). Pedestrian bridges allow users to safely cross the water without having to walk to the nearest vehicular bridge. Providing multiple means of access to a waterfront is important because users of the site wont have to go out of their way to access the site.

What can be learned from Commons Park is, that by providing multiple means of accessibility, a waterfront park can seamlessly fit within its urban context. Providing multiple means of accessibility will likely increase the usage of the site creating a lively atmosphere. Choosing a waterfront

site that connects to a larger trail system, and allows for multiple means of accessibility will be advantageous for drawing people to the site.

Economic Benefits

"Extensive economic research in Portland and across the nation has illustrated that open spaces such as parks and trails can have positive effects on adjacent property values and can lead to proportionately higher property tax revenues for local governments." (A synthesis between, 2012). Many waterfront parks have been proven to benefit the surrounding community, one particular example can be found in Seattle, Washington.

For many years, the original site of Olympic Sculpture Park, sat as a blighted piece of industrial property at the heart of Seattle's waterfront. The 8.5-acre property was once a contaminated fuel storage and transfer site for Unocal Oil. "The site was also bisected by a four-lane road and active Burlington Northern Santa Fe Rail Line." (A synthesis between, 2012).

The Seattle Art Museum purchased the site with intentions of restoring the waterfront as an important habitat for salmon and also to reconnect the city

to its waterfront heritage.

Since the completion of the park, it has become an economic catalyst for the surrounding Belltown neighborhood, spurring construction of dense residential complexes, with new stores and restaurants replacing parking lots and vacant land. In addition, the park increased nearby property values and encouraged a building spree in adjacent neighborhoods. (A synthesis between, 2012).

By developing a waterfront park in a blighted area near downtown, this literature review proves that a waterfront park has the ability to improve the quality of life, increase economic development, and increase nearby property value.

Located between downtown Minneapolis and the Mississippi River, the historic Mill District has been proven to have a significant economic impact on its surrounding community. The Mill District waterfront include numerous historically significant structures and sites that attract visitors year round. (A synthesis between, 2012).

"As part of the Historic Mills District Master Plan, there were four guiding

goals or principles for the Minneapolis Riverfront District redevelopment. A fundamental goal of the project was to "Open public access to the riverfront as a social and environmental asset and amenity"and to "Create a vibrant new mixed-use community with enough housing to be a true neighborhood." (A synthesis between, 2012).

By 2010 the Mill District has developed the Mississippi Riverfront as a publicly owned open space which links to the 52-mile Minneapolis Ground Round park system. (A synthesis between, 2012).

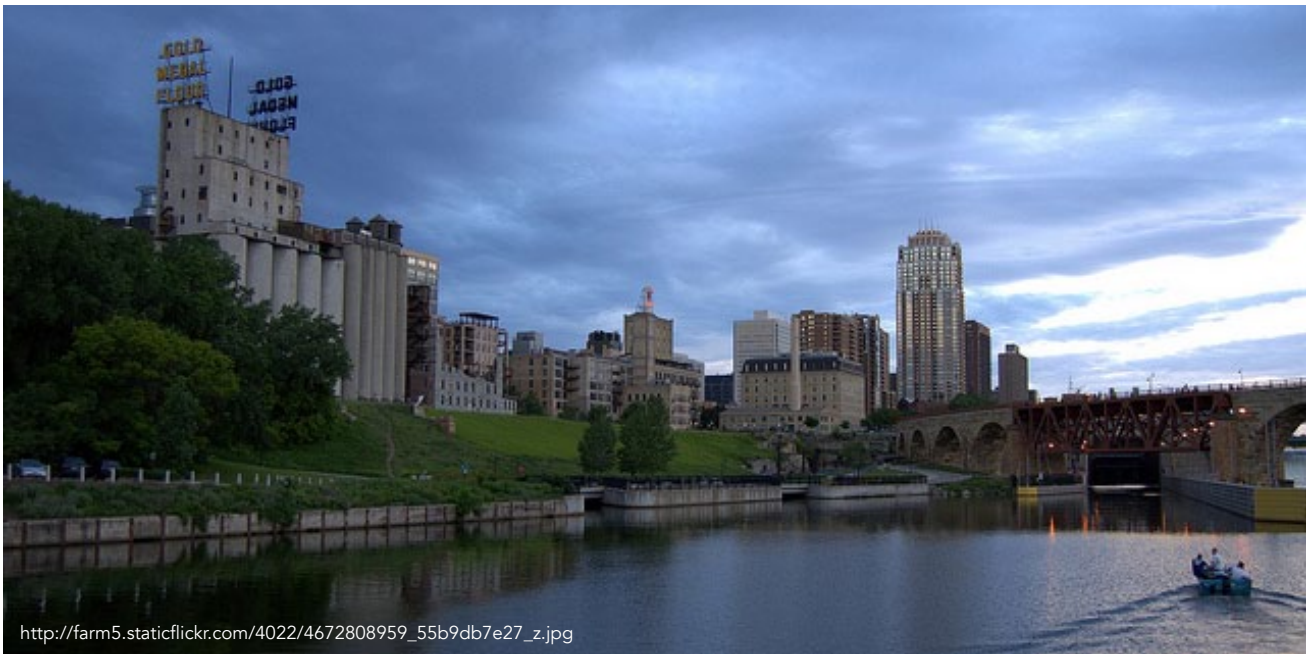
The 140 acres of new river front park land proves to be an economic catalyst for the surrounding area by generating jobs, taxes and economic activity. In total, 8,300 jobs were preserved and 1,400 new jobs have been created with 4.2 million square feet of new office, commercial, and industrial space. The desirability of living in the are has increased real estate taxes, based on estimated market value from \$25 million in 1994 to \$232 million in 2005. (A synthesis between, 2012).



Olympic Sculpture Park Aerial



Olympic Sculpture Park



Mill District, Downtown Minneapolis



Mill Ruin Park

chapter two.

methodologies | measures | site introduction | user/client description

Methadologies

The integrated design of a public riverfront will influence the success rate of the proposed downtown park. There is much information to gather regarding the subjects of public parks, riverfront parks, flooding, and local history. This research utilizes a mixed method approach to gather data, which will then be analyzed to determine an appropriate solution to the question, can a waterfront park benefit a community?

Geographic Information System (GIS) will be used to locate informational mapping layers and digital elevation models for inventory and analysis purposes. Minot's GIS maps will provide various layers of information such as, parcel data, hydrology, public infrastructure, utilities, flood control, and land use. Google Earth will be utilized for gathering information including context and measurements. GIS and Google Earth will help me to understand the site and its surrounding context, which will help to determine an appropriate design for the site.

The area demographics will be gathered from city-data.com. This information will be used to determine the appropriate programmatic elements based on the communities,

population, culture, and age. Local history will be gathered from a book written by, Minot State University Professor, Mark Timbrook. The book is titled "The Last Hurrah: An Account of Life in the Mouse River Valley, Bone Town, Little Chicago, and the Magic City." This book will help to better my understanding of Minot's history. Learning about the local history is important because history can be used as a source of inspiration for the final design in a way that can create a unique sense of place.

The City of Minot Public Works office will be consulted throughout the process for information on what is happening on and around the site. Also, I will attempt to acquire any necessary documents, base maps, AutoCAD files, etc. Government websites and reports will also be referenced through the process. These sources will provide me with data and statistics specific to the Souris River Basin. This information will provide potitical input for the final design.

NDSU's data base and Klai Library will be utilized to gather relevant research in textbooks, articles and journals. Specifically, I will be locating research that relates to flooding, waterfronts, and public parks. The information gathered from textbooks, articles, and

journals will benefit my understanding of the research topic to determine a solution for the final design.

Information on BNSF will be needed in order to determine how much train traffic goes through the site per day, if they have any intentions of moving locations, and also about their general history. Contacting BNSF and researching their site www.bnsf.com will be used to gather information on the company.

Reviewing exactly how the 2011 flood event in Minot unfolded will be important from a social, economic, and political standpoint. By watching news clips from the time of flood, I will gather information including how residents and officials responded to the flood. Throughout the duration of the flood, a local news station covered the story 24/7. They have uploaded dozens of hours of their live news coverage to YouTube.

Local engineering firms such as Barr Engineering and Ackerman Estvold Engineering are currently working on construction documents for the adopted flood protection plan. I will be consulting them for any relevant AutoCAD files, base maps, photos, and general information. By discussing with a local engineer, information

Measures

When looking at designing a riverfront park as an amenity, qualitative and quantitative data is needed in order to achieve the desired outcome of developing a unique sense of place. A clear understanding of the region's culture, environment, and political system is very important when designing a cultural amenity.

Information about the surrounding environment and the local politics will be gathered from a series of government produced documents, the local news paper (Minot Daily News), and the local news station (KX News). This information will be utilized to determine what environmental issues may needed to be addressed in the final design. Information on local politics will be needed to gather information on public projects that are happening in the region. By understating what is happening politically, social needs and issues can be addressed through the final design.

Local history will be gathered from a book titled, "The Last Hurrah: An Account of Life in the Mouse River Valley, Bone Town, Little Chicago, and the Magic City." written by Minot State University professor, Mark Timbrook. The book provides historical information relating to the railroad's

history in Minot, community stories, major natural disasters, major social movements, and historical structures. Since the overall goal is to create a unique sense of place in Minot, the local history is were much of the design inspiration will come from.

Site Introduction

Based on the set criteria, the site that is best suited for the development of a waterfront park as a downtown amenity is located in Minot, North Dakota. Minot is currently in the process of revitalizing their downtown in an effort to attract local business and people to the area. With the economical benefits that waterfront parks have to offer, a park in this location would only help the city in their downtown revitalization efforts.

Minot is situated in the midwestern region of the United States with an estimated population of 46,000-47,000, (Schram, 2013) this town is an appropriate size to sustain such a large-scale park with a wide range of recreational opportunities. Minot is located in the Souris River Basin and experiences seasonal flooding.

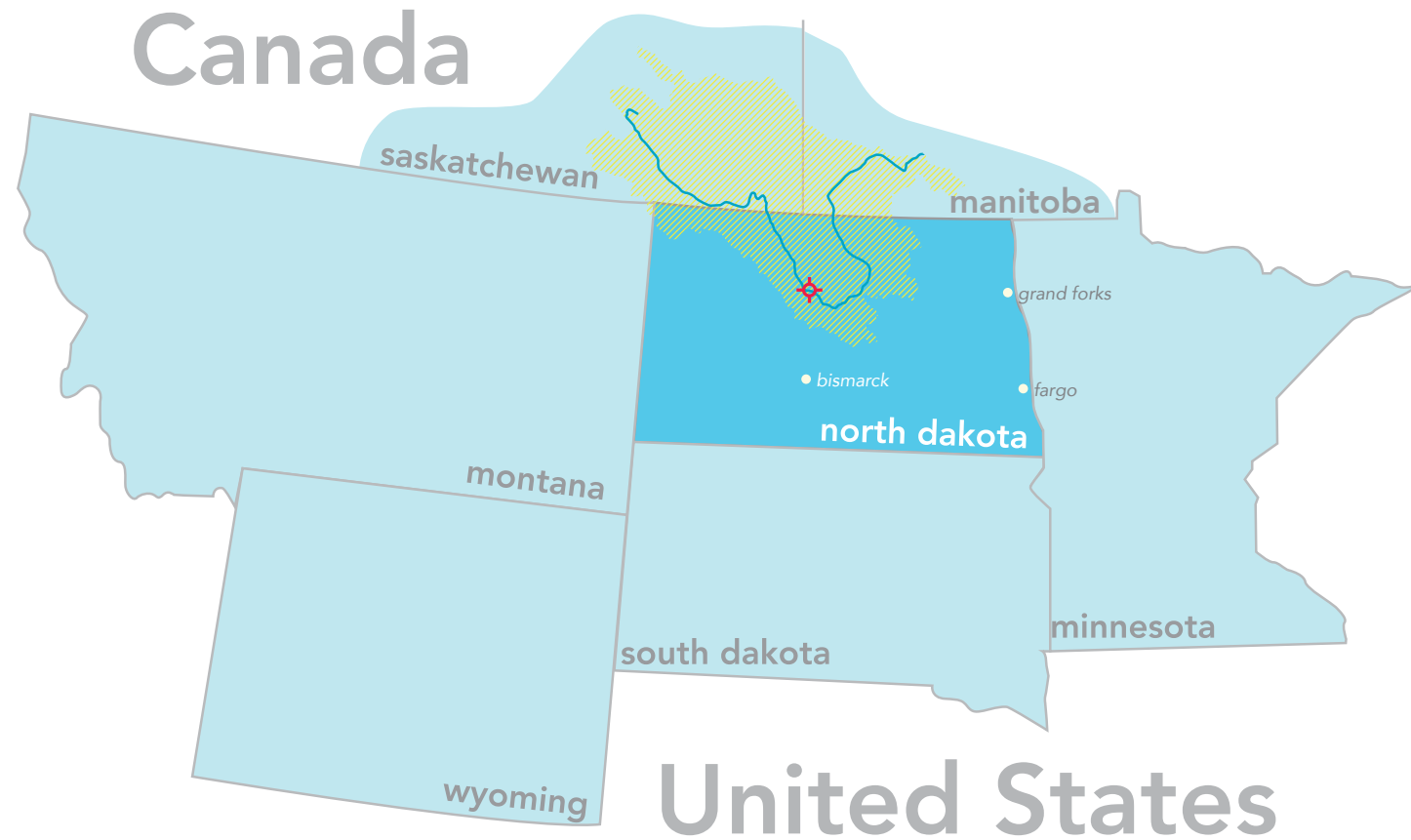
The site is composed of 41-acres and is centrally located along the south banks of the Souris River, north of

Minot's downtown.

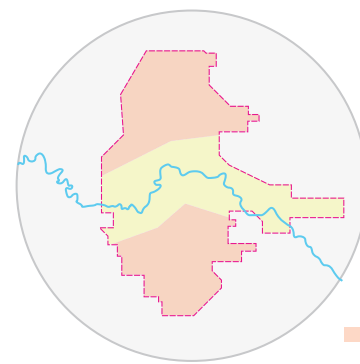
The land is largely owned by the city, however a railroad company, Burlington Northern & Santa Fe (BNSF), occupies 4.8 acres within the site. (Facilities map, n.d.) Because BSNF is located within the flood plain, the company is open to relocating their facilities on site, however no location has been determined. (Schram, 2013). Due to the presence of BSNF on site, a railroad runs diagonally from east to west through the site presenting another major issue, which will be discussed later.

This is an ideal site to convert into a waterfront park, primarily because it offers many challenges and even more opportunities. The site is centrally located just north of downtown, and provides various means of accessibility. The site is rich in history, and also the site of Eric Ramstad's farmstead, which would eventually become an expanding point in Minot.

According to Minot's 2012 comprehensive plan and Stantec's conceptual plans for Minot's Downtown, the 40 acre site has pottential to be developed into a park, however no details have been worked out to this date.

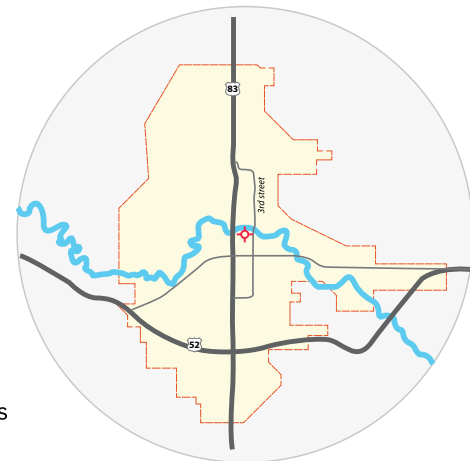


- Minot, ND
- Souris River Basin
- North Dakota
- Surrounding State/Province
- Souris River



The Souris River flows east to west, and meanders through the center of Minot. The river flows through a valley that is situated between two hills locally known as North and South Hill.

- North/South Hill
- Valley
- Souris River
- Minot City Limits



- Site Location
- Minot, ND
- Highway
- Street
- Mouse River



User/Client Description

It is important that this study addresses the needs and concerns of the various users of this proposed project. Since this project is intended to develop a public waterfront park with various programmatic elements, this park will attract a wide range of users ranging from tourists, to children, to potential concert goers.

It will be important to address the needs of the people living within the downtown community, because they may be frequent users. In 2011, approximately 789 people with an average age of 43 lived in the downtown area. In total there were 552 households with an average of 1.33 people per household. (Minot, ND, n.d) With an average of 1.33 people per household, individual activities will be valued when developing a program.

College students from Minot State University are potential users of the site. Minot State University is located about 1/2 mile from the site, the close proximity may encourage students to visit the site. In the spring of 2011 Minot State University had an enrollment of 3,636 students. (Minot state spring, 2011) Potential program elements in the final design that could

encourage college students to use the park may include, recreational activities, spaces for entertainment, an/or secluded study spaces.

The Amtrak Train Depot is located approximately 700 feet to the west of the site. The train depot sees two passenger trains per day, one around 9:00 a.m. and the other around 9:45 p.m. Since Minot's depot is a service stop for the train, there is a 30-45 minute scheduled stop and passengers are encouraged to get off the train and get some fresh air. (amtrak.com) Because the train depot is so close to the study site, Amtrak passengers may wander through the park to pass by time. Implementing local history into the final design in an effort to educate the passengers about Minot' history is a potential programmatic element.

In the summer of 2013, a newly constructed "Art Space" building was opened. Art Space is a mixed-use building geared towards artists. The main level consists of an art gallery, an educational space, and an art store while the upper levels consist of modern apartments for artists to reside in. The apartments are considered low-income housing and in order to live in the Art Space building, one would have to go through an

application process to prove that he/she is an artist or in a creative profession. The Art Space building is located one block south of the study site. Spaces that provide space to display public art may need to be programmed for the artists living in Art Space and also for local/regional artists.

chapter three.

site inventory | findings from research | applicable values | a plan for proceeding

Site History

The site's history begins with a Norwegian settler named Eric Ramstad. Ramstad immigrated to the United States in 1880 in search of farming land. Prior to his arrival to Minot, Ramstad traveled to a Norwegian community in Albert Lea, Minnesota only to find out that all the prime land had been settled. Ramstad then proceeded west to the town of Grafton, ND. However, after arriving in Grafton, Ramstad again found out that the valuable land along the river had been settled.

In the spring of 1883 Ramstad heard rumors about rich farmland in the Souris River Valley, so immediately he and his family along with two other families - The Gasmann's and the Sundre's - prepared for the three-week journey westward to the Souris River Valley. After traveling 180 miles across vast plains and unmarked trails, the three families arrived at the Souris River valley to find the Souris River flowing through vast woodlands consisting mostly of Cottonwoods. Ramstad found this land suitable for farming and settled

on the south side of the Souris River.

After farming the land for 4 years, Ramstad was approached by James Jerome Hill, owner of the St. Paul, Minneapolis & Manitoba Railroad. James Hill was in the process of pushing a railroad track westward from Devils Lake, ND and saw opportunity for a major hub to be developed in Minot. In the year 1886, James Hill purchased 40 acres of land located south of the Souris River for \$1,000 dollars. (Timbrooke, 2008)

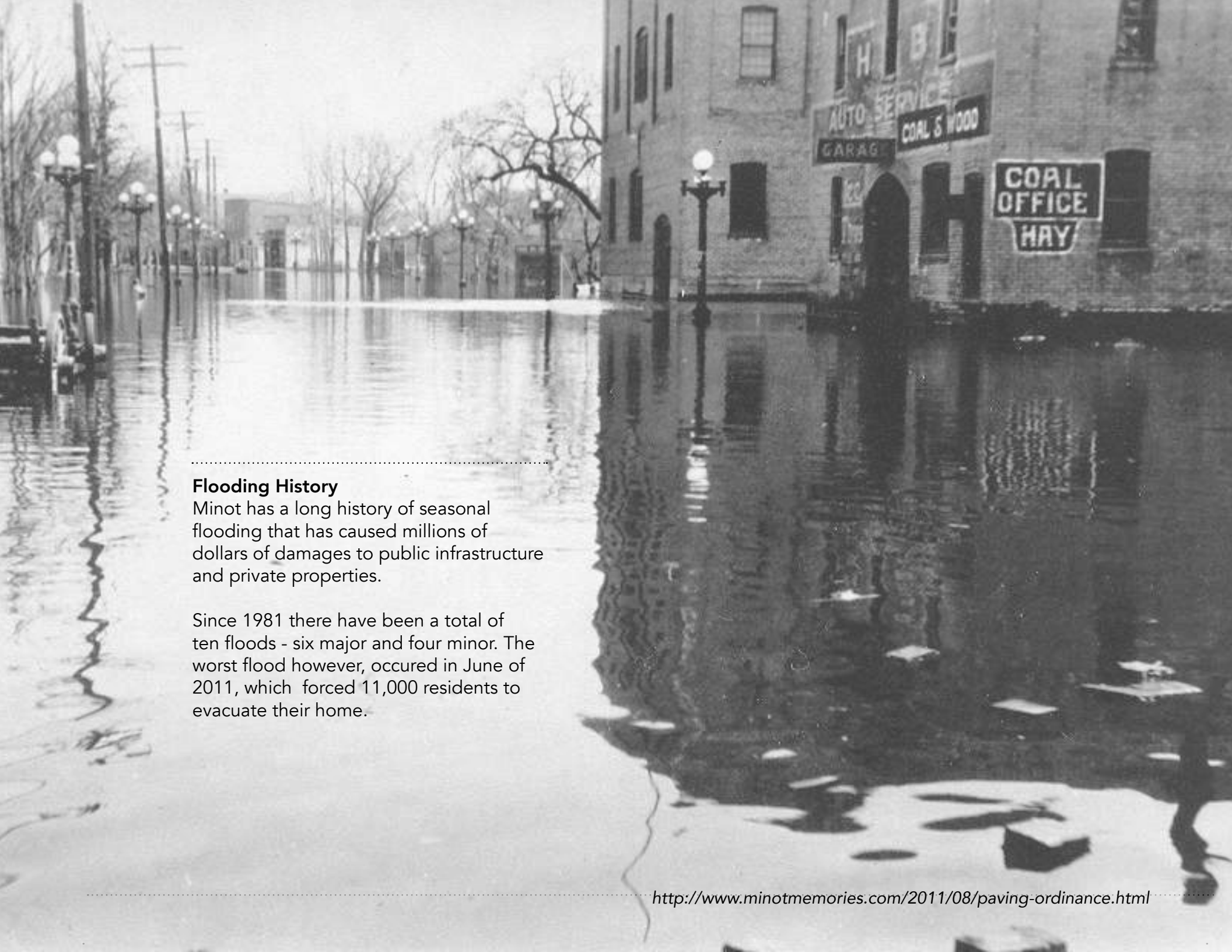
Over a course of the past 100 years the 40-acre site has been subject to various uses such as farming, heavy industrial use, train yard, material stockpiling, and vehicular transportation. In the late 1890's Large amounts of various materials were stockpiled on site including railroad materials such as ties, rails, spikes, timber and pilings, and fuel. It was also not uncommon to see large piles of buffalo bone along the river in the 1890's. During hardships, residents would collect buffalo bones, grind them into a powder and sell the powder as fertilizer to the farmers. At times, buffalo bone piles (left) could be 100 feet wide and as "high as the bones could be thrown" (Timbrooke, 2008).



Both Photos taken from: <http://www.minotmemories.com/2011/08/buffalo-bones.html>



Site (Pre 1986)



Flooding History

Minot has a long history of seasonal flooding that has caused millions of dollars of damages to public infrastructure and private properties.

Since 1981 there have been a total of ten floods - six major and four minor. The worst flood however, occurred in June of 2011, which forced 11,000 residents to evacuate their home.

<http://www.minotmemories.com/2011/08/paving-ordinance.html>

Natural Processes

Flooding in General

Flooding occurs when the discharge of a stream becomes so great that it exceeds the capacity of its channel, causing waters to overflow its banks. Floods are considered to be the most common and most destructive forms of natural disasters. (Tarbuck, Lutgens, Tasa, 2004). Flooding in large river valleys is often a result of an abundant amount of precipitation over a broad region for an extended time span.

Land use planning in river basins requires an understanding of the frequency and magnitude of flooding events, data can be collected at stream gauging stations to estimate the probability of various flood magnitudes.

Floods are often described in terms of recurrence interval or return period. For example, a 500-year flood event means that the flood discharge has a 0.2% probability of being exceeded in any one year. However, it does not mean that such a flooding event will only occur once every five hundred years, although unlikely, it is possible for a 500-year flood event to occur two years in a row.

Human influences such as dams and urban development can affect recurrence intervals.

Floods can result from several natural occurring and human induced factors. The most common types of floods are regional floods, flash floods, ice-jam floods, and dam failure floods.

Regional flooding occurs when a river is overwhelmed by rapidly melting snow in the springtime and/or heavy spring rain. From personal observation, the 2011 flood along the Souris River is a notable example of an event caused by rapid snowmelt and heavy spring snowfall/rain.

Souris River Name

The Souris River, also known as the Mouse River, flows west to east along the northern edge of the study area. The river is located within the Souris River basin and flows through Saskatchewan (Canada), North Dakota, and Manitoba (Canada). Locally, the river is known as the 'Mouse' River, the word 'mouse' is a direct translation from the French word Souris. United States federal agencies such as the U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Federal Emergency Management Agency

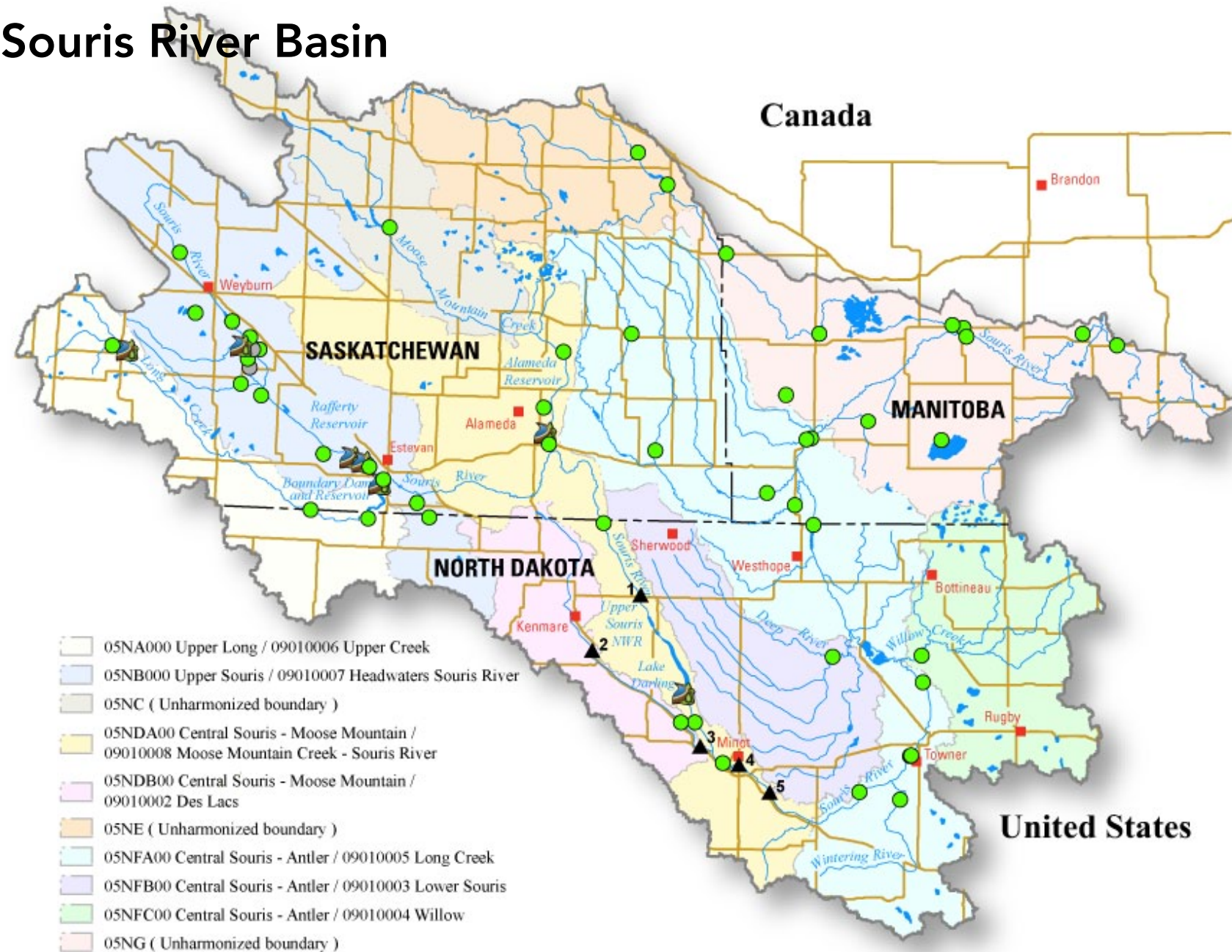
refer to the river as Souris River, so for the sake of consistency the river will be referenced as the Souris River throughout the study.

Souris River Watershed

The Souris River watershed is an area of about 26,600 square miles that includes portions of Canadian Provinces of Saskatchewan and Manitoba, and the state of North Dakota. The drainage area to the Mouse River upstream from Minot is roughly 10,600 Square Miles. (Mouse river Enhancement, 2012).

There are four major reservoirs upstream of Minot that control the flow rates of the Mouse River. Three of the four reservoirs are located in Saskatchewan including: The boundary Reservoir on Long Creek and the Rafferty Reservoir on the Mouse River, both near Estevan, and the Alameda Reservoir on Moose Mountain Creek near Alameda. The fourth reservoir, Lake Darling, is located about 15 miles northwest of Minot.

Souris River Basin



Graphic retrieved: http://nd.water.usgs.gov/floodinfo/images/souris_basin.png

1881 - "According to historians, only a few settlers lived in Minot at the time of this flood. Since this was prior to official records being kept for flood levels, early pioneers say this flood was three feet higher than the flood of 1904. This makes it nearly 25 feet above flood stage, or approximately 1,558 feet about sea level. To date, the 1881 flood is the second highest in recorded history." (Mouse river facts, 2011).

1904 - "The high water mark for the flood was 21.9 feet above flood stage or 1,555.15 feet above sea level. Peak flow was estimated at 12,000 cubic feet per second. According to the Minot Daily Optic, "several hundred" of the 1,200 residents of Minot had to leave their home as a result of the flooding in 1904." (Mouse river facts, 2011).

1927 - "This flood comes in just outside of the top five highest for the Mouse River, at 20.17 feet above flood stage, or 1,553.45 feet above sea level. History books state that "more than a thousand men worked around the clock building levees, and filling sandbags" to help protect the city." (Mouse river facts, 2011).

1935 - "Lake Darling Dam constructed in order to provide water in times of extreme drought. The U.S. Fish and Wildlife Service owns and operates the dam, but the U.S. Army Corps of Engineers takes over the dam's management during periods of flood risk." (Mouse river facts, 2011).

1948, 1949, 1951, 1955 - "A series of relatively minor floods impacted the Magic City as well as surrounding communities." (Mouse river facts, 2011).

1969 - "12,000 residents were forced to leave their homes for up to six weeks as the Mouse River reached a crest of 1,555.4 feet above sea level. While not the highest flood of record, this was one of the more damaging floods in Minot's history with estimated damages between \$15 and \$20 million. The Flood of 1969 occurred in April of that year, after a cold, wet winter was followed by continuous, early, warm temperatures in the spring." (Mouse river facts, 2011).

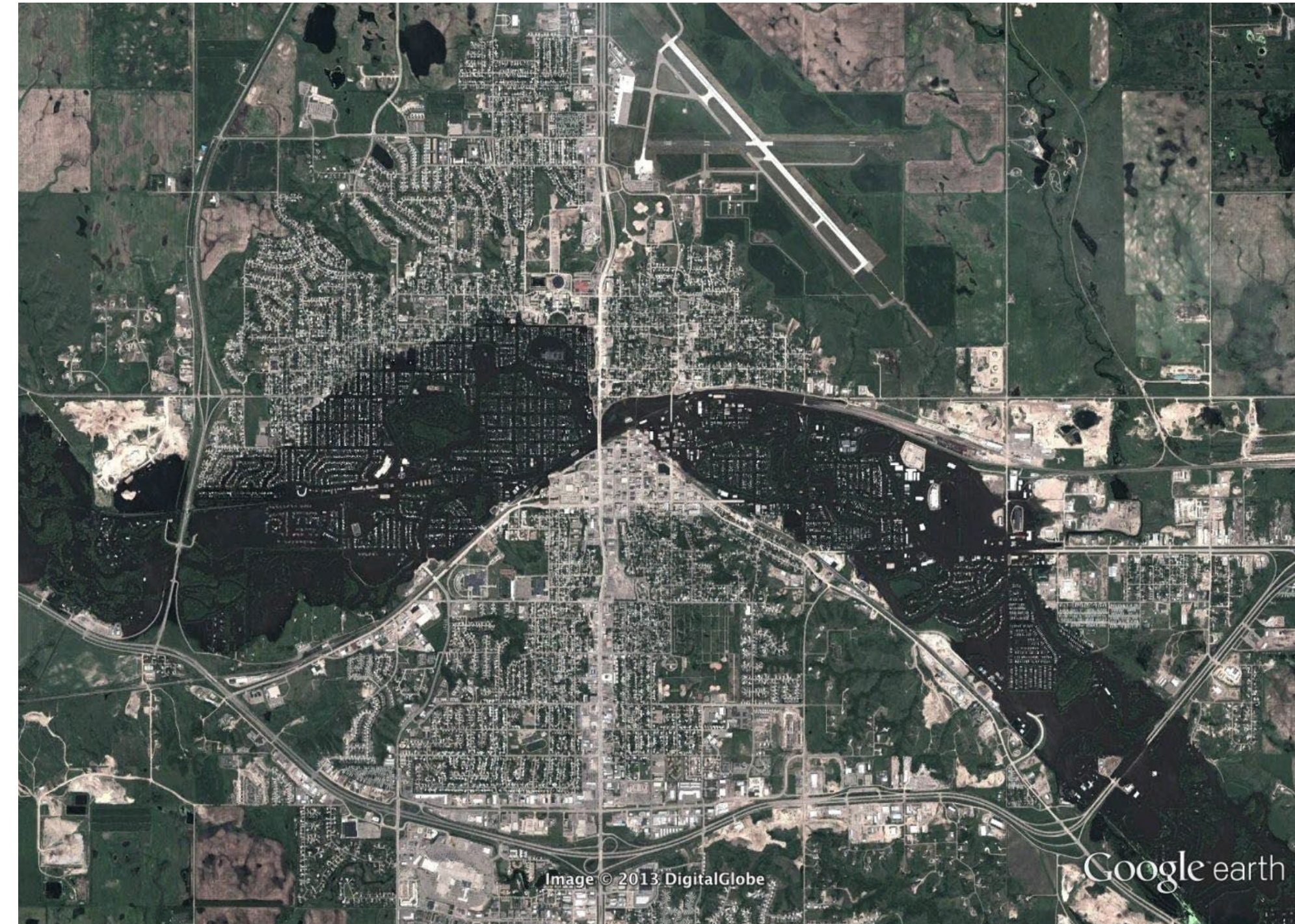
1971-1978 - "The U.S. Army Corps of Engineers completed a eight-year project that required nearly 16 miles of clearing and snag removal, as well as 11 miles of improvements to the river's channel and 15 channel cutouts (according to "Minot - The Magic City: Latitude 48 - Longitude 101" book written by Minot native Joseph Gavett). The project also included 12 new channel structures and six pumping stations." (Mouse river facts, 2011).

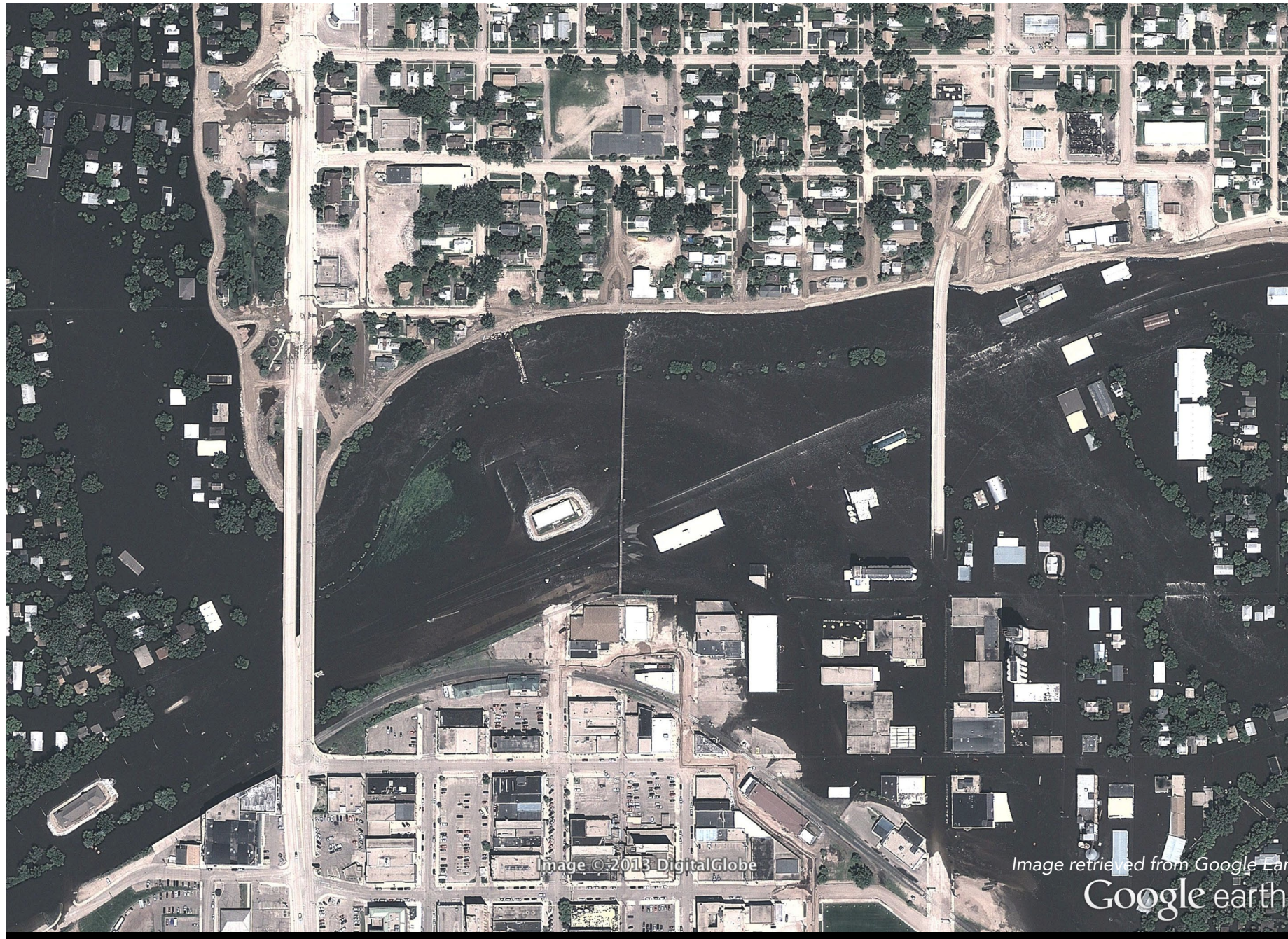
1976 - "The Mouse River crested in Minot at 1,556.08 on April 18 of 1976. The river was recorded to hit a flow of 14,800 cfs (cubic feet per second) at the peak of the flood in 1976." (Mouse river facts, 2011).

2011 - "With a crest of 1,561.72 on June 26, the flood of 2011 is the highest recorded in Minot's history. According to the ND State Water Commission, the river flooded 4,115 homes in Ward County, causing more than 11,000 people to evacuate. The flow of water, through gauges set near Minot, was more than 26,000 cfs (cubic feet per second)." (Mouse river facts, 2011).

“The battle to keep flood waters within the banks of the
Souris River bed will fail. Water will spill over the dikes and
flood Minot in a way never before seen by anyone alive
today. This flood will last for at least two weeks before the
water may start to go down at all. This will be long, it will
be devastating, it will change thousands of lives.”

- Perry Olson, KX News

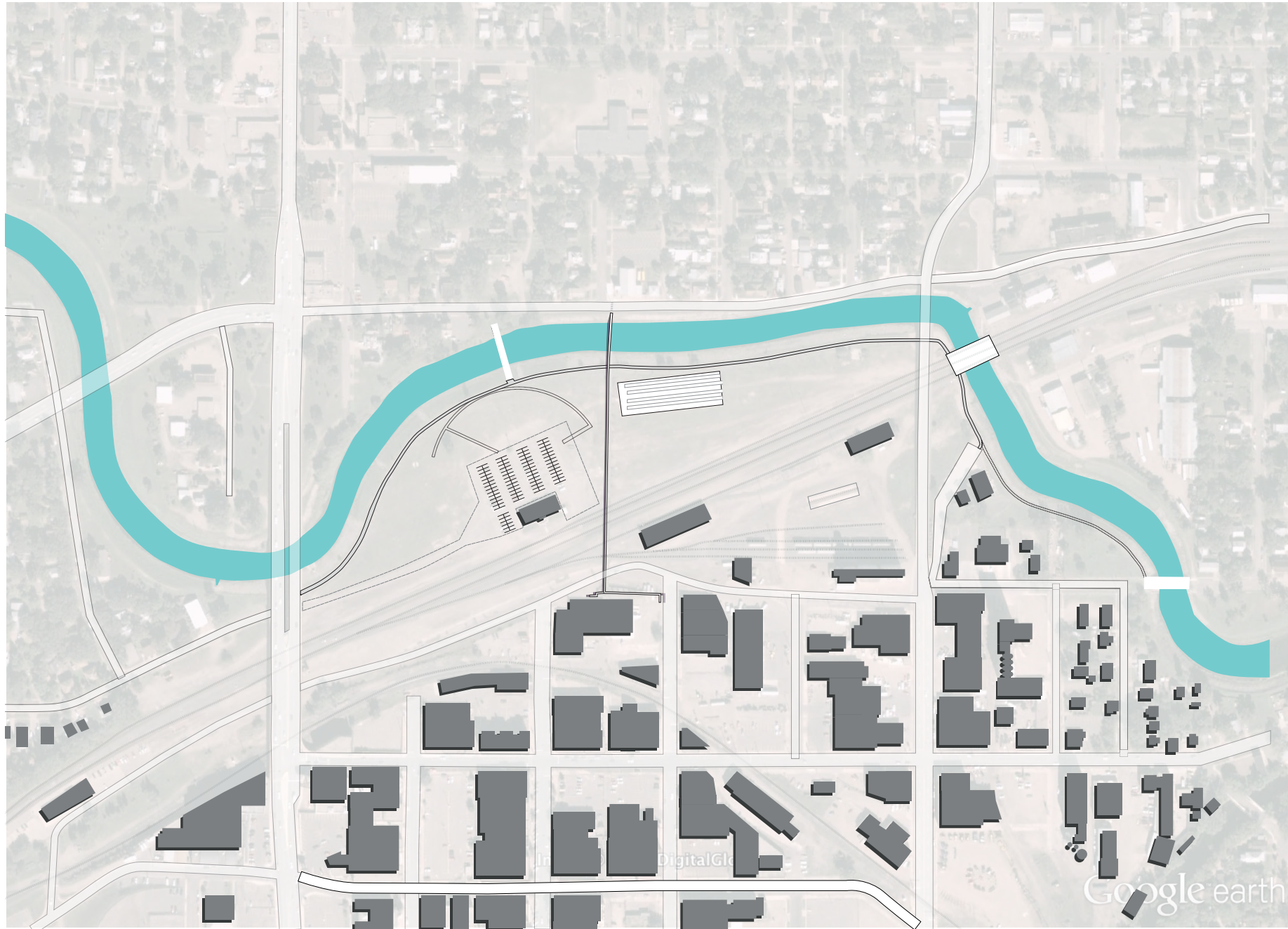




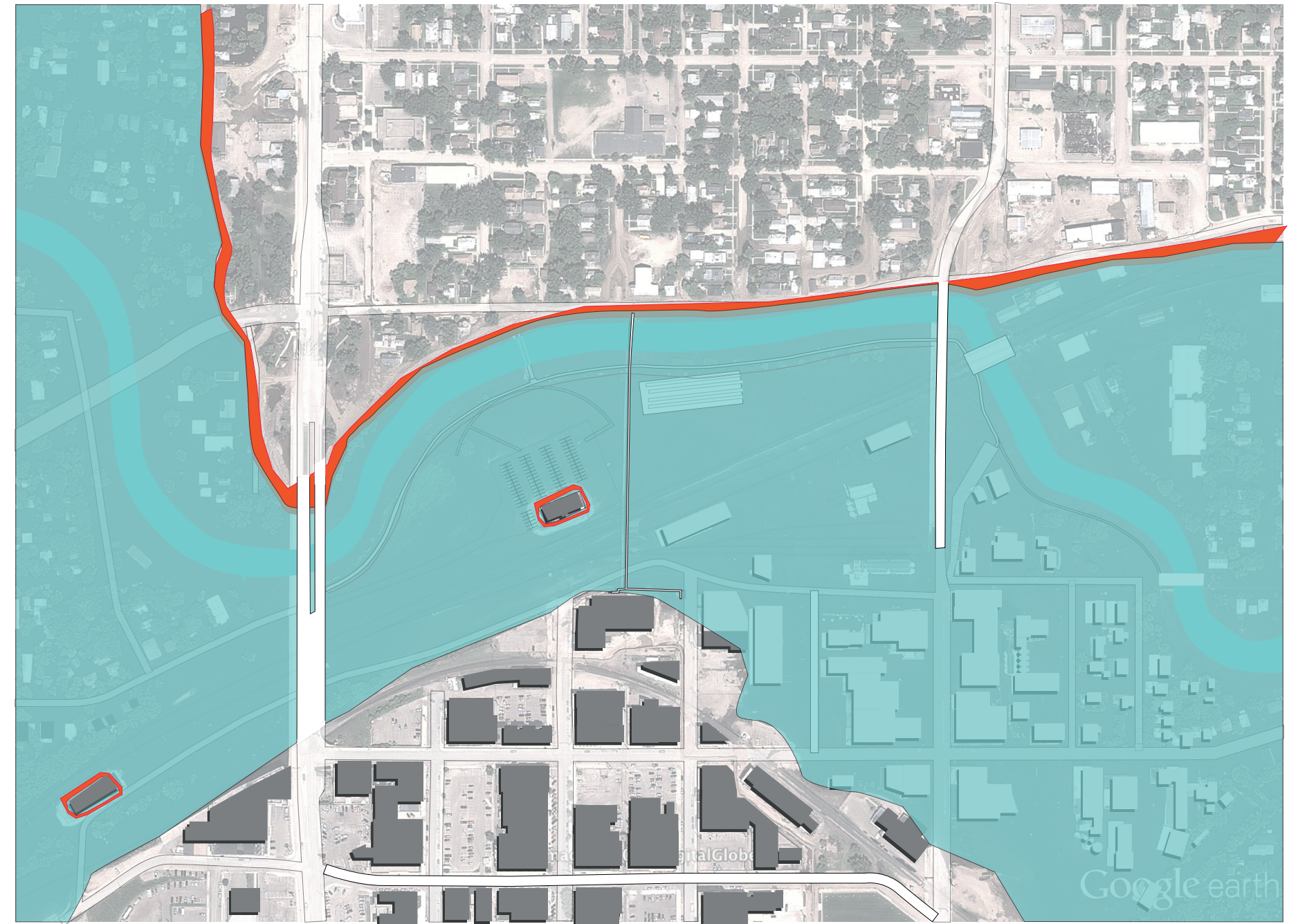
Site During 2011 Flood - **June 27th, 2011**



Site After Flood - **July 26th, 2011**

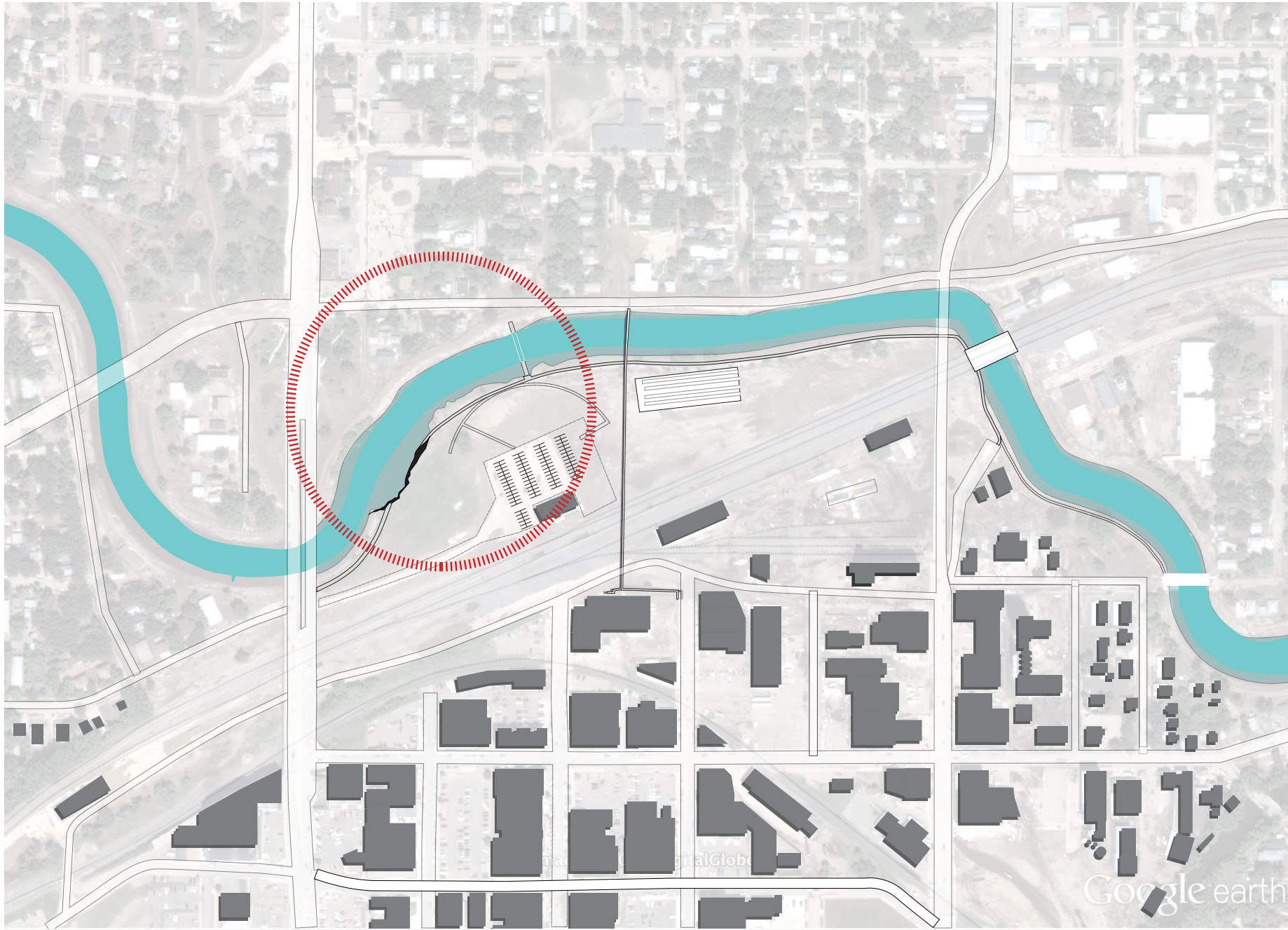


Site Before Flood



Site During Flood

The city of Minot battled the flood by building emergency dikes (represented in red). Without the man made dike, the neighborhood to the north of the site would have been flooded



The 2011 flood eroded away sections of the river not protected by rip rap. The most extensive damage occurred to the BNSF Pedestrian Bridge, the Anne Street Bridge, and the walking path.

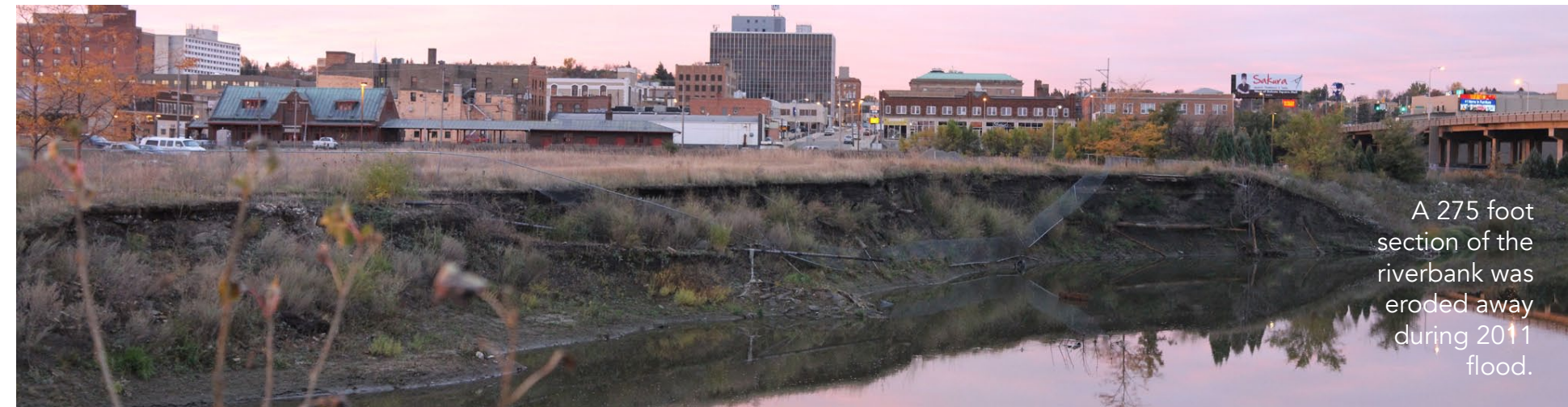
Site After Flood



BNSF
Pedestrian
bridge



BNSF
Pedestrian
bridge
Foundation.
Bridge was
removed due
to erosion.



A 275 foot
section of the
riverbank was
eroded away
during 2011
flood.



Eroded river bank viewed from the Broadway Bridge

Erosion / Erosion Control

The banks on the north side of the site are subject to erosion caused by debris and sediments carried in the Souris River.

After measuring from Google earth, it is determined that approximately 60,000 SF of twelve inch rip-rap is placed along the Southern riverbank of the Souris River. Rip-rap is a permanent cover of rock used to stabilize riverbanks, provide instream channel stability, and provide a stabilized outlet below concentrated flows.

The rip-rap is primarily placed where erosion is likely to occur and also below storm water outlet channels. Two areas along the inside curves of the river-banks are not protected by rip-rap.

Approximately 40,000 SF along the inside curve on the southern bank of the Souris River was not protected by rip-rap. During the 2011 flood, the unprotected riverbank was completely eroded away.



View of the eroded river bank from the walking trail looking east.



View of the eroded river bank from water level looking west.



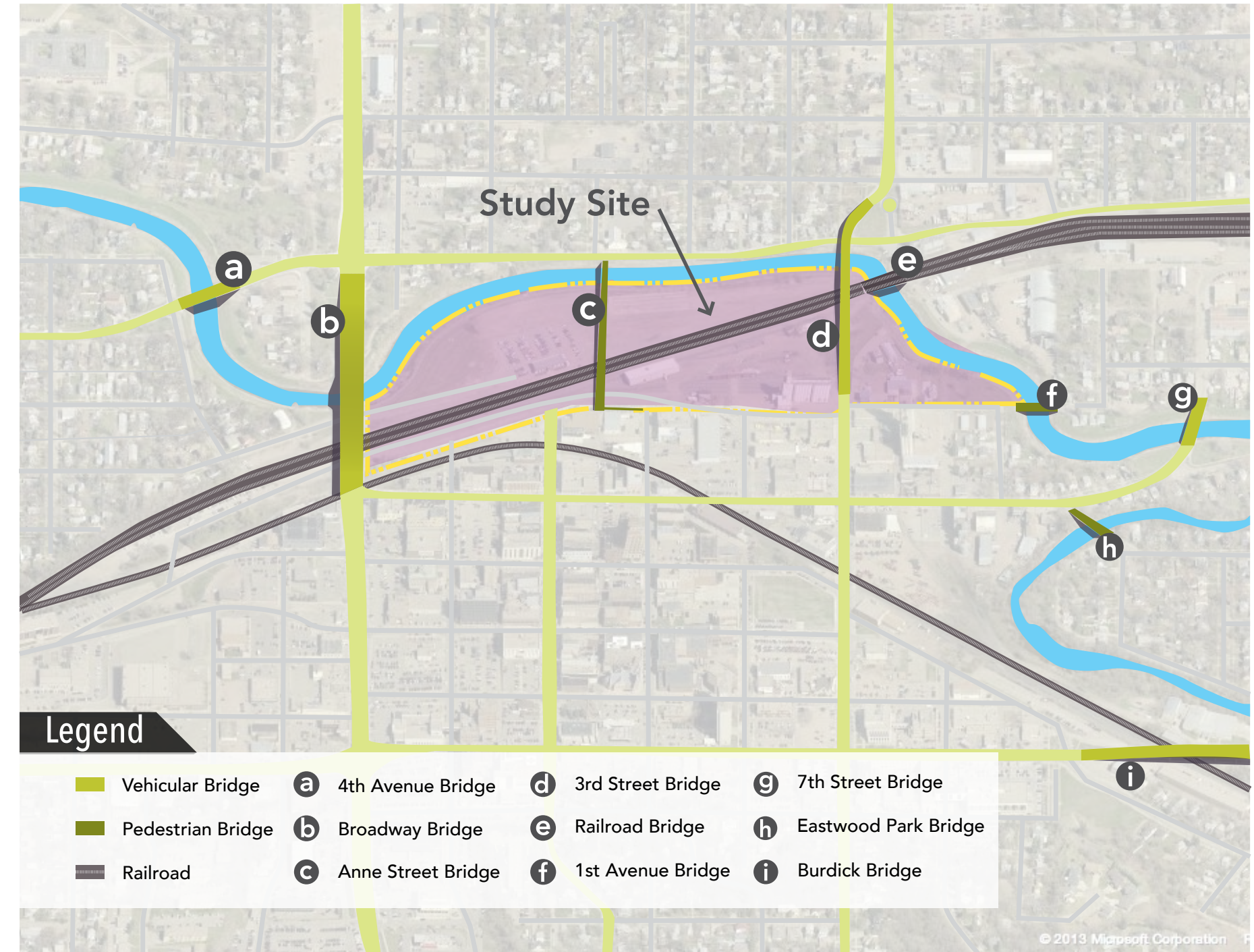
View of the eroded river bank from walking trail looking west.

Bridges

There are 7 bridges that cross the river and railway tracks within close proximity to the site, which allows for pedestrian and vehicular connections. These connections are important for easy access to the site, without easy access, less people may visit the site. The site is bordered on the West and East side by the Broadway Bridge and Third Street Bridge.

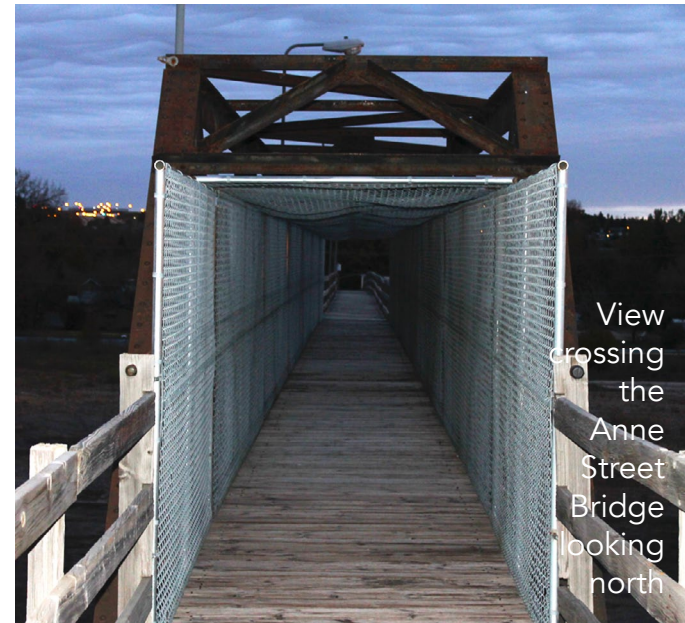
Aside from providing vital connections, the bridges also offer great views of the site for both pedestrians and motorists.

Broadway is the most heavily used street in Minot and since both pedestrians and motorists are able to view the site from the bridge, this may attract users to the site.



Anne Street Bridge

The Anne Street Bridge was constructed in 1914 as a joint effort between the railroad and the city to unite the north and south side of the river. The bridge spans over the Souris River and across the rail yard, providing the residents on the north side of the river with a direct access point to the downtown. (Timbrook, 2008) During the 2011 flood, the Anne Street Bridge's structural integrity was damaged and is in need of a major restoration.



Broadway Bridge

The Broadway bridge consists of four lanes, two northbound and two southbound. The bridge provide two pedestrian access point to the site.

The bridge is scheduled to be upgraded by the year 2015 at an estimated cost of 7.2 million dollars. Houston Engineer, Jeremy McLaughlin states that the project will include aesthetic features such as decorative lighting, stained concrete on barriers and a decorative railing. (Schram, July 2013)



View of the Broadway Bridge looking North East



View of the site from the Broadway Bridge looking west.



Pedestrian access from the Broadway Bridge



View of the Broadway Bridge looking North West



View of the eroded river bank from walking trail looking west.



View of the 3rd Street Bridge looking North East



3rd Street Bridge railing detail



3rd Street Bridge lamp post detail



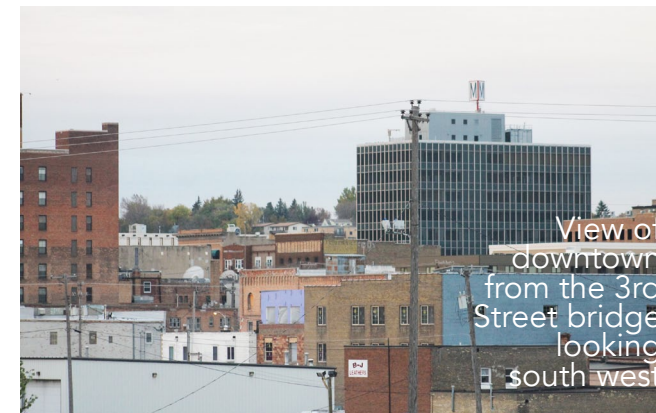
Bottom Side of the 3rd Street Bridge

3rd Street Bridge

July 30, 1937 was the formal opening ceremony for the Third Street Bridge in northeast Minot. The viaduct was the first overpass over the Souris River and the Great Northern tracks. The overpass is 911 feet long and was built at a cost of \$221,000. The opening ceremony was hosted by City Manager Jay W Bliss on the south side of the structure. (Timbrook, 2008)



View from the 3rd Street bridge looking west



View of downtown from the 3rd Street bridge looking south west



View of pedestrian bridge from the 3rd Street bridge looking east



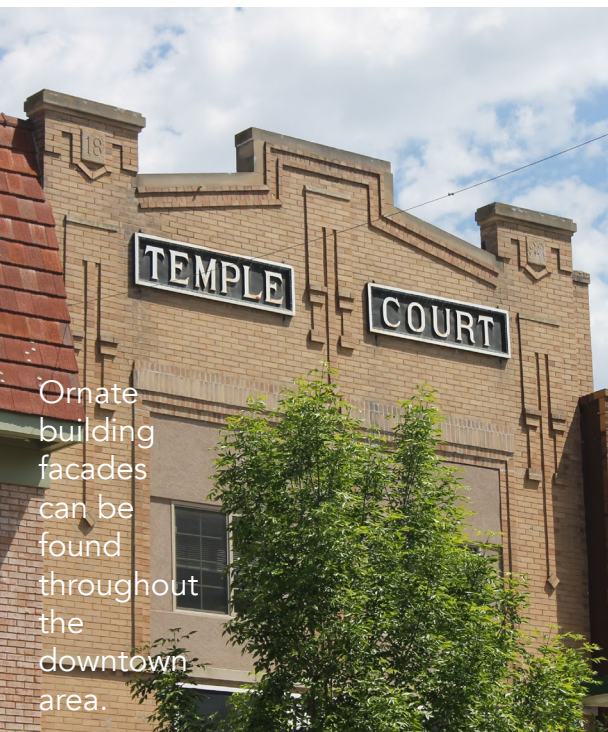
View from the 3rd Street bridge looking west



The Eastwood Park Bridge was built in 1927 and is the only cantilever type bridge with a false arch in the state of ND" (Timbrook, 2008)



Classic Herringbone paving pattern can be found throughout the downtown area.



Ornate building facades can be found throughout the downtown area.



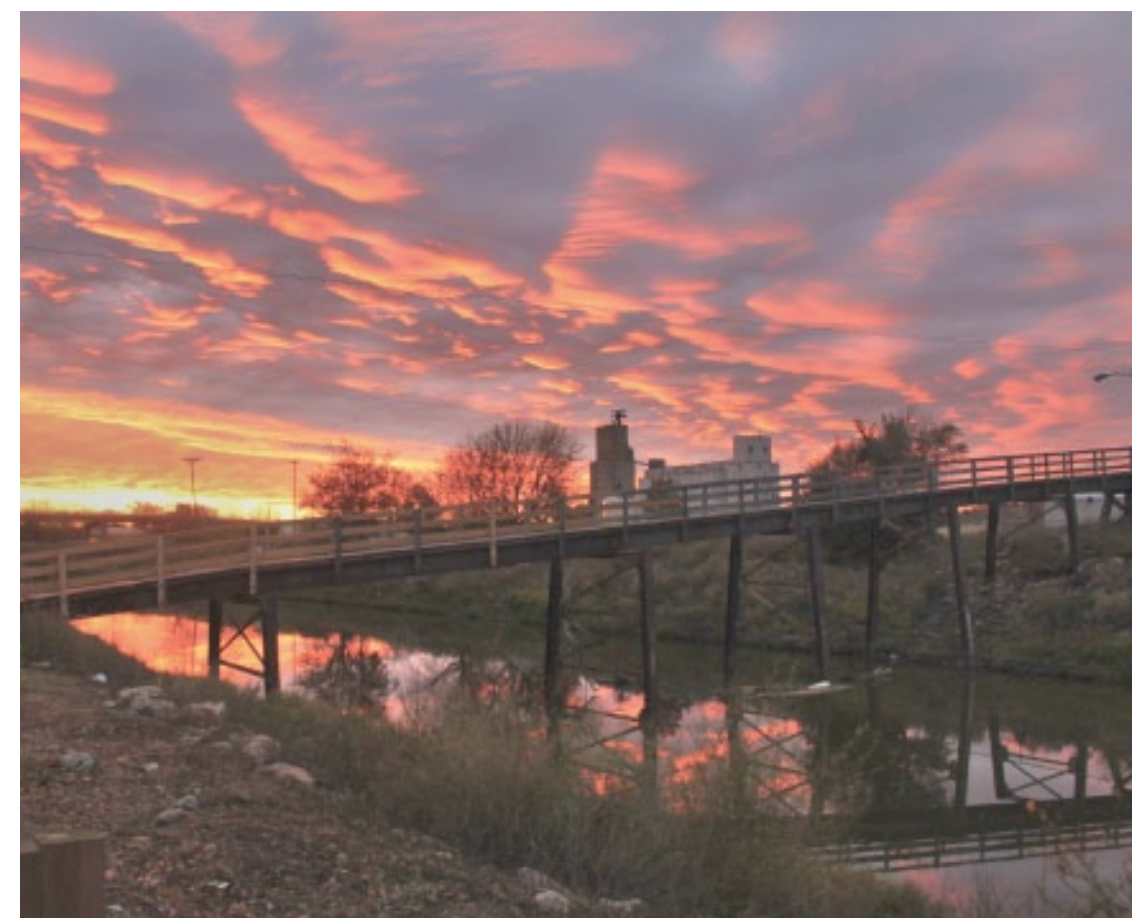
Historic Horse Trough placed on the corner of Main & 1st ave SW re-purposed as a planter.



Hairpin fence located north of the old train station is made up of wrought iron and I-beams.

Sunrises and Sunsets

Because of the wide open sky, Minot often has memorable sunrises and sunsets. During a site visit I was fortunate enough to experience one, pictured are a few photographs of the sunrise.



BNSF Railway

BNSF Railway conducts major yard operations in Minot and controls two mainline tracks through the city. BNSF operates about 30 trains per day, transporting materials such as intermodal and grain freight, drilling supplies used for oil exploration in western ND, and oil shipments from active wells. The two mainline tracks travel through the site from east to west. Also located on site is a support facility for BNSF Railway. (Mouse river enhanced, 2012)

BNSF has expressed a desire to keep their mainline tracks in full operation during the design flood event. During the 2011 flood event, the BNSF mainlines were

topped by 5-6 feet of water and were out of service for 11 and 15 days. In addition to the railways, the BNSF support facility located on site was affected for several additional weeks. (Mouse river enhanced, 2012)

In order to avoid similar flooding, the tracks would need to be raised 7-8 feet as well as modifications to the levee/floodwall alignment. Raising the track elevation would allow BNSF to continue operations during a major flood event, however by doing so, major modifications would need to be made to the existing 3rd Street Bridge and possibly two pedestrian bridges in order to accommodate necessary clearance. (Mouse river enhanced, 2012).



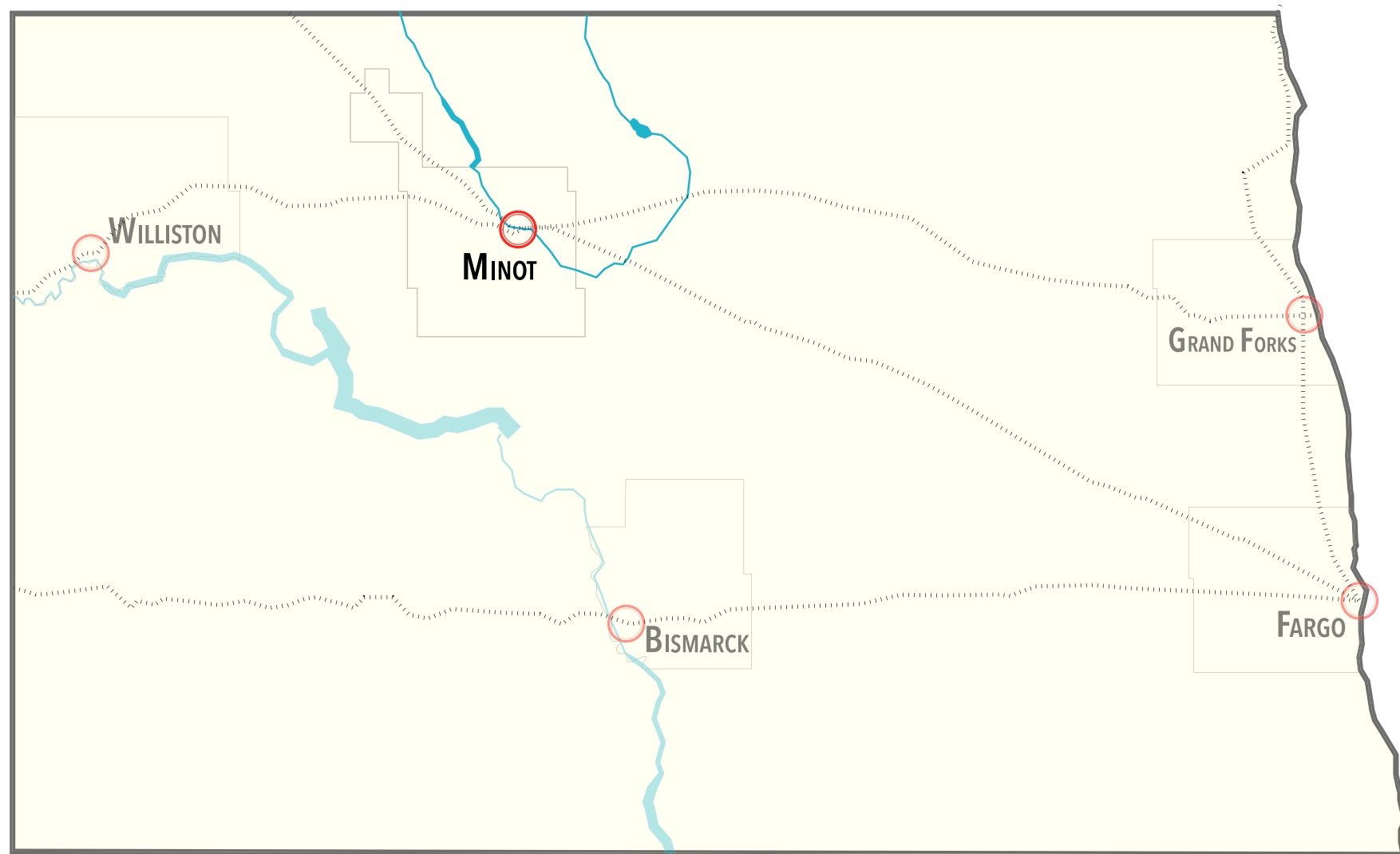
BNSF freight train traveling East



View of the railways that traverse the site looking west



View of the BNSF support facility from the Anne Street Bridge.



Map of the Major railways in North Dakota

Amtrak Depot

Minot's Amtrak train depot is located on the west side of the Broadway Bridge about . Amtrak operates two passenger trains per day on BNSF's mainline tracks - one east bound and one west bound. The west bound train arrives around 9:00 a.m. and the east bound train arrives around 10:00 p.m. The schedule stop at the Minot depot lasts for 45 minutes when train service is needed and 30 minutes when train service is not needed. (Mouse river enhanced, 2012)



Walking Path

Running adjacent to the river on the north side of the site is a 10-foot wide, half-mile long, asphalt path. The asphalt path is primarily used for walking, jogging, and running, however activities such as biking, rollerblading, skateboarding, and other forms of active recreation are permitted. The path has no clear connections to a particular point of interest. The path begins on the west side of the site by splitting from 1st Avenue NW and continues east crossing under the Broadway Bridge, the Anne Street Bridge, the 3rd Street bridge, and the Railroad bridge, the path then merges with 3rd Avenue NE. However at the merging point, a "cow path" continues along the riverbank that ends at 1st Avenue NE.

The path is lined with scattered vegetation consisting of trees, shrubs, tall grasses and noxious weeds. Deciduous trees along the path consist of oak, ash, cottonwood, apple, honey locust, and aspens. Columnar Arborvitae are placed along the path on the west side. Various types of deciduous shrubs, noxious weeds and native grass is scattered along the entire length of the path.

Chain-linked, and post and cable fences border the path on either side in an effort to keep users on the path. The chain-linked fence on the south side deters users from accessing the adjacent rail yard, and combination of chain-linked and post and cable fence prohibits access to the riverbank on the north side. The 10 foot wide path takes up about 50% of the area between the fences leaving about 8 feet of room between the path and the south fence and about 2 feet of room between the path and the north fence.

Currently, the walking path is closed to the public due to damage for the 2011 flood. The flood caused major erosion to the asphalt path and damaged the fences that border it. A 275-foot section of the path on the west side was completely eroded away, causing a large gap in the path. Much of the chain-linked fences are toppled over due to floating debris during the flooding event. The flood also deposited large amounts of sediment still remains visible on the path.



Pedestrian underpass located on the east side of the site.



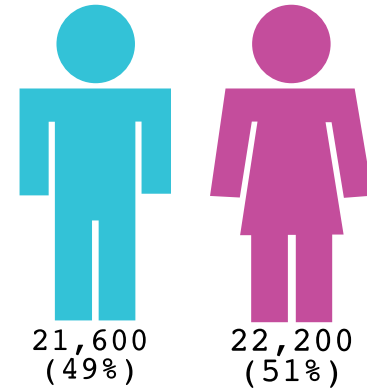
Path closed sign at the west starting point.



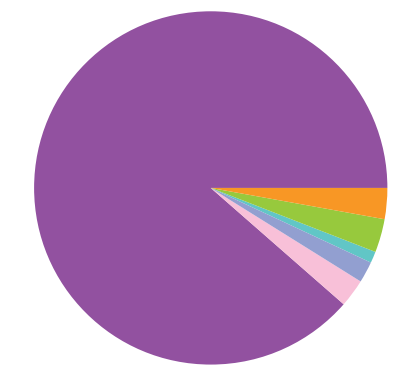
Damaged walking trail as a result of 2011 flood.



Walking trail crossing under the Anne Street Bridge.

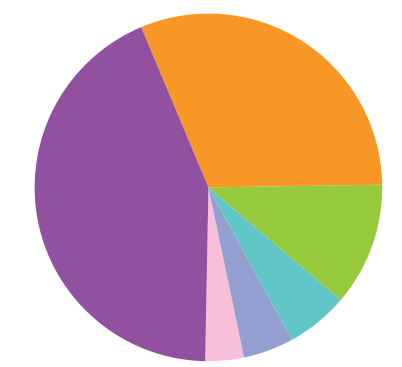


gender



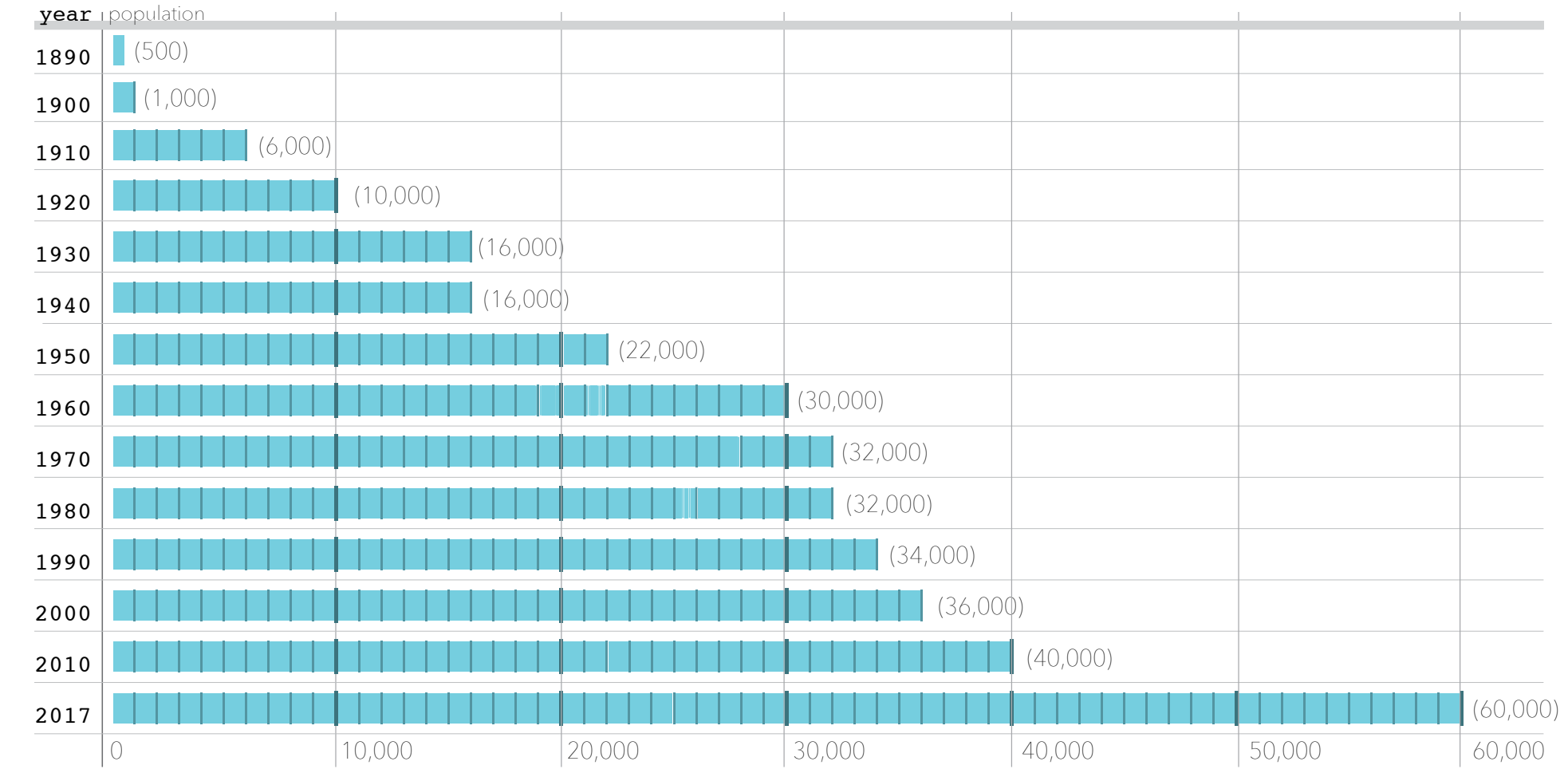
ethnicity

- white (88.6%)
- 2 or more (2.6%)
- hispanic (3.0%)
- asian (1.1%)
- african american (2.0%)
- native american (2.6%)



ansestry

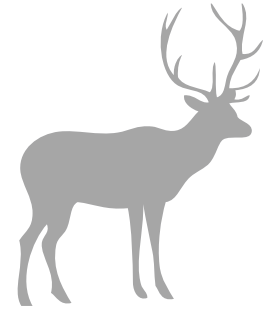
- German (31%)
- Norwegian (22%)
- Irish (8%)
- English (5%)
- Swedish (4%)
- French (3%)



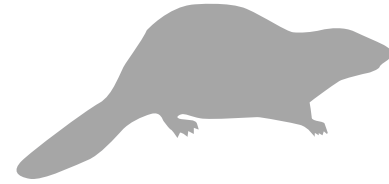
Local Fauna



Moose



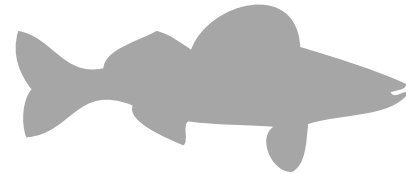
Deer



Beaver



Squirrel



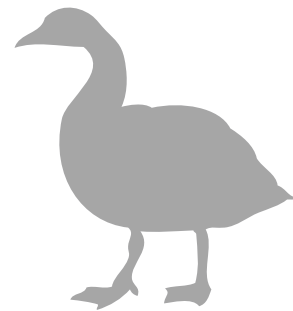
Walleye



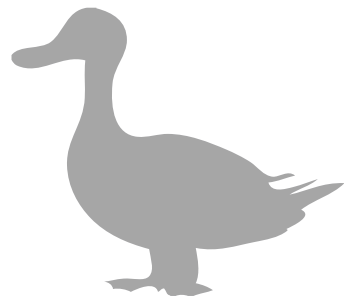
Bullhead



Northern Pike



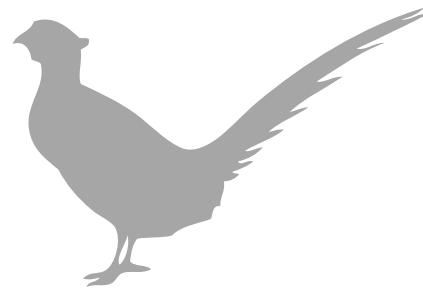
Mallard



Goose



Turkey



Pheasant

People and Groups Involved

A downtown Steering Committee (DSC) has been recently established to provide feedback on proposed development projects within the downtown area. The committee is made of 10 Minot residents with various professional backgrounds. The DCS has been working with a hired planning corporation (Stantec) to develop a revitalization plan for the downtown area. Landscape Architect, John Slack, of Stantec worked with the DCS to develop a set of design principles, a vision statement and goals for the downtown area.

Vision Statement

"Downtown Minot is an economically vital, culturally diverse mixed-use district with a distinct historic character and well-designed public spaces that enrich the quality of life for residents, families, visitors, and the business community."

Vibrant Center of the City

"Make downtown Minot a desirable destination by creating a physical environment that is aesthetically pleasing and sensitive to the historic significance of the area, while also encouraging programs, activities, events and investments that will draw visitors and residents downtown."

Goals

- Maintain Downtown Minot as the focal point of the region.
- Encourage pedestrian oriented, mixed-use redevelopment projects in the Downtown.
- Create a riverfront park system to become a community asset.
- Promote sustainable design practices throughout the Downtown.
- Strategic Public Investments in the Downtown.

Design Principles

- Design public spaces and facilities to enable the community to gather together. Activities should be planned for public spaces that will attract and entertain people downtown on a regular basis.
- Embrace the Souris River as a signature opportunity for recreation, development and place making.
- Design and located parks and trails to create and/or strengthen linkages between downtown, the Souris River and surrounding neighborhoods.
- Strengthen connections between downtown and the surrounding neighborhoods.
- Build on downtowns historical qualities to reinforce a genuine sense of place and identity.

Plant Materials on Site

Evergreen Trees

arborvitae

Noxious Weeds

unknown

Deciduous trees

Oak, honey locust, apple, ash, maple, cottonwood, aspen

Deciduous Shrubs

unknown

Native Grass

Brome grass

* An area of approximately 100,000

square feet of native grass is located on site.

Buildings on Site

Ice box

A local bar known as “The Ice Box” is located on the north east corner of 3rd Street and 1st Avenue. The Ice Box was affected by the 2011 flood but has been renovated since

Sand Solutions

Sand Solutions occupies a small quonset located just west of the 3rd street Bridge. The quonset was affected by the 2011 flood but has been renovated since. Sand Solutions transports frack sand used for extracting resources in the Bakken Oil Formation via the railroad. Much of the found plain on the eastern side of the site

consists of sand due to Sand Solution operations.

City of Minot

City of Minot street and traffic facilities are located on 3rd Avenue. Because these facilities are located adjacent to the river, the city plans to relocate the facilities in order to make room for a flood control structure.

Souris Basin Transportation

The Souris River Transportation Maintenance Facility is located to the east of the Ice Box. This building was affected by the 2011 flood but has been renovated since.

Private Residence

A private residence is located to the east of the Souris Basin Transportation Facility. The residence was affected by the flood but has been renovated since.

JB Cetral Warehouse

The JB central warehouse is used as an off site storage facility to the nearby iKeatings Furniture Store.

Slope/Contours

The slope of the river banks are approximately 35% while the rest of the site is relatively flat with an average slope of 1-2%

Contaminants

As a result of the oil exploration in the Bakken Region, bags of frack sand are stored on site near the 3rd street viaduct. Frack sand is an ingredient used to extract oil from wells in Western North Dakota. The sand was recently tested by the North Dakota Department of Health as a result of a Williston landfill showing radioactivity levels that exceeded health standards. The test results found no increase in radioactivity compared to the normal or background levels in the area.

Dan Harmon, ND Health Department, states that there is a slight concentration of low-level, naturally-occurring radiation in the frack sand itself because of the rocks used for the sand, by poses virtually no threat to the public.

Urban Analysis

Stantec conducted an urban analysis of Minot’s downtown which can be found in Appendix A. This analysis includes, land use, circulation patterns, parking inventory, flood mitigation plan, and development patterns.



Bags of frack sand waiting to be transported to west to Williston via railroad



<http://whynot.pangeahouse.org/>

WhyNot? Weekend Fest

The WhyNot? fest is a three day festival organized by the Pangea House Collective. The festival celebrates local and regional performing artists, however artists from all over the country are invited to perform at the event. The event attracted about 300 people last summer.

Currently there are six confirmed venues for the WhyNot? Festival including; The Taube Museum of Art, Roosevelt Park, Oak Park, Otis and James, Mouse River Players, Souris River Brewing. The entry fee to the festival is 15 dollars for a weekend pass or 7 dollars for an individual entry. Last summer over 100 musicians performed at WhyNot? Fest

The Mouse River Players is a volunteer based theater organization. According to their website, their goal is to provide live, quality theater experiences at an affordable cost to the community of Minot and the surrounding rural areas. Their theater is located three blocks south of the study site at 115 1st Street SE and is large enough to seat 180 people.

According to their website the Taube Art Museum is public non-profit

membership driven organization. The organizations goal is to strengthen arts in the region and provide opportunities for the community to learn about all forms of the visual arts through varied exhibits. Concerts at the Taube are held on a makeshift stage in the main art gallery. The gallery is located one block south of the study site at 2 North Main Street

Otis and James is a local photography business, concerts held here are located in their main studio space. According to their website, their studio is located one and a half blocks south of the study site at 17 South Main Street.

Concerts at Oak Park and Roosevelt Park are held at outdoor band shelters. Based on personal observation, both band shelters are similar to each other and they consist of a covered staged and bench seating.

Souris River Brewing is a local brewery located 100 feet south of the site at 32 3rd St Ne. Concerts held at this venue perform on a stage that is situated in the bar space of the restaurant.

material stock yard (winter of 1887)

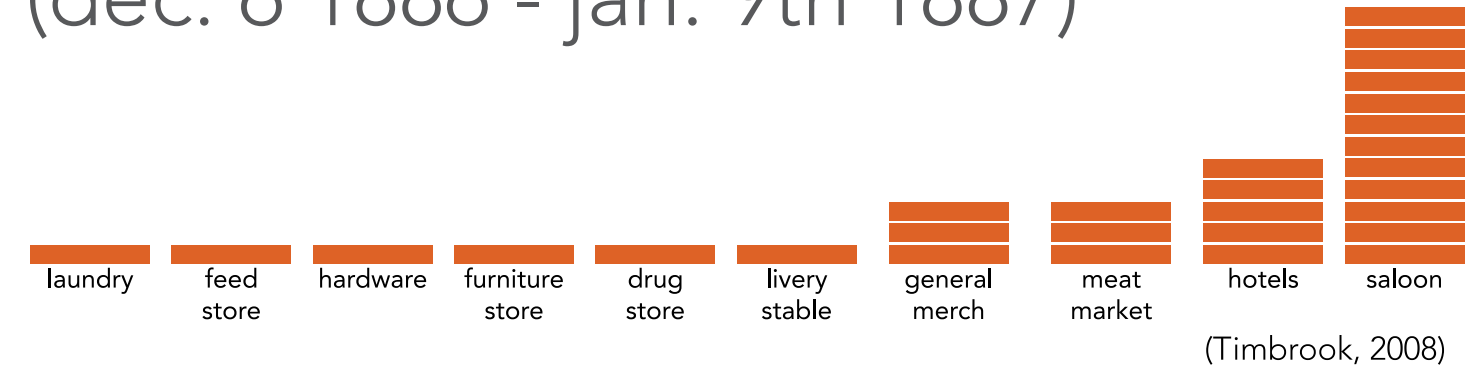


- ties (10,230)
- rails (4,280)
- spikes (155)
- timber and pilings (2,712)
- fuel & supply (10,230)

* "these materials were ammassed and sorted on Ramstad's once hard worked fields between the developing town site and the mouse river."
(Timbrook, 2008)

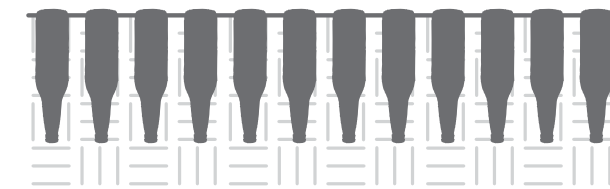
= 100 train car loads

established business (dec. 6 1886 - jan. 9th 1887)



one establishment used emptied **beer bottles**

inverted and shoved into the mud as a sidewalk



spring of 1988, minot saw its first street length sidewalk. The sidewalk lined main and was made of wood. along with the new sidewalk, kerosene lamps were installed. (Timbrook, 2008)



first fire: may 9th
1988

(started in eugene coleman's livery stable)

the fire destroyed
two-thirds
of the city

(Timbrook, 2008)

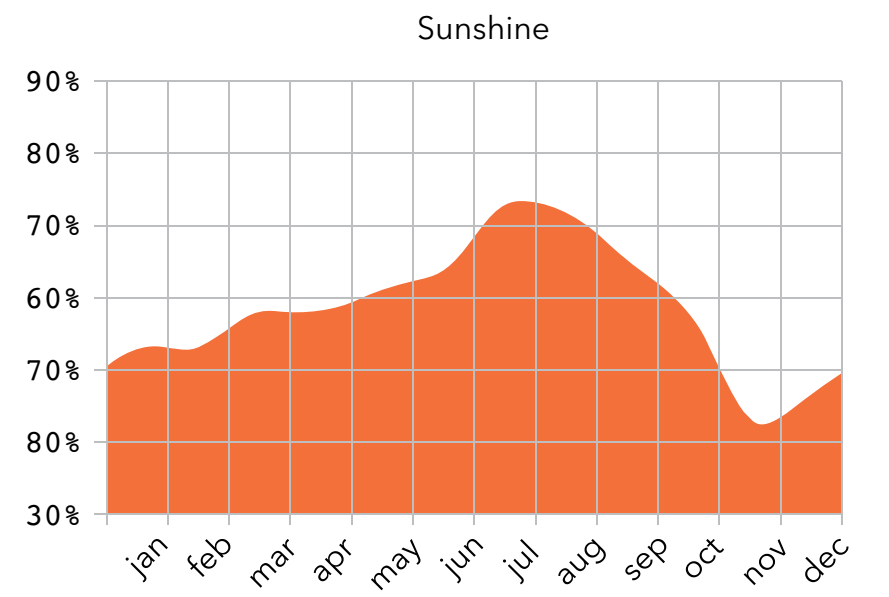
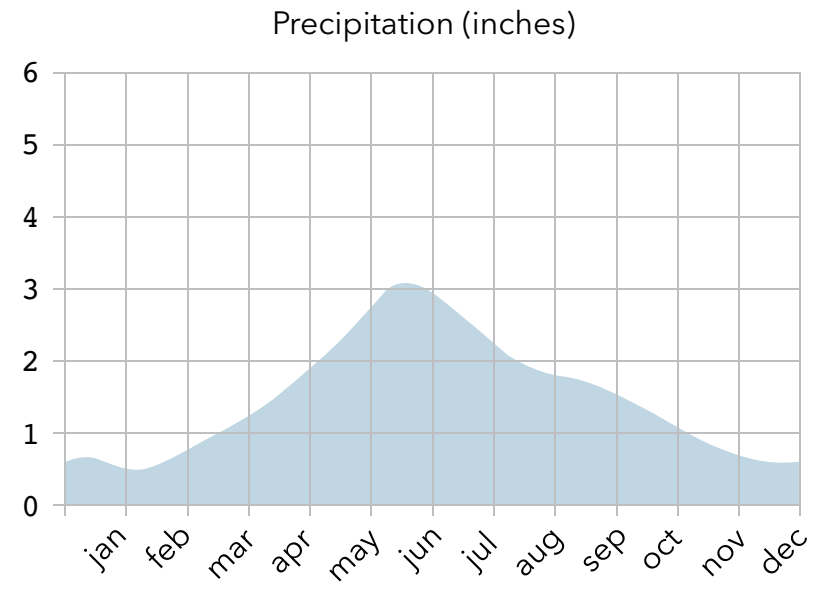
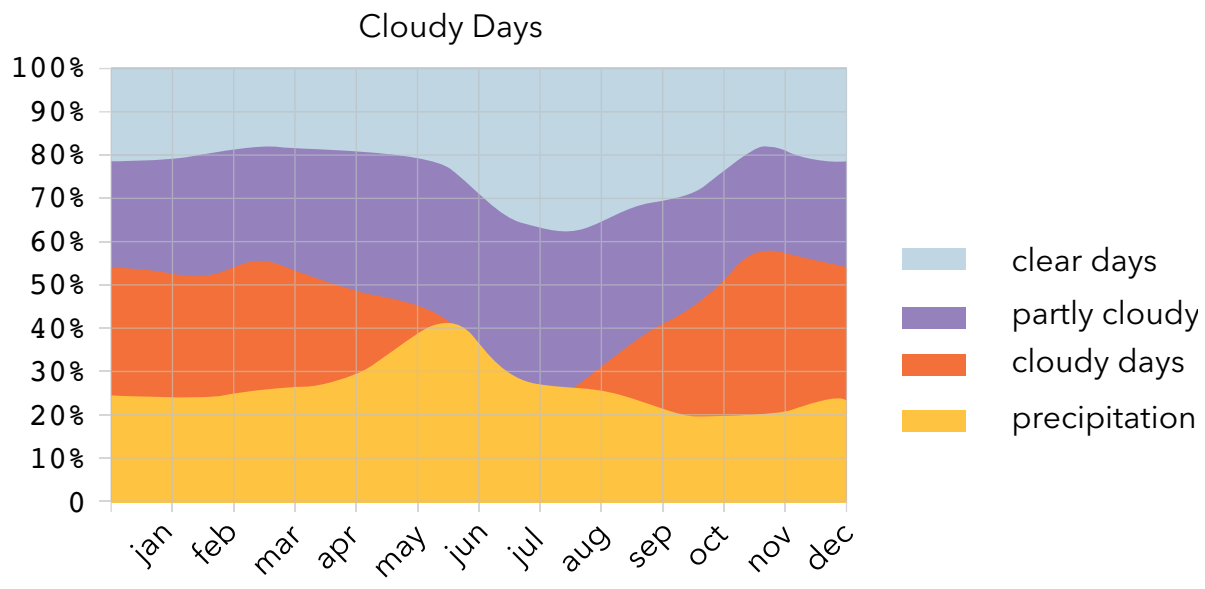
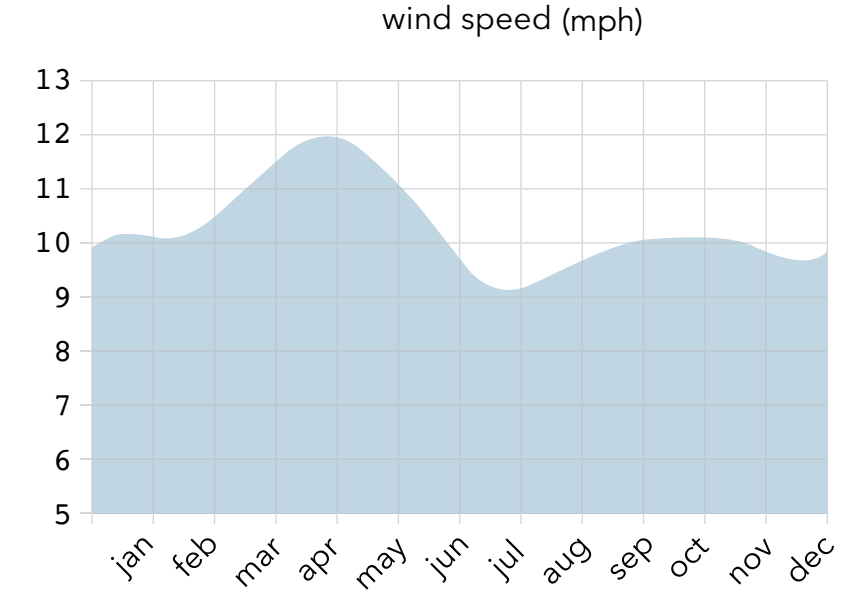
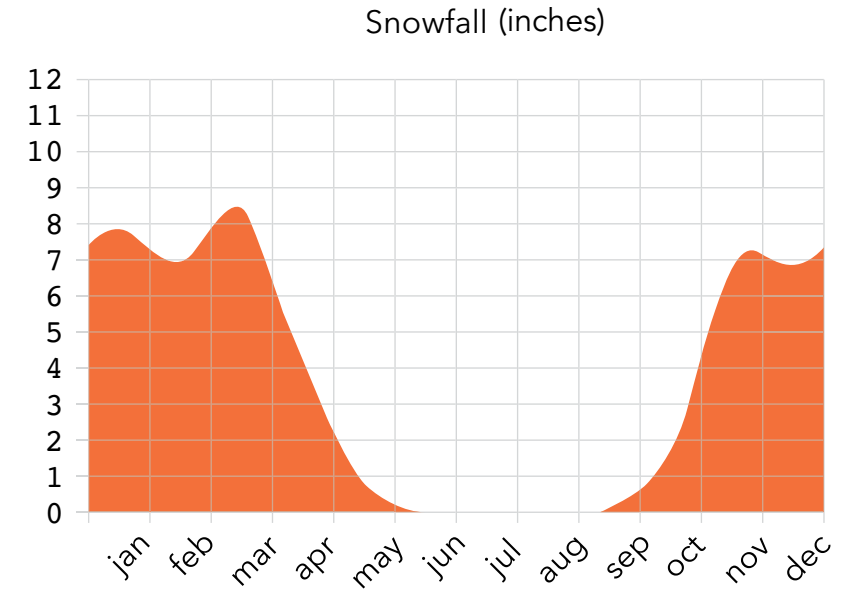
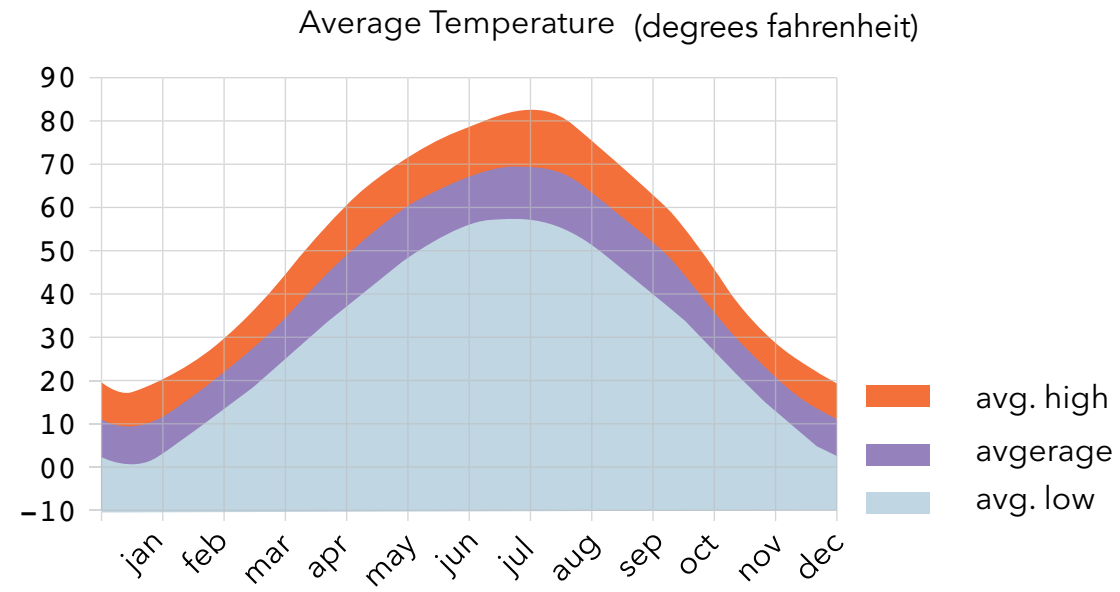
monday august 8th 1887
minots first
murder

occurs @ the white elephant saloon
the victim, shang foster, was later
buried at the intersection of

4th & 4th sw

his tomb stone read:
speak softly here, stranger,
and softly tread. shang foster
lies here, entirely dead.

(Timbrook, 2008)



The following graphs illustrate Minot's local climate. These graphs are derived from data taken from www.city-data.com.

What I determined about the city of Minot through research is that Minot, although a relatively small town has big goals for the future. Minot's 2012 comprehensive plan states that by 2030 the city of Minot will:

- Be beautiful and prosperous
- Be clean and green
- Be well planned for growth.
- Welcome of new ideas and new people.
- Have Improved transportation.
- Have a thriving Downtown.
- Provide an excellent school system.
- Provide a network of parks and open space
- Provide housing for all, affordable and high end.

With Minot's thriving economy and surplus of jobs attracting people from all over the United States, it is possible that the goals stated above will become a reality by 2030.

The downtown area has great potential to become the cultural hub of the city of Minot. It possesses historic qualities that are unique to the area, historic buildings are being renovated and new mixed-use buildings are beginning to fill parking lots. (Gefroh, 2013). Current plans are being developed in an effort to re-establish Minot's downtown as "The Heart of the

City." On October 23rd a news article was published in the Minot Daily News titled "A New Look for Downtown," written by Jill Schram, staff writer. The following text provides a summary to the article -

A long-range vision for the downtown area was unveiled at a public meeting on October 21st, 2013. The plan includes significant changes to the downtown area including, a new streetscape concept, potential in fills, and open spaces. Stantec developed two conceptual plans as part of Minot's flood recovery project for the valley.

Stantec Landscape Architect and Urban designer John Slack states that, "One of the key goals is to really reach out and bring people to the downtown, we want to get people out on the street and get them into the shops. We want to get them to stay in the downtown area." Slack also adds, "We are looking at how downtown can embrace the riverfront and bring the riverfront into the downtown. In looking at how do you access the river, the railroad is just about the biggest impediment."

Slack later states that they (BNSF) has seen the long term flood mitigation plan and realizes that their access may

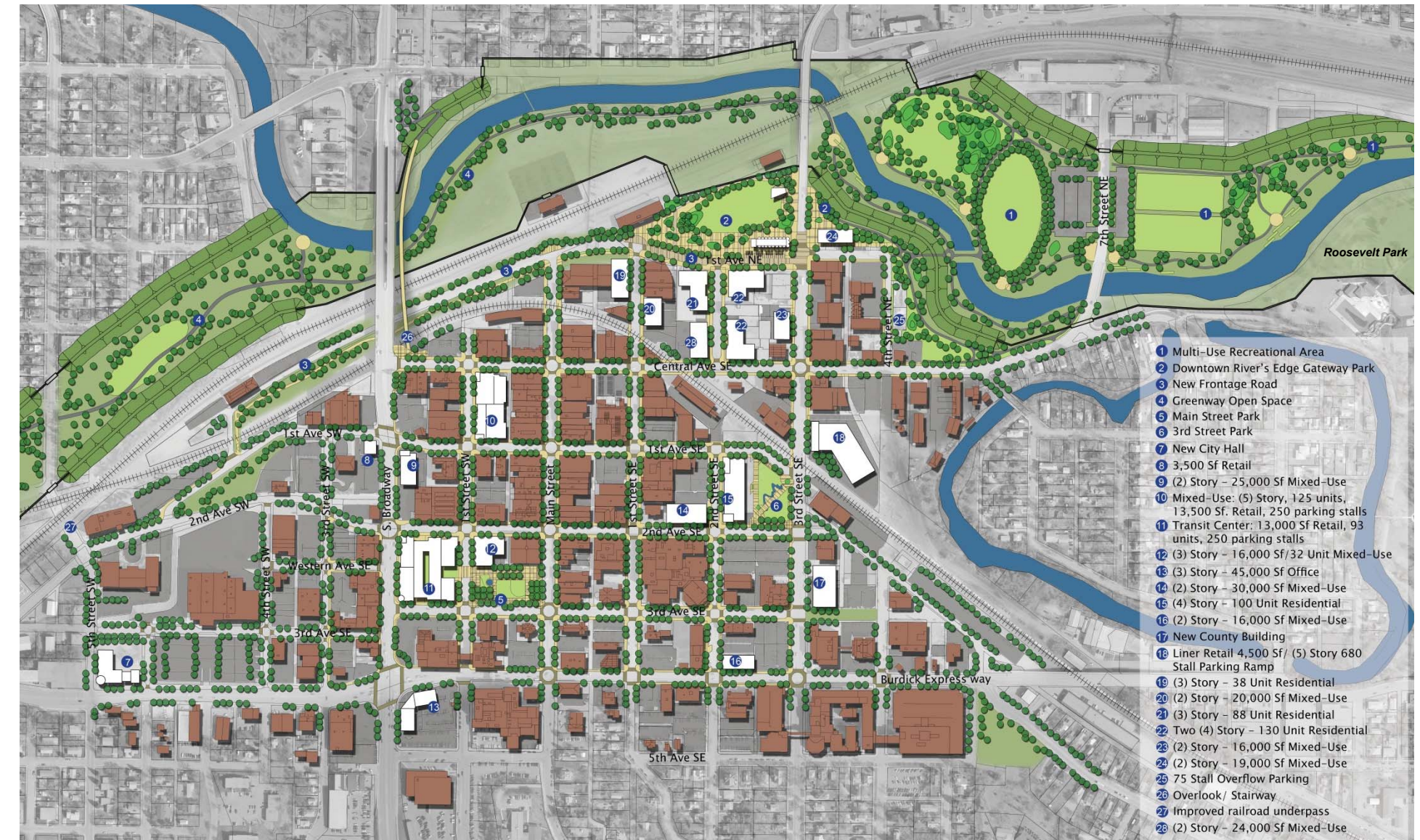
be limited, because of this the railroad (BNSF) is open to relocating some of its operations. Nothing is expected to happen for at least five years due to lease agreements. Currently the site is used to store frack sand used for oil exploration in western North Dakota.

Slack goes on to talk about the grain elevator located on the study site and says -

"Some communities would say just tear it down. Long term, that might be something you want to do, but there's an opportunity to play off the history and weave it into the design,"

- One of his proposals suggests that the structure be re-used as a rock-climbing wall.

The long-range vision also incorporates a number of new mixed-used buildings, particularly along Central Avenue and Third Street East. The plan identifies these streets as commercial corridors that would consist of retail and office space on ground level with residential space on the upper levels. The height of the proposed infill buildings are proposed to the 3-4 stories high, which is concurrent with the rest of the downtown buildings.



Alternative A

Along with these buildings, more parking spaces would need to be provided. Slack states that the peak need for parking spaces is about 6,600 which is about 1,500 more spaces that the downtown area currently has. To address parking needs the conceptual plan proposed that new developments include underground parking and that a parking ramp be constructed east of Third Street and south of Central Avenue

Currently a parking ramp is being constructed on the city-owned parking lot west of Wells Fargo and on the lot north of US Bank. The parking ramp will take up 267 parking spaces but is expected to nearly double the amount of spaces that it will take up. The ramp will serve future residential and commercial developments that will be built adjacent to the ramp. Construction is expected to take several months depending on the weather conditions.

The conceptual plan proposes that a bus hub be located to the west of the parking lot that is currently under construction. "This is all about really starting to create a pedestrian-friendly public realm," Slack said. "What we

want is to get people downtown, park their cars and walk around."

A new streetscape would also play a role in generating more interest in the downtown area. The streetscape concept includes street trees, bike racks, improved signage, way finders, monuments, decorative fencing, decorative lighting, bike travel lanes and street/sidewalk pavers.

When asked about the historical horse trough located at the corner of Main Street and 1st avenue SW Slack states, "A water feature isn't ideal in northern climates. The historical value of the fountain needs to be evaluated, but it may be best to relocate the fountain to an urban park or elsewhere, depending on the desires of the community."

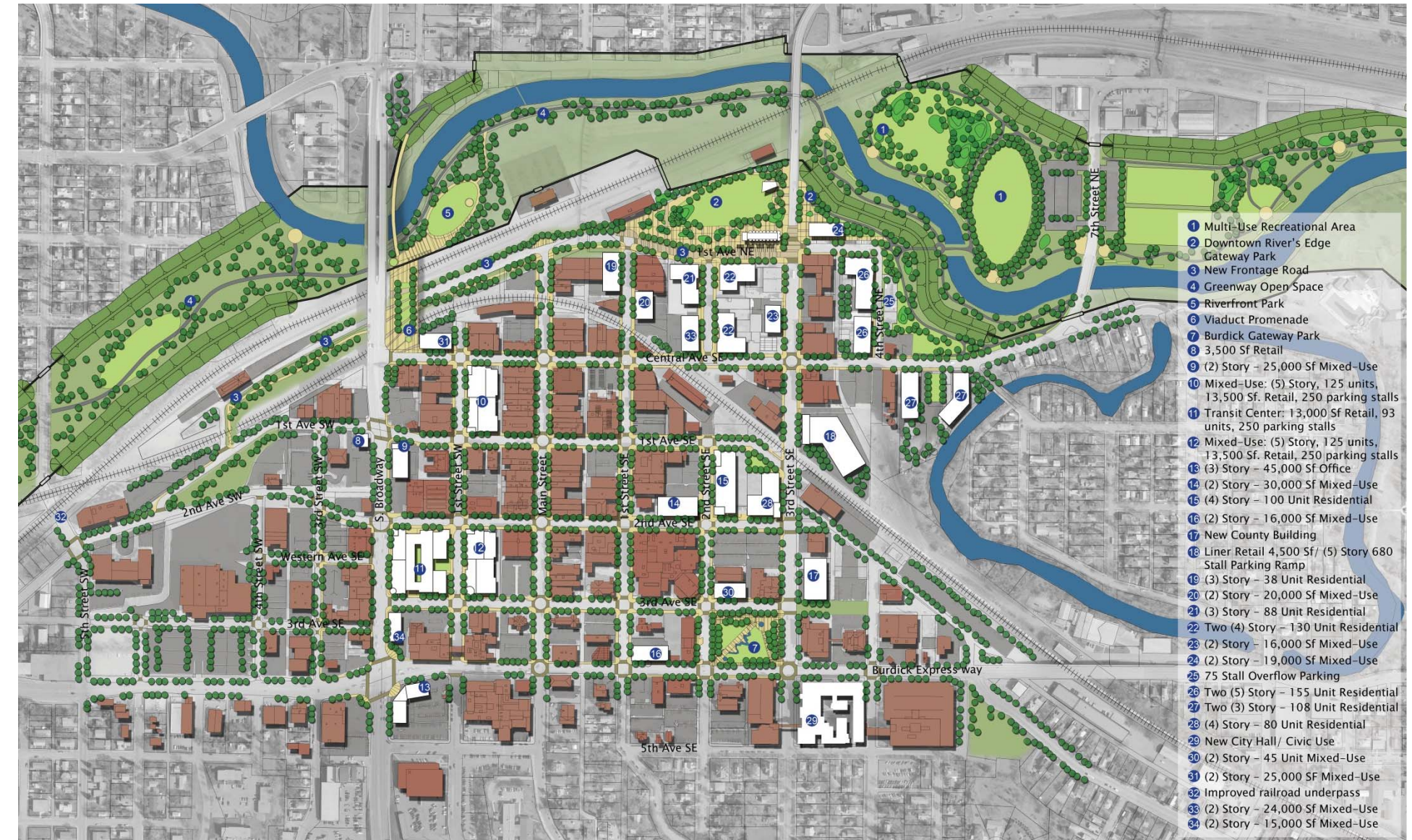
"Any revitalization starts with infrastructure improvements, and that's where Minot is in an enviable position, Slack said. The city already has obtained federal funding to assist with a major utilities upgrade downtown and also is investing in parking facilities downtown."

"The city is going to really need to prioritize how they want to invest in

the downtown to make this project come to fruition," Slack said of the overall vision. He noted short-range goals might be accomplished in fewer than five years, but some goals will take 15 years or more. Some communities that he has worked with are just mid-way into their implementation after 18 years.

"This is long term, but the vision is there," he said. "It takes everybody in this community to try to push the vision forward. Each of the projects needs to be championed."

- This news article emphasizes the potential value that a waterfront can have on Minot's Downtown area. Converting the blighted waterfront into an attractive public gathering space would help to attract more people to the area, which in turn, would increase economic activity and increase property values. These factors would contribute in creating a lively downtown atmosphere that is economically and culturally diverse.



Alternative B



Produced by: Stantec

Findings From Research

The B.P. literature review proves that planting certain trees can immobilize and break down contaminants over a period of time. Because the study site has been subject to heavy industrial use since 1986, it is possible that the site is affected by many unknown contaminants. Selecting appropriate vegetation can assist in stabilizing contaminants and remove them over a period of time.

Denver Commons Park provides its users with many different connections, it can be accessed by different means such as walking, biking, bus, and vehicular. These connections provide easy access to the site, which attracts more visitors. Another strong connection Denver Commons Park has is its link to the 10.5-mile river front trail system. This brings lively activity the park by directing walkers, runners, joggers, bikers, rollerbladers, skateboarders etc. through the site.

Olympic Sculpture Park in Downtown Seattle and Mill District in Downtown Minneapolis prove that a waterfront park can act as an economic catalyst for the surrounding area. These parks increased desirability in their areas and spurred new construction of office, retail, and residential space. In

addition to spurring new construction, the parks also increase the value of adjacent property.

In parks such as Louisville Waterfront Park and Guadalupe River, erosion was addressed by utilizing gabian banks planted with riparian species. The riparian banks act as a solid structure resistant to erosion while riparian species help to control erosion using their root systems. Addressing erosion is important to a waterfront park because waters are continually working to erode away shorelines and riverbanks.

Minot has a rich history in which the final design can draw inspiration from. Building off of historical events, community stories and historic structures will help to preserve the local history and give the waterfront park a unique sense of place. It will also engage the users by educating them on the town's unique history. Creating a unique sense of place will help to draw people to the downtown area making a lively atmosphere.

Applicable Values

Industrial waterfronts have been converted to waterfront parks in projects discussed earlier such as Olympic Sculpture Park and Louisville

Waterfront Park. Both of these projects are located in the downtown area and both provide an amenity to their surrounding context.

Louisville's downtown experienced a major disconnect between its downtown and riverfront due to a psychological barrier placed by an elevated highway system. The parks design re established a connection between the downtown and the riverfront by utilizing a gradually sloped lawn that maintained a view shed from the downtown to the riverfront. To control flooding, the lawn began its gradual slope from the water elevation in which flood protection was needed. In doing so, the park connects the downtown to the riverfront, while providing flood protection.

Similar to the study site, a railway dissects the Olympic Sculpture Park's site, causing a major disconnect. The design of the park connects the downtown area with the riverfront by using a "z" shaped pedestrian bridge. This bridge allows for pedestrians to safely access the riverfront and provides great views of the surrounding context.

The research of this study proves that

well designed spaces can contribute to the overall quality of life in a given area and act as a catalyst for economic activity. In addition, waterfront parks can act as a flood control structure, preventing damage to private property and public infrastructure.

Documentation of the Design Process

Throughout the semester, my research topic has continually evolved based from the observation that Minot's downtown area can be improved upon. The last widespread revitalization effort in Minot's downtown took place in the early 1970's (Timbrook, 2008) and has gradually fallen into disrepair since.

With Minot's growing population, it will be beneficial for the community to preserve the rich history and provide a culturally diverse atmosphere for Minot's residents. The initial idea was to preserve Minot's history through a streetscape design. The current streetscape was constructed in the 1970's and needs to be improved. However, I decided to shift my research away from a streetscape because Houston Engineering is currently under taking a similar project and construction is expected to begin summer of 2014. (Gefroh, 2012).

The following research explored how a plaza could benefit Minot's downtown area by providing a culturally diverse gathering space along Minot's Main Street. However, the approval of a parking garage on the plaza's potential site caused me to select a new site.

The site that offered the most potential for a culturally diverse gathering space was located adjacent to the Souris River. Because the site was inundated during Minot's 2011 flood, my research greatly shifted to understanding the flooding process and how to benefit from and control such natural disasters. Providing flood protection is important for the site, however Minot's Downtown still lacked a designated cultural gathering space, causing my research to shift back to the design of public parks and plazas. More specifically, the research looked into how waterfront parks could benefit a downtown area.

My thesis topic continually evolved throughout the research process. Each topic explored multiple ways to improve Minot's downtown, but as various problems were identified, the research was shifted as a result. The continual evolution of topics benefited the project overall because each new topic built off of the previous, thus increase the projects feasibility and significance with each topic change.

Fall 2013

Week 1: Understand thesis topic and begin developing statement of intent. (4 Hours)

Week 2: Understand thesis topic and continue developing statement of intent. Begin locating relevant case studies and resources. (10 Hours)

Week 3: Begin writing statement of intent. (4 hours)

Week 4: Complete writing statement of intent and turn in for a grade. (4 Hours)

Week 5: Continue researching how to preserve history through a streetscape. (5 hours)

Week 6: Topic change from preserving history through a streetscape design to providing downtown Minot with a cultural gathering space.

Research the design of public plazas and what makes successful public spaces. (10 hours)

Week 7: Topic change from providing a cultural gathering space to alternative flood control methods.

Begin writing chapters 1 and 2 while simultaneously researching flooding, and flood control measures. (25 hours)

Week 8: Turn in chapter 1 and 2.

Continue research on alternative flood control methods. (9 Hours)

Week 9: Continue research on alternative flood control methods. (9 Hours)

Week 10: Begin creating graphics for inventory section. (15 Hours)

Week 11: Continue creating graphics for inventory section. (9 Hours)

Week 12: Begin writing chapter 3. (8 Hours)

Week 13: Topic Change from alternative flood control methods to creating a public waterfront park as a downtown amenity to benefit the community.

Revise previous work. (4 hours)

Week 14: Begin writing chapter 4 and 5.

Revise previous work. (10 hours)

Week 15: Complete chapter 1, 3, 4, and 5. (40 hours)

Week 16: No Class

Spring 2013

Week 1: Prepare necessary Sketchup Model and AutoCAD basemaps.

Week 2: Develop a conceptual plan.

Week 3: Finalize conceptual plan.

Week 4: Develop a schematic plan.

Travel to Minot for a site visit

Week 5: Finalize schematic plan.

Week 6: Develop a masterplan.

Week 7: Finalize the masterplan.

Week 8: Begin developing details and construction documents.

Begin working on physical model.

Week 9: Finalize details and construction documents.

Finalize physical model.

Week 10: Begin developing renderings and perspectives

Week 11: Finish developing renderings and perspectives

Week 12: Begin laying out presentation boards.

Week 13: Finish laying out presentation boards.

Week 14: Begin preparing for final presentation.

Week 15: Finalize booklet and presentation.

Week 16: Tie up loose ends, plot, and practice presentation

Theoretical Goals

Incorporate local history into the final design; this will help to create a unique sense of place and also provide an educational element to the park.

Reconnect the community with the waterfront, providing a place that will attract people to the downtown area.

Create a sense of Identity for the downtown area; creating a unique sense of place will draw people downtown, resulting in a culturally diverse and lively atmosphere.

Increase economic activity by attracting people to the downtown area

Increase adjacent property value by creating a desirable place to live and operate a business

Physical Goals

Connect the site to surrounding neighborhoods through sidewalks, streets, bridges.

Provide flood protection that will connect the downtown area to the Souris River rather than acting as a barrier.

Take advantage of view sheds from bridges located on site.

Eliminate contaminants on site through phytoremediation techniques.

Link the park to the future trail system.

Incorporate sustainable design practices.

Social Goals

Encourage an active lifestyle by providing recreational activities. This will decrease the risk of obesity resulting in a healthier and happier community.

Promote social activity by programming seasonal activities and by incorporating spaces that can accommodate annual events/festivals.

Contribute to the overall happiness of the community.

Incorporate sustainable design practices.

Allow for flexibility by incorporating open space within the park.

chapter four.

Discussion.

Discussion

The research of industrial urban waterfront parks leads to a few questions - some with answers, some with more dialogue. The dialogue and discussion falls into 3 distinct categories.

These areas include- how does the community benefit from a waterfront park, does an industrial area negatively affect the growth of downtown, and can a culture gathering space be supported by a changing community.

Based on the research, some of these questions lead to further questions and discussion between the community, the designers, and city leaders can go in many directions. The directions for this dialogue includes cultural, economic and seasonal.

Community Values

Similar to the Portland community, Minot residents place high value on their parks. In 2011 Coca-Cola held a contest where people around the nation could vote for "America's Favorite Park." The contest was held over a few months and the park that received the most votes would receive a 100,000-dollar grant to make improvements on the voted park.

Oak Park was badly damaged as a result of the 2011 flood and Minot residents saw the Coca-Cola contest as an opportunity to help restore Oak Park to its original condition. Word quickly spread about the contest though social media and the community supported the effort to secure the 100,000 dollar grant to help cover some Oak Park's restoration costs.

After the contest was over, a total of 13,000,000 votes were cast across the nation and Oak Park was titled "America's Favorite Park." The 100,000 dollar grant went to help restoring Oak Park to its original condition.

The following year, Coca-Cola held it's third annual America's Favorite Park contest, residents of Minot saw this an opportunity to help out Roosevelt Park, another family park in Minot. Roosevelt received many votes but fell short of winning the contest.

This contest proves that residents of Minot value their parks, further supporting the idea of developing a public waterfront as a downtown amenity.

Industry

Over the past century Minot's

downtown waterfront has been subject to heavy industrial use. Industry along the riverfront helped Minot grow into what it is today. The industry has provided citizens of Minot with well paying jobs, and various services.

In turn, it has been a contributing factor the local economy. But with the recent changes happening in Minot and the projected growth, is Minot's industrial waterfront prohibiting the growth potential of the downtown area? Is it time that the riverfront be returned to the public like it has been in other communities around the world?

Industrial sites aren't commonly known for contributing to an areas aesthetic qualities and the chosen study site is no exception. The study site is largely gravel and very run down. Considering the sites central location, I feel that it negatively affects the overall impression of the area. Converting the study site into waterfront park will help to contribute to the city's 2011 comprehensive plan of being clean and green, and have a strong network of parks.

2011 Flood

One positive outcome of the 2011 flood was that it reinforced the sense

of community within Minot and brought residents closer together. Before, during, and after the flood, residents of Minot were doing anything they possibly could to reach out and help one another. (Gefroh, 2013)

Prior to the flood, residents worked long hours side by side shoveling sandbags in an effort to fight the rising waters. Once it was realized that the flood fight could not be won, residents began to evacuate. Through the evacuation processes, both friends and strangers gave a helping hand to those that were required to evacuate, by offering personal services, vehicles (trucks), and places to store personal belongings. During the flood, the people whose houses weren't affected by the rising water, opened their doors to those that were, of the 11,000 residents that were displaced, less than 1,000 people sought refuges at the available shelter located within Minot State Universities Dome. Even after the flood, residents continued to provide a helping hand by assisting in the recovery process. (Gefroh, 2013)

It will be important to provide a space for the community to gather, and by incorporating metaphorical and/or physical elements inspired by the

2011 flood will add meaning to the park. I would like to somehow capture the strong sense of community within Minot and translate that into the landscape.

Costs
When discussing alternative methods of flood control one may argue against developing a waterfront park as a solution, based on cost. Floodwalls and dikes can offer the same protection, but they require much less planning and are cheaper to construct.

Although floodwalls and dikes may be appropriate for some areas, floodwalls and dikes create a physical barrier between urban areas and river. Long term, this may not benefit the surrounding community as much as a waterfront park. Waterfront parks have been proven to act as a catalyst for economic activity by generating interest in the area.

Environmental and urban conditions directly influences people's sense of well-being: location specific factors are shown to have a direct impact on life satisfaction, therefore, well designed spaces could contribute to overall happiness. (Shaftoe, 2008). In 2004, CAFE Space conducted a report titled, "Please Walk on the

Grass: Does Money Grow on Trees?" concluded that well designed public spaces not only provide social and environmental value but also increases property values and are good for business. (Shaftoe, 2008).

Comfort
We generally feel comfortable by experiencing natural elements in the landscape, but perhaps the most vivid and popular sensual experience for humans is water (Shaftoe, 2008). Creating a park that has a comfortable atmosphere is important for its overall success. Michael Van Valkenburg states that "No matter how great a landscape looks, if your uncomfortable when your there, it's a failure."

Creating a comfortable space can be achieved by providing appropriate spots in which users are able to linger, sit, eat, drink, and converse. (Shaftoe, 2008). A good public space will cater to the different types of observation and communication. (Shaftoe, 2008).

Public Art
Currently, the city of Minot does not offer an outdoor space for displaying public art. With the newly constructed Artspace attracting artists to the downtown area, providing a designated space to display public art

will generate public interest and help to support the art community within Minot.

Implementing History
The railroad plays the most crucial role in the history of Minot, without it, it is likely that Minot would not exist today. Preserving the history of the railroad will be a driving concept within the final design.

Because the study site has been subject to railroad activity since Minot's establishment, there are many historical remnants located on site. The most visible of these remnants are building foundations and unused train tracks.

The most iconic archeological remain on site, which is still visible today, is the foundation for the old round house. I have not been able to gather much information about the round house other than the fact that the original 10-stall round house was built in 1887 and was later replaced with a 20-stall round house in 1904. Then in 1907, 16 additional stalls and a machine shop were added to the round house. (Timbrook, 2008). I hope to find more information on the round house next semester to gain a better understanding of what the round house meant for the community.

Other archeological remains are that of the unused train tracks. I would like to integrate these unused train tracks within the final design similar to Highline Park in New York City. Highline Park demonstrates how abandoned tracks can be used as an historic element to create a unique sense of place.

There are two train museums located within close proximity to the site. The CP Rail Museum is located south of the Anne Street Bridge and the BNSF Museum occupies the original Minot Depot located adjacent to the site. In addition to the museums, the Amtrak Depot is located just west of the site. Creating a railroad themed park would compliment these surrounding buildings and potentially draw more visitors.

In addition to the railroad, organized crime is also deep rooted within Minot's history, during Minot's early years the city was notorious for alcohol smuggling, illegal gambling, and prostitution. Colonel Clement Lounsberry, contemporary historian and founder of the Bismarck tribune described Minot after visiting as, "Minot was a wild roaring town in those (early) days. There were 23 saloons, sporting houses, dance halls, gambling of every class and floating

population of 2,500 during its first year of existence" (Timbrook, 2008).

Because a majority of the railroad workers were men, prostitution was common to railroad towns, and Minot was no exception. Up until the 1960's, 3rd Street SW was notoriously known as Minot's "High Third Street District." High Third Street district was made up of 3 or 4 blocks of prostitution houses along with secondary illegal businesses. This part of Minot had a different rhythm than the rest of the town, it was open 24-hours a day one could seek prostitution services, gamble, and illegally consume alcohol. (Timbrook, 2008)

All though it may be controversial, implementing memorials and/or elements that symbolize Minot's dark past will help to create a sense of identity within the park. I plan to explore design concepts that will metaphorically acknowledge the organized crime and Wild West persona that Minot is historically known for.

Implementing Minot's history into the final design of the park will help to preserve local history, engage the community, educate visitors, and most importantly, create an identity for Minot and the downtown area.



Although tough to see from this photo, the round house foundation still exists today.

chapter five.

site opportunities and challenges.

When looking at the opportunities and strengths the chosen study site has to offer, specific circumstances will provide a direction in which this project will lead.

The challenges presented by the site are largely seasonal and industrial issues. The seasonal issues presents periodic flooding, and cold winters. Currently, the site is subject to industrial use so contamination and cultural/social concerns must be addressed.

Along with the challenges, the site also presents many strengths and opportunities for benefiting the downtown area. The site's central location and close proximity to the downtown area provides many critical connection points. The site's rich railroad history and existing historical structures can be implemented into the final design to assist in creating a unique sense of place.

Safety

When designing around seasonal flooding, safety becomes a major issue. Flooding events are dangerous in a sense that the damages they cause to physical structures are unpredictable. Local engineer, Howard Wank of Wank Associates, states that

“There is no such thing as 100% safe.”

In order to address safety through a design, one must determine what is an acceptable risk by weighting out the potential risks and the potential rewards. (Wank, 2013) In the case of a public waterfront park, there are many risks associated with allowing direct access to the river. One risk of allowing direct access to the river is that people, especially children, may drown, a person could potentially get caught up in an undercurrent forcing them to drown. Another risk could be injury due to wet surfaces, and debris in the river. A person may be walking near the river and slip and hit their head. A person could also be swimming in the river and be stricken by floating debris. As with other activities in our daily life, accessing a river introduces risks.

The benefits of providing year round access to the river, is simply being able to access the river. Currently, there is no single designated space along the riverfront in Minot that provides direct access to the river. There are docks that allow activities such as fishing, but these areas don't allow for direct contact with the water. In order to even touch the water, one must navigate through steep muddy

riverbanks. Research has shown that water is the source of human life and as a result we as humans are naturally drawn to water. Water has a calming effect on humans, and by allowing direct access to the river through a riverfront park would attract users despite the risks.

In order to address safety within the final design, signage that warns users of the potential dangers and risks of accessing the river will be placed along the riverfront. Safety may also be addressed by implementing railings where direct access to the water is not permitted.

Flood Control

The level of flood protection should also be considered when designing a waterfront located in an area that faces seasonal flooding. Because flood events are so sporadic and unpredictable, determining the level of protection should be specific to the area. For example, rural areas may only need 50-year flood protection, while in urban areas, where more structural damage can occur, it may be beneficial to provide 100-year flood protection.

In the city of Minot's case, the local engineering firm working on the

preliminary flood control alignment plan determined that flood control structures should be designed to control the levels that the 2011 flood reached which peaked at 1561' with a flow rate of 27,400 cubic feet per second. In order to achieve the desired goal of providing adequate flood protection, the final design will aim to control the recommended levels Ackermann Estvold Engineering provided. This will be done through a combination of artfully sculpted dikes, along with permanent and temporary floodwalls.

Rail Traffic

Another safety issue other than flooding is the continual train traffic that passes through the site. On an average day, about 30 BNSF trains and 2 Amtrak trains cross the site. There are multiple options to address this safety issue. The train could be rerouted, a pedestrian underpass or overpass can be implemented, or a railroad-crossing signal can be placed to warn users that a train is coming.

Since the railroad tracks are within the flood plain, Ackermann Estvold Engineering determined that the current tracks would need to be raised by about 7 feet in order to avoid a flooding event similar to the 2011

flood. However raising the track would mean that the 3rd Street Bridge and the Anne Street Bridge would also need to be raised in order to provide the necessary clearance for the train to pass under. Raising the track by seven feet would also create even more of a physical and psychological barrier between the riverfront and the downtown area. In addition to creating a barrier between the river and the downtown, the train also negatively impacts the site because of the noise pollution and the vibrations it causes as it traverses the site.

Despite the high cost, it would be beneficial for the community in the long run to reroute the train. By doing so, 3rd Street Bridge and the Anne Street Bridge would not have to be sacrificed, and also the barrier caused by the tracks would be eliminated.

Leaving the track as is on the site and allowing trains to travel through the park would continue the railroad tradition that started the town. This would create an opportunity for the final design to 'celebrate' the train, rather than completely eliminate it.

Both options of rerouting the train and leaving the train as is will be explored during the design phase

through various concepts in order to determine which option would be more beneficial.

Existing Structures

It will be important to provide a direct link between North Main Street and the riverfront. Currently, the railroad tracks and the BNSF Facility prohibit a direct linear connection between Main Street and the river. Because of this issue, an alternate location for the BNSF Facility will be determined. Along with the relocation of the BNSF Facility, this study will also explore if rerouting the train would be more beneficial than leaving it as it.

Facilities located on site have a potential to be re purposed rather than completely removed. Stantec Landscape Architect and urban designer, John Slack, proposed that the Minot Farmers grain elevator be re purposed into a living green wall, a rock-climbing wall, or a combination between the two. In addition, he suggested the idea to flood the wall in the wintertime to allow for ice climbing. Since the Minot Farmers Grain Elevator is visible from much of the city, re purposing the elevator into combination of a living green wall and a rock climbing wall could potentially become an icon of the park.

Slack also suggested that other facilities on site be re purposed to facilitate seasonal vendors and rental equipment such as bikes, kayaks, rock climbing gear, etc.(Gefroh, 2013). I think that re purposing the existing structures is important because it would both preserve the history of the site as well as serve a function within the site.

Events

Public spaces are important for conducting social activities because they offer one of the few opportunities for people to directly encounter other people with different norms, behaviors and cultures. (Shaftoe, 2008). Public spaces also offer opportunities for people to build up sense solidity with their fellow citizens through chance encounters, and organized events such as festivals and demonstrations. (Shaftoe, 2008).

I plan to explore concepts that will provide a designated space to hold the annual lighting of the Christmas tree. Currently a temporary tree is placed at the intersection of Main Street and 1st Avenue North. One benefit to this location is that the tree can be viewed from anywhere on Main Street, which creates a holiday season type atmosphere in the downtown

area. However one downfall to the location is that it is located in the middle of the street which causes a potential traffic hazard.

This location has been a long-standing tradition so I will keep that in mind when determining where the tree will be placed within the design. It may be beneficial to move the location of the Christmas tree in order to provide enough space for gathering.

A concept worth explore will be to implement a round-about at the intersection of Main Street and First Avenue. Within the round-about, a Colorado Blue Spruce could be planted to serve as a permanent, living tree that would be lit up for the annual Christmas tree lighting. One disadvantage to a permanent tree in this location is that it would block views of the riverfront.

Seasons

It will be important to attract visitors to the park year round, this can be achieved by programming seasonal activities.

The summer months will likely draw the most visitors to the site. The warm temperatures encourage people to get outside and enjoy the weather. So

activities such as festivals, events, and recreation will be enough to attract people in the summer time.

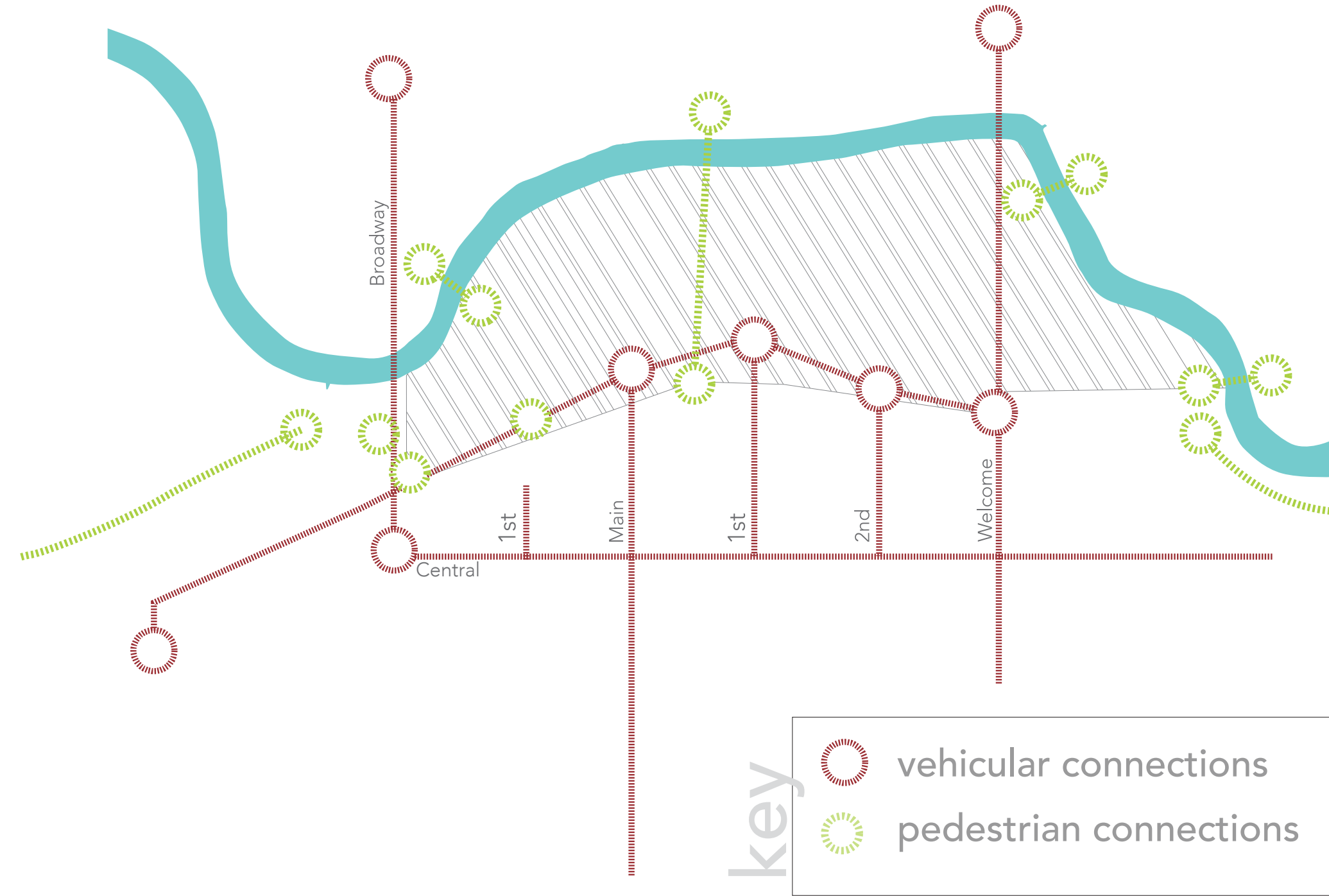
Minot's winters tend to be very cold, so the winter months will become the biggest challenge for attracting people.

Activities such as snowshowing, cross country skiing, ice skating, ice climbing sledding, and snowboarding are potential programmatic elements that may attracts users in the cold winter months.

Site Connections

It will be important for the site to be accessible my various means of transportation. One strength of this site is the existing and potential connections it offers. The graphic on the following page demonstrates possible connections to the site if the railroad were to be rerouted.

The site's close proximity to the Downtown creates strong vehicular connections on the south, while bridges and future trail systems provide multiple pedestrian connections.



chapter five.

Final Design.

Project Statement

Downtown Minot, ND is in the midst of a large-scale renovation, however industrial sites along the Souris Riverfront are still largely present, disrupting the urban landscape. The solution transforms a railway corridor into a 40-acre riverfront park, which preserves local history, provides flood protection and acts as a catalyst for development in the downtown area. Overall, the project reconfigures Minot's riverfront in an effort to improve the quality of life for the citizens of Minot.

Project Narrative

Existing Conditions - The 40-acre site is located along the banks of the Mouse River more commonly known by its French named, the Souris River and plays an important role in Minot's history. In 1886, the railroad progressed through northern North Dakota towards the Pacific Coast and Minot became a stopping point for the winter months. As a result, a tent town magically sprung up overnight, dubbing Minot as "The Magic City."

Over the years, the railroad has been a contributing factor to Minot's success and is still largely present today. Approximately 33

freight trains containing Bakken crude oil traverse through the site daily, additionally it is used as a storage site for frac sand, which is used for oil exploration in Western North Dakota.

Railway Alignment - The design solution first addresses the configuration of the railroad in relation to the downtown. Minot's 2011 comprehensive plan, created by Stantec, envisions the downtown to be well connected with the riverfront and a trail/park system. However, a rail yard is situated between the Souris River and the downtown causing an impenetrable barrier for pedestrian access.

This proposal re-aligns the railway tracks to the north side of the Souris River enhancing the connection between the downtown and riverfront, and allows for a brownfield reclamation opportunity.

3rd Street Alignment - The proposed railway alignment causes forced changes to the 3rd Street Bridge. Prior to the re-alignment, the railway traveled below the 3rd Street Bridge - after the re-alignment, the railway passes over 3rd Street. Bridging over 3rd Street

removes the railway from the 500-year floodplain and allows 3rd street to become properly aligned.

Brownfield Removal – Structures with no historical significance located on site are removed to maximize green space along the riverfront.

Greenfield Implementation - The overall forms and functions within the park are largely inspired by the site's history, surrounding context, and the needs of the community.

Site History - Due to the site's historical significance within the region, conscious efforts were made in preserving historical feature such as: The Minot Farmers Grain Elevator, the Anne Street Pedestrian Bridge, and existing railways. Remnants of the foundation from the pre-existing roundhouse were the inspiration behind the form and location of the Roundhouse Amphitheater and Lawn.

Surrounding Context - Because the site is located right in the heart of downtown, connecting the park with its surrounding context was a top priority. The design allows vehicular/pedestrian access from

the downtown area, pedestrian access from the surrounding neighborhoods, and connections future trail systems.

Needs of the Community - Minot is experiencing a period of rapid growth and development due to oilfield activity within the region. Along with growth and development comes a demand for public parks, this project fulfills Minot's need for a central, accessible, and cultural gathering space. Additionally, it strengthens Minot's park/trail system by creating a well-connected and unique sense of place.

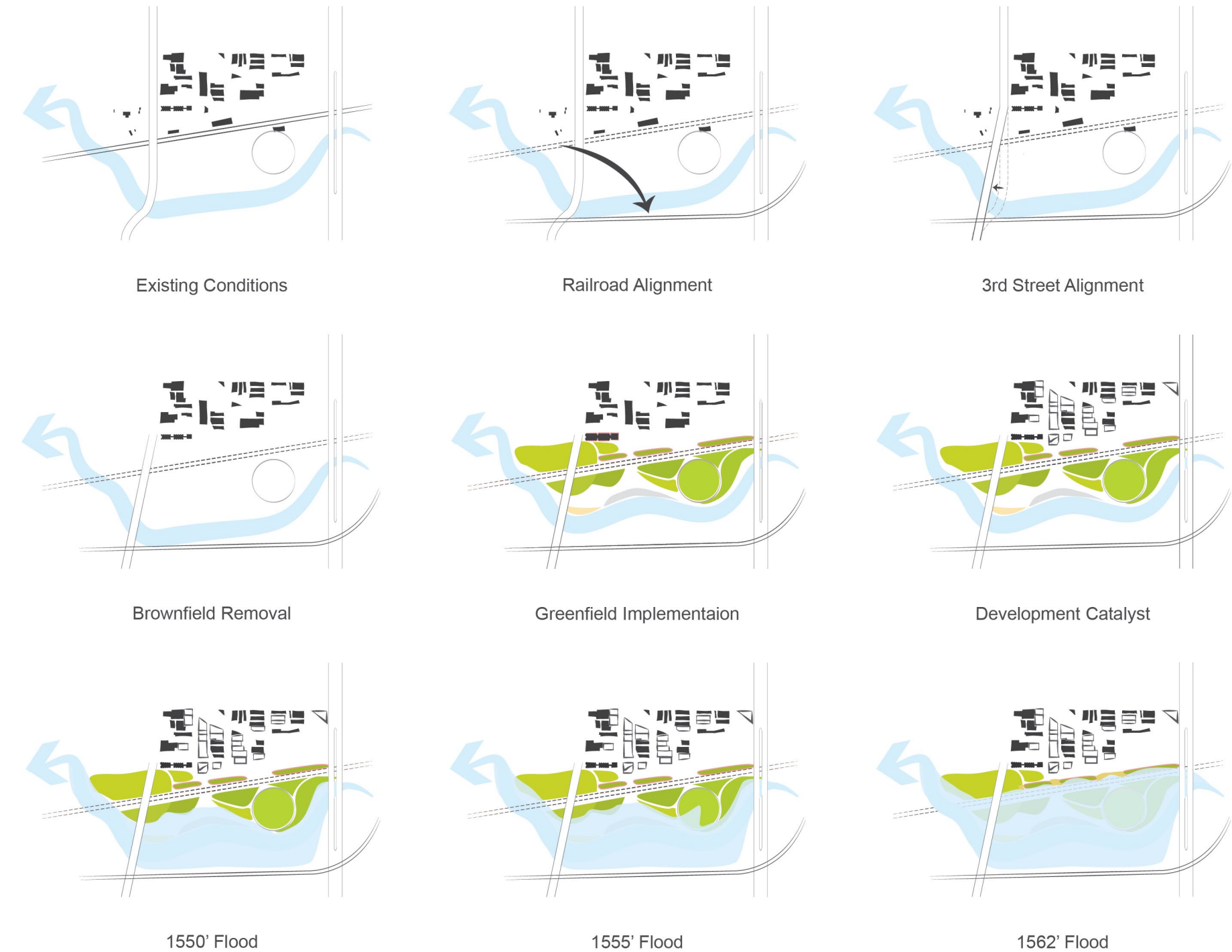
Development Catalyst – Research has proven that public parks and trails directly impact surrounding development by creating a desirable atmosphere to live, work, and play. This project is intended to aid the current revitalization efforts taking place in the downtown, helping to attract new mixed-use developments to the area.

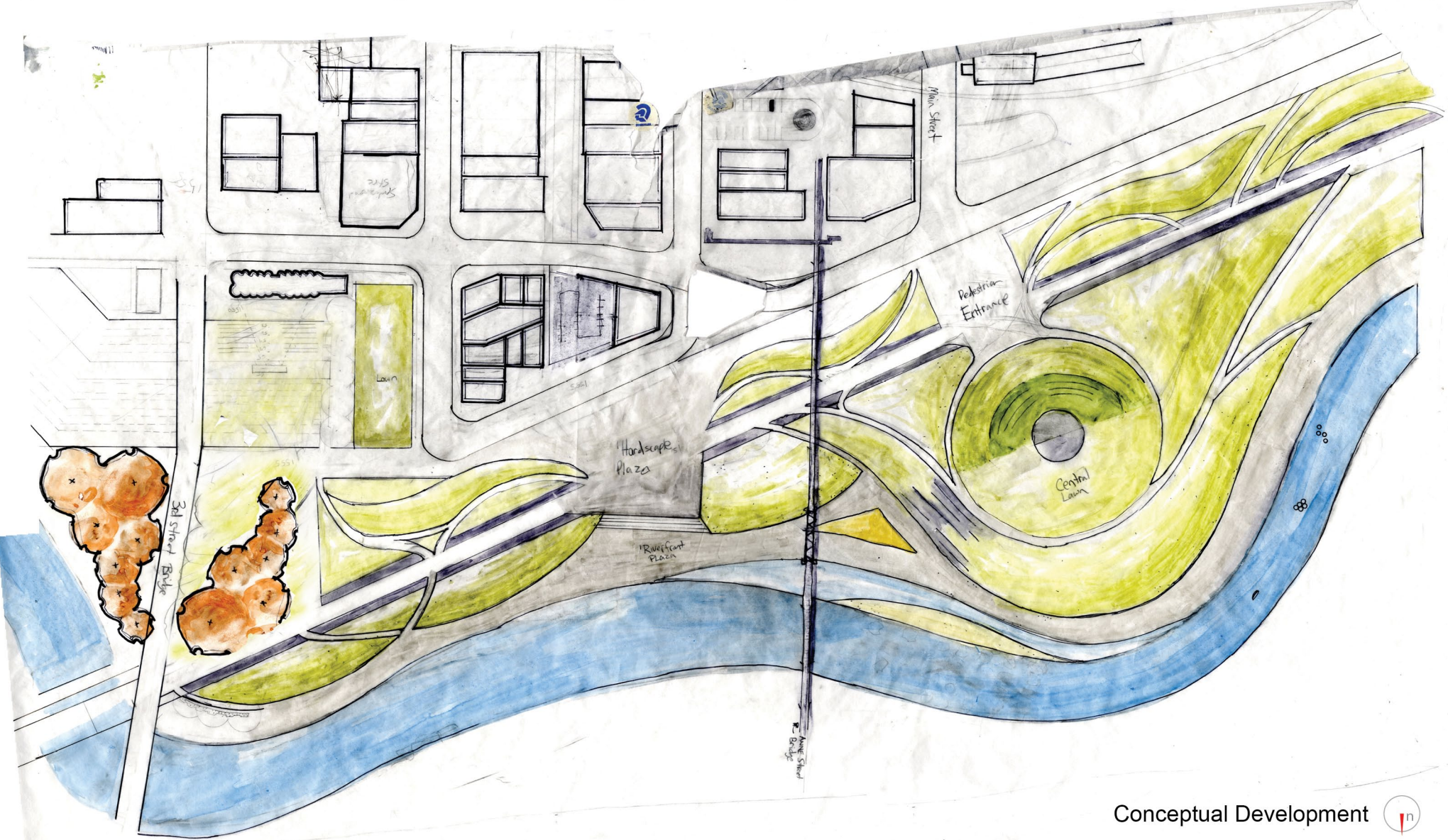
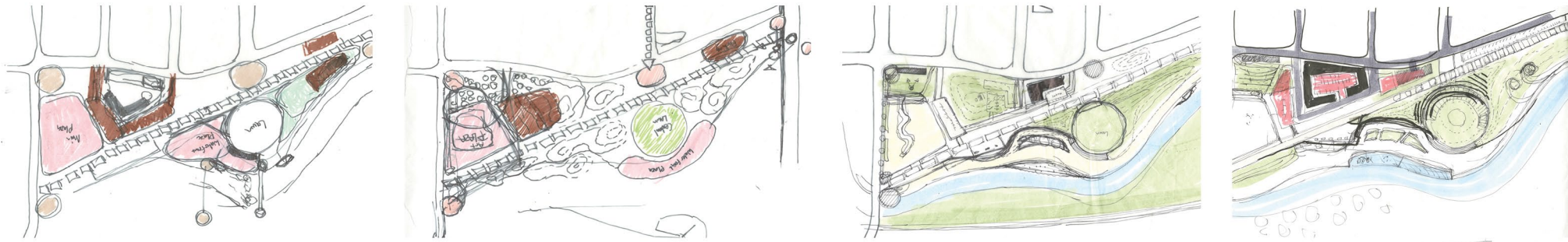
Flooding - Seasonal flooding is a recurring issue for the city of Minot. Since 1881 there have been ten recorded floods, the biggest flood however occurred in June of

2011. During the 2011 flood, the Souris River flowed through Minot's valley for a period of 2 weeks and crested with a surface elevation of 1562' (17 feet above normal river levels).

Subsequent to the 2011 flood, city officials adopted an enhanced flood protection plan consisting of: levees, floodwalls, high flow diversions, and river channel alignments. This proposal fits within the parameters of the adopted flood protection plan and enhances the connectivity between the downtown and riverfront.

Conclusion - This plan proposes a multi-faceted riverfront, which addresses environmental, cultural, and political concerns within the area. The riverfront park creates a downtown amenity, which pays homage to Minot's past and provides a central gathering space for future generations.



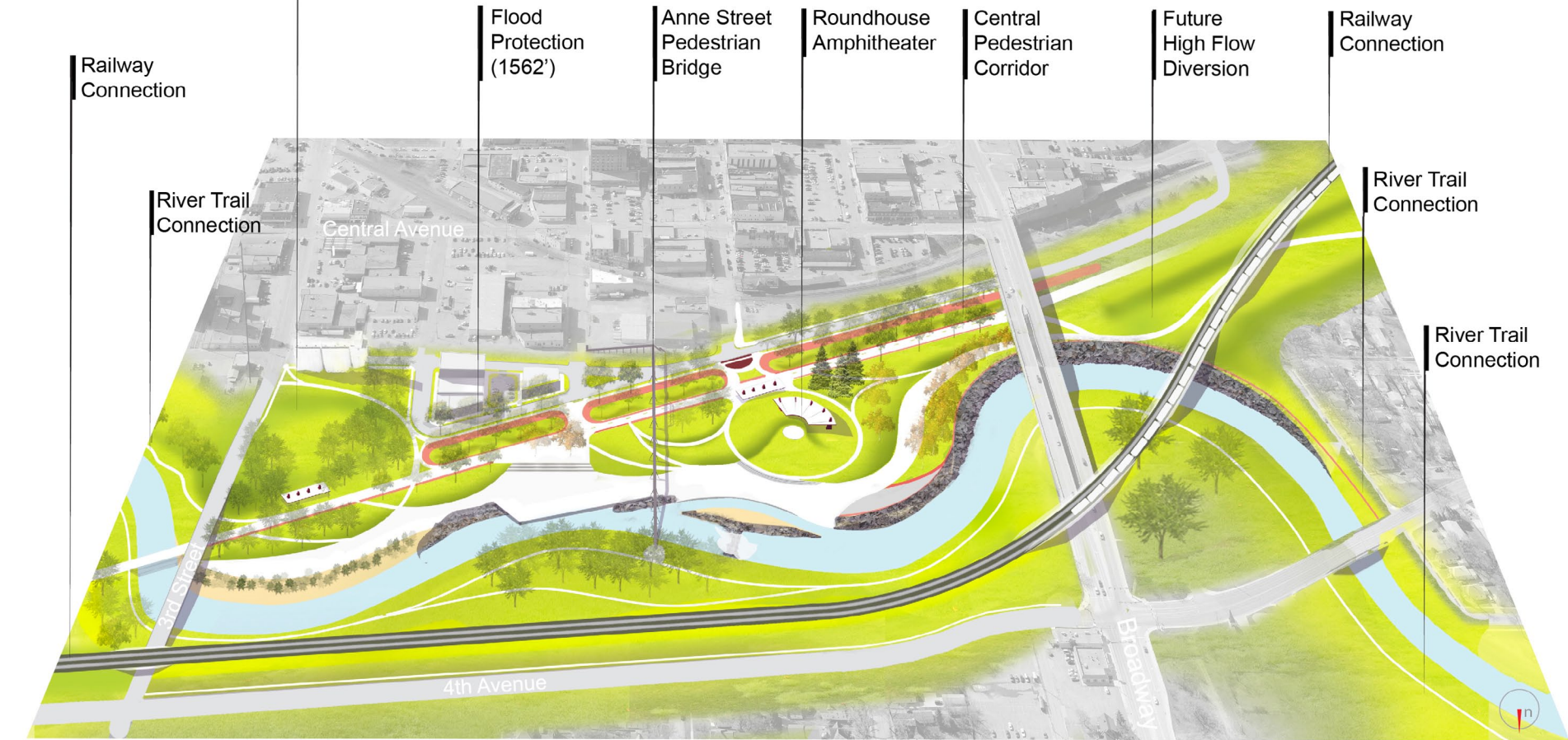


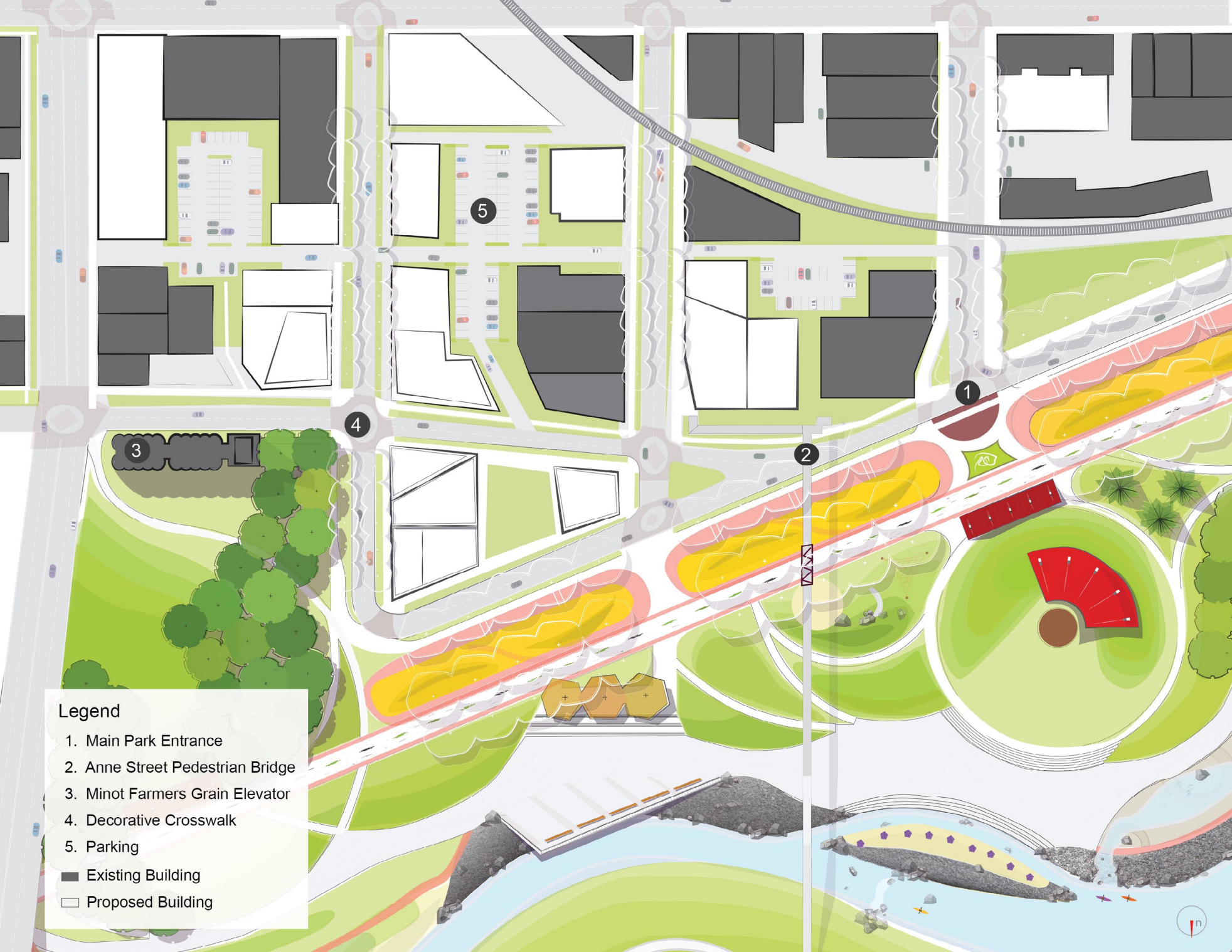
Conceptual Development 



Minot Farmers Grain Elevator

The Minot Farmers Grain Elevator is an iconic structure within the park. The elevator is restored and re-purposed as an outdoor cinema. A 100' projection screen is hung on the north side of the elevator for community "Movie in the Park" nights. Movie viewers are invited to sit on the gently sloping hill north of the elevator.





- Legend**
- 1. Main Park Entrance
 - 2. Anne Street Pedestrian Bridge
 - 3. Minot Farmers Grain Elevator
 - 4. Decorative Crosswalk
 - 5. Parking
 - Existing Building
 - Proposed Building



- Legend**
- Retail
 - Commercial
 - Office
 - Residential
 - Cultural / Entertainment
 - Green Space



- | | | | | | |
|---------------|-------------------------|---------------------------|---------------------------------|---------------------------------|--------------------------|
| Legend | 1. Main Park Entrance | 4. Roundhouse Ampitheater | 7. Splash Pad | 10. Outcropping Wier | 13. Crushed Gravel Path |
| | 2. Public Art Display | 5. Roundhouse Lawn | 8. 6-12" Rip-Rap | 11. Anne Street Bridge | 14. Native Planting |
| | 3. Restroom/Concessions | 6. Riverfront Plaza | 9. Controlled Riverfront Access | 12. Central Pedestrian Corridor | 15. Children's Playscape |



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2011 Flood Report: Response and Recovery

This government document explains the causes of the 2011 and provides raw data such a flow rate, peak river elevation etc.

40 Days -- 40 Nights of Ordeal

This news article provides a timeline of events that occurred through the flood of 1969 in Minot, ND. It includes data on the flood levels, flow rates, and damage done.

After the Flood

This book is a compilation of separate articles written by a group of Professors at the University of Illinois. The book explores six cities located along the Illinois River, ranging is various scale. It provides a brief overview on the Illinois River's history and how it works as a tributary system. Students work with each of the six communities to develop a program for how the river should be managed within the specific town. The students then developed a design for each of the cities using various design approaches.

Commons Park

This article discusses why Commons Park in Denver Colorado is successful. It describes various aspects of the park including the programmed activities and how it successfully connects to the parks surrounding context.

Convivial Urban Spaces

This book explains what contributes to making a convivial urban space. It discusses and analyzes real life examples of public spaces found throughout Europe. I found it especially useful for gaining a better understanding of the importance of well-designed public spaces and how they fit within our society.

Earth: An Introduction to Physical Geology

This book provided me with information about flooding in general. It discussed the different types, causes, and effects of flooding.

Interview with Howard Wank of Wank Associates

Over a telephone interview with Howard Wank, founder of Wank Associates, Howard and I discussed safety concerns when dealing with flooding. Howard provided some insight on what precautions to take when allowing public access to waterfront.

Landscape Architecture

The book provides insight the theory and practice of landscape architecture. The book covers a wide variety of topics, some of which can be applied to this study.

Living with the Red

This compilation of government documents covers information regarding the red river basin including, geographical information, towns within the basin, urban vs. rural flooding and how the basin is managed. The appendix provides detailed information and data on the flow rates of the river and also historical number relating to major flood events. It also suggests alternative ways in managing the Red River Basin.

Making the most of your waterfront: Enhancing waterfronts to revitalize communities

This government-produced document is a guidebook for revitalizing waterfronts to revitalize communities. The guidebook breaks down the waterfront development process step by step. It also provides valuable information on determining if waterfronts will help to revitalize a community.

Minot Rebuilding Dreams

This documentary gives an overview of the 2011 flood that occurred in Minot, ND. It begins by examining the Souris River Basin and describes events that occurred ultimately leading to the flooding of Minot. The documentary goes into detail about the political side of managing the river basin. It also covers the social issues resulting from the flood.

Minot Rebuilding Dreams Update

This video is in sequence with "Minot Rebuilding Dreams" and consists of a sit down interview with Minot's mayor Curt Zimbleman and Lt Col. Kendall Bergmann from the Army Core Engineer, Interview questions cover the topics of the current housing situation, the progress with the flood protection plan, and the politics behind managing the river basin.

Mouse River Facts

This webpage is located on the Minot Recovery Info website and contains a brief yet thorough history of past flooding events that occurred in Minot, ND

Riverscapes: Designing Urban Emabankments

This book explores various planning and riverfront projects of various typologies. It contains around 100 projects that address specific issues in regards to river management and control. Several waterfront park case studies are examined.

Study shows rapid growth from Minot

This new paper article discusses the results of a population study taken by the Impact Assessment Group at North Dakota State University.

Summer Internship with the City of Minot Planning Office

From May 15, 2013 to August 16, 2013, I interned at the City of Minot's Planning office. Through discussions with the city planner, Donna Bye, and the assistant city planner, Zerek Kroll, I gained knowledge of the happenings of Minot. I was provided the chance to sit in on private and public meetings regarding the Downtown Renaissance Zone Project. I was also in attendance of meetings held between the Downtown Steering Committee and Stantec Landscape Architect, John Slack.

Mouse River Enhanced Flood Protection: Preliminary Engineering Report

This document was prepared by Bar engineering, Moore Engineering, Ackermann Estvold Engineering, and CPS Engineering for the North Dakota Sate Water Commission. The document provides valuable information regarding the 2011 flooding event including, data, charts, etc. The document also describes the proposed flood control strategy for the city of Minot.

The Last Hurrah: An Account of Life in the Mouse River Valley, Bone Town, Little Chicago, and the Magic City.

Written by Minot State University professor, Mark Timbrook, The Last Hurrah contains Minot's early history between 1880 and 1930. This book provides detailed information about the creation of the Souris River Valley, the discovery of the valley, and the settlement of the valley. The book also provides stories of hardships that the city of Minot faced such as, flooding, fires, blizzards, and drought. Social, political, and economics are also addressed in great detail. This book will help to understand the regions early history and gives perspective on what life was like the early days of Minot.

Topos: Water Design and Management

This Topos issue on Water Design and Management, explores various alternative ways to design around and with water. It features case studies of various typologies from around the world and explains in detail the different water related issues each region faced. It also contains a plethora of pictures, drawings, maps, and details.

Understanding Floods: Questions and Answers

This publication, done by Queensland Floods and Science, Engineering and Technology panel, provides information on the broader topic of flooding. It explains the fundamental concepts of flooding in simple to understand language. It answers questions such as: What are the factors that contribute to floods? What are the consequences of floods? How do we manage flood risks? Etc.

Urban Flood Risk Analysis

This article is a guide to determining flood protection levels based on digital terrain model and flood spreading model

Waterfronts

This book compiles numerous waterfront case studies. The case studies are broken down into different waterfront categories including; urban waterfronts, cultural waterfronts, environmental waterfronts, historic waterfronts, mixed-use waterfronts, recreational waterfronts, residential waterfronts, and working waterfronts.

Woodriver, Illinois fact Sheet

This document compiles the case studies related to urban flood control alternatives.

Appendix A.

Excerpts from Minot's 2011 Comprehensive Plan.

Produced by: Bonestroo

Do You Believe in Magic? Minot in 2030 - Vision Statement

- Minot is beautiful and prosperous
- Growth is well planned
- Community welcomes new ideas, new people
- Improved transportation
- Downtown Minot is thriving
- Schools are excellent
- Network of parks and open space
- City is clean and green
- Housing for all – affordable and high end



Adopted Goals

- Immediate Goals
- Growth and Development/Land Use
- Land Use - Commercial/Industrial
- Economy
- Housing
- Aesthetics
- Community Facilities

Goal 1: Promote a well-planned community with a balance of land uses while addressing the needs and impacts of expanding services to

Goal 5: Develop and maintain a roadway system that accommodates the safe and efficient movement of

Goal 2: Promote development and redevelopment of downtown Minot so it can continue to be a

Goal 2: Provide a variety of housing types, densities and choices to meet the life cycle housing needs of residents.

Five Key Elements - Minot Master Plan

- 1) Revitalized Downtown 
- 2) Greenway Connections 
- 3) Compact Development 
- 4) Housing Opportunities 
- 5) Transportation 

Five Key Elements - Minot Master Plan

1) Revitalized Downtown



- Keep the "heart" of Minot strong
- Connect downtown to the River and to the Park/Trail system
- Focused redevelopment, especially housing, based on market demand
- Address parking – ramp, surface, street
- Streetscape enhancements

Five Key Elements - Minot Master Plan

2) Greenway Connections



- Protect and enhance drainage corridors
- Provide amenity
- Connect major destinations with biking/walking routes
- Provide active living choices
- Connect wildlife habitat
- Enhance existing streets

Five Key Elements - Minot Master Plan

3) Compact Development



- Continue efficient, economical development pattern
- Provide services near all neighborhoods
- Encourage walking, biking, active living
- Reduce car trips
- Extend infrastructure in a cost-effective, staged plan

Five Key Elements - Minot Master Plan

4) Housing Opportunities



- Ensure life cycle housing opportunities for all
- Encourage compact development to keep housing costs lower
- Look for redevelopment sites
- Provide opportunities for new housing in or near downtown

Five Key Elements - Minot Master Plan

5) Transportation

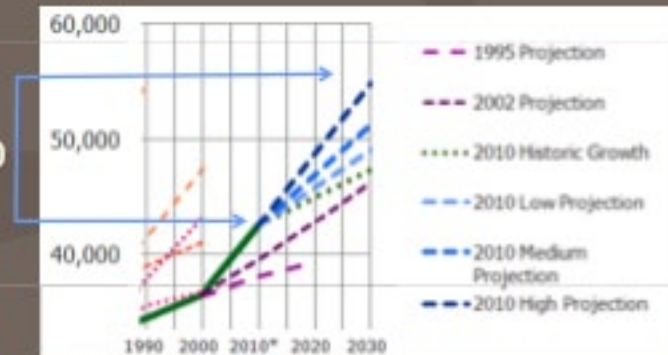


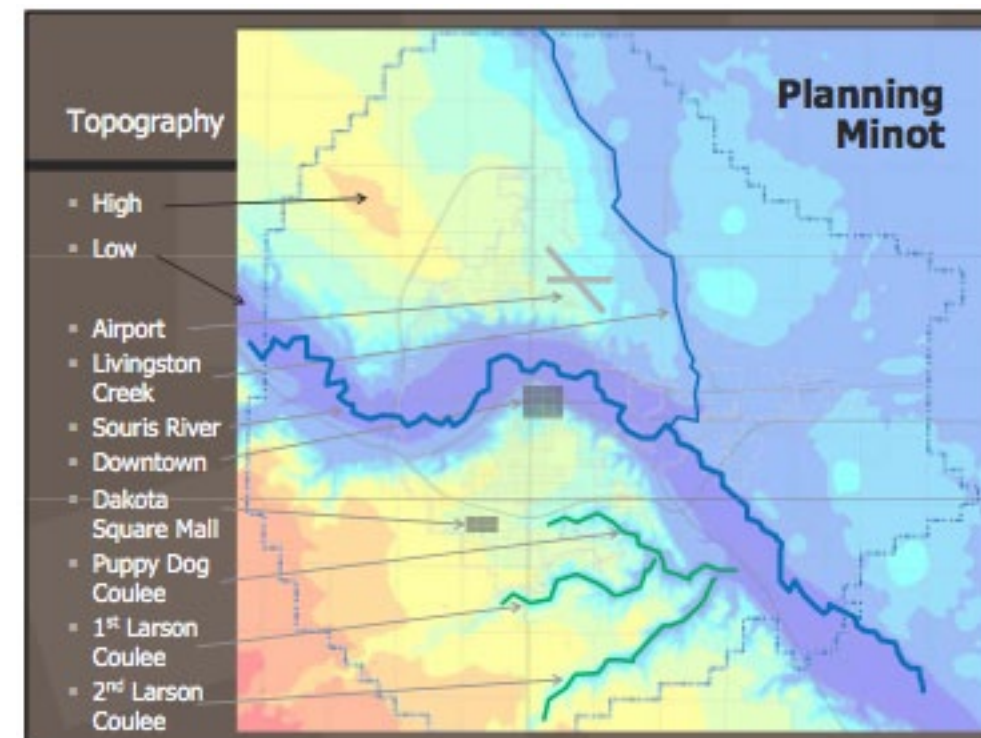
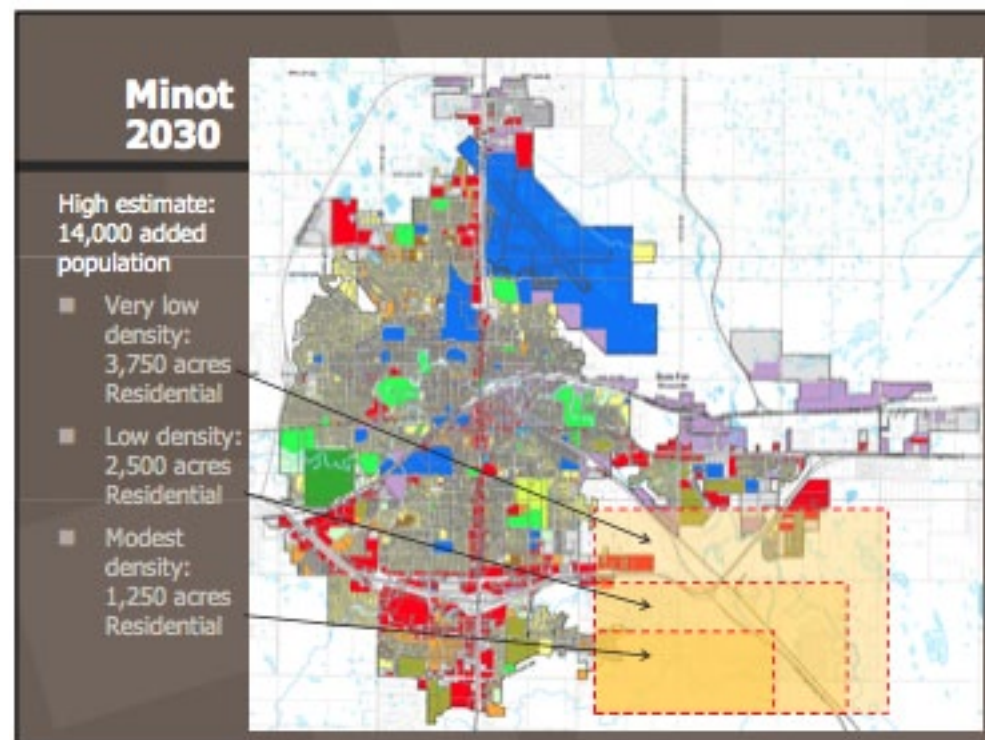
- Develop and maintain a safe, efficient roadway system
- Create a network of connections vs. closed, dead-end streets/plats
- Improve north-south connections
- Integrate pedestrian/bicycle trails
- Provide improved rail crossings or overpasses

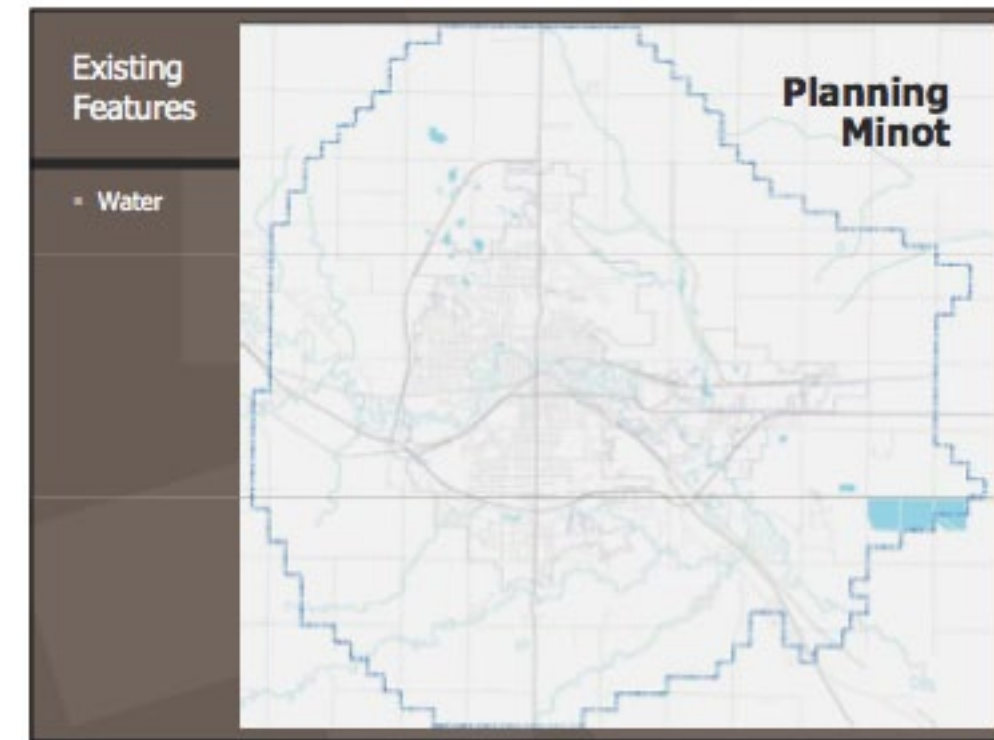
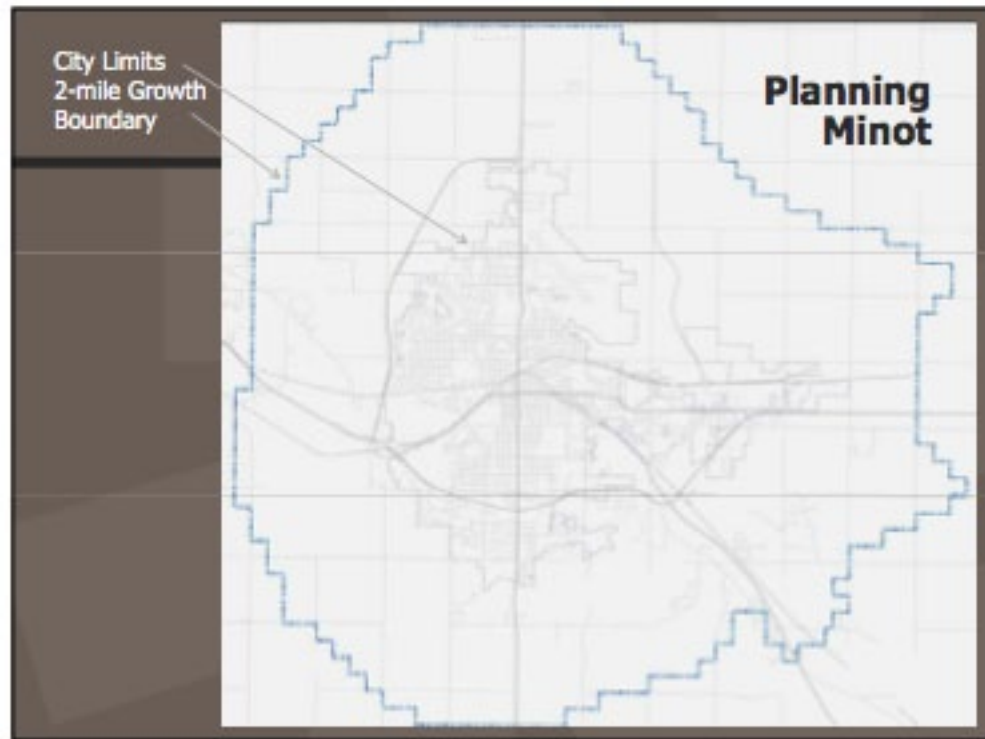
Minot Population Projections

Plan for 14,000 pop. increase in 20 years

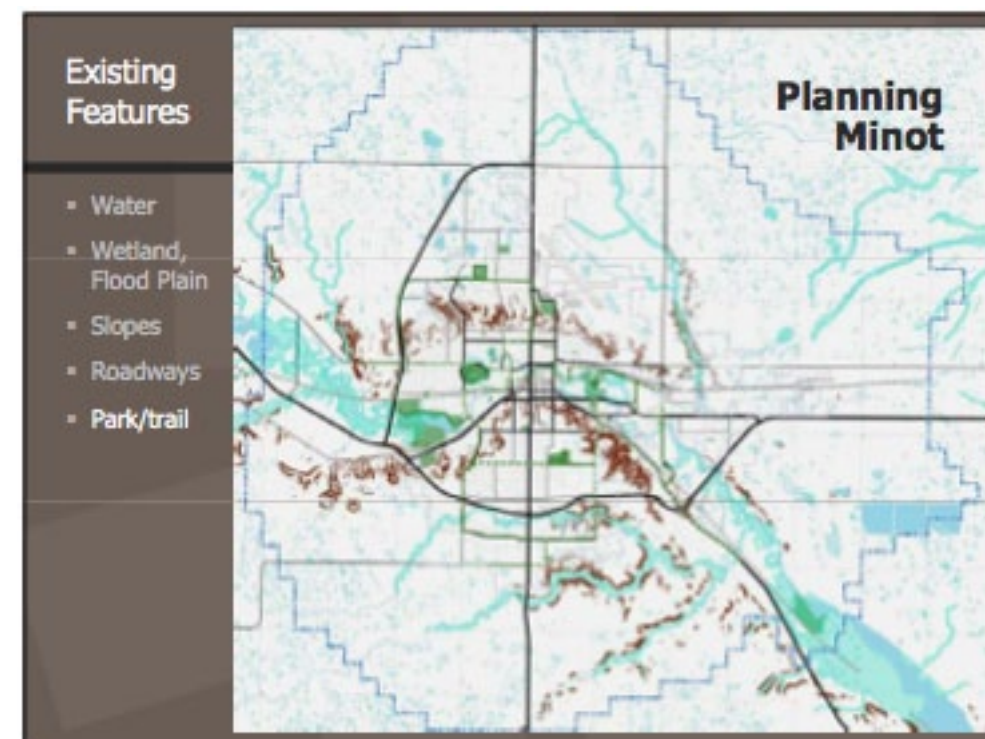
More growth, more quickly as a result of flood damage

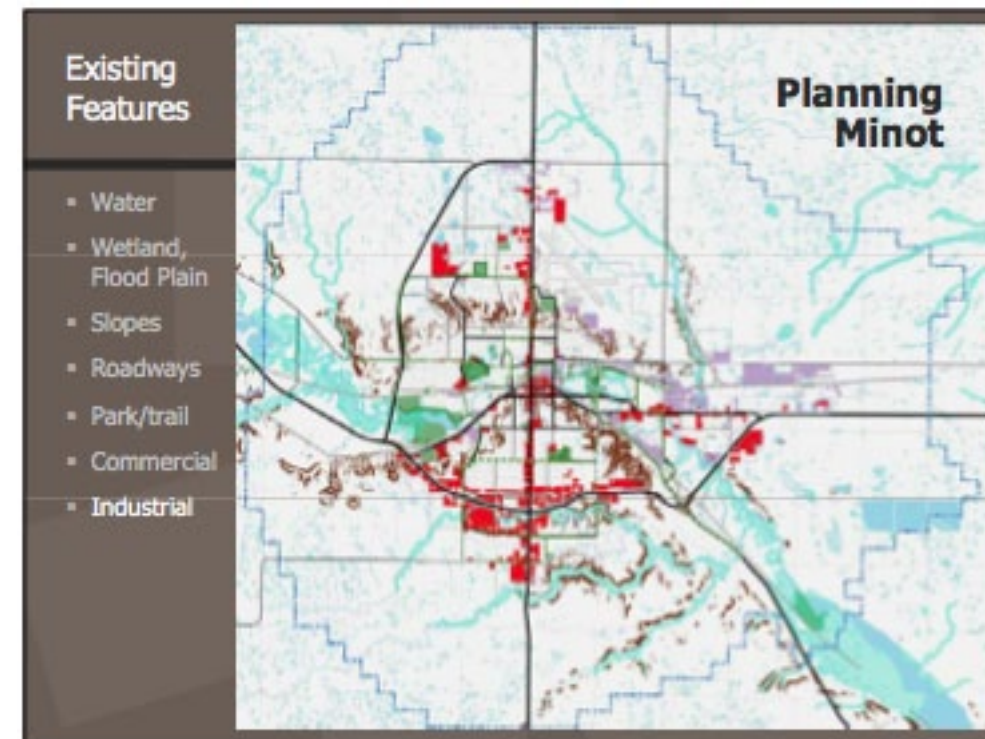
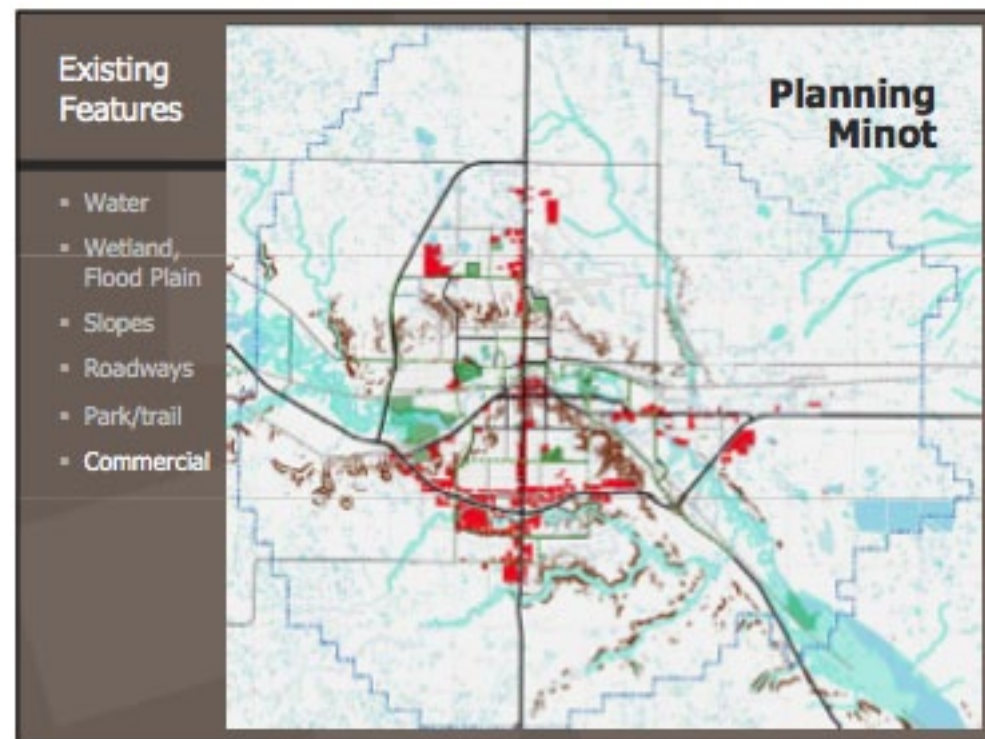


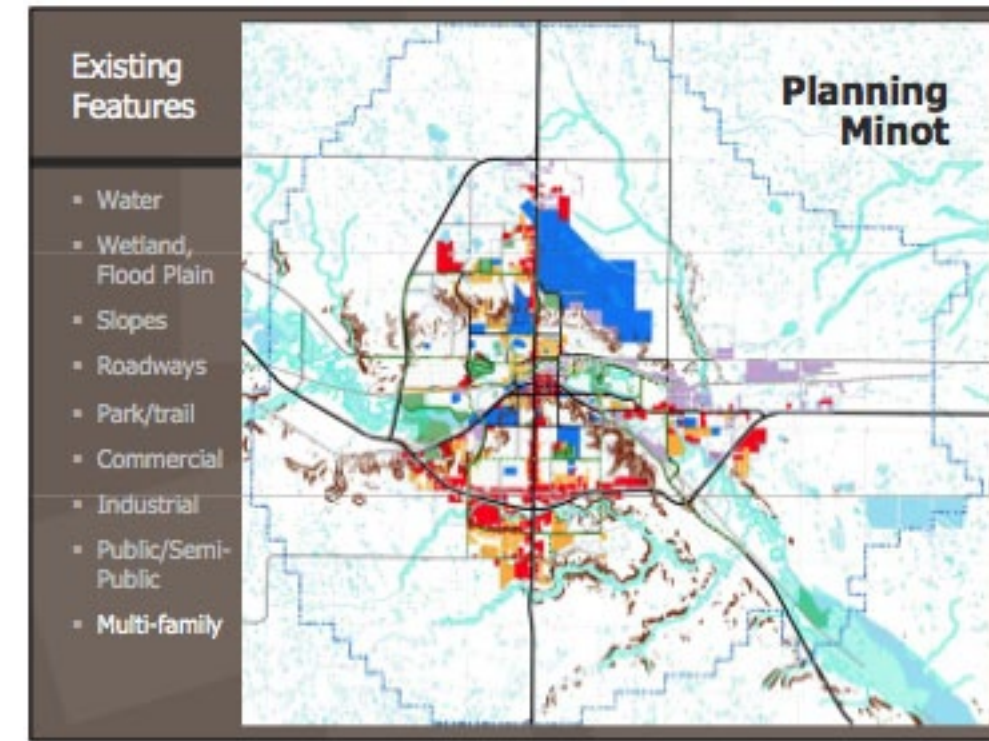
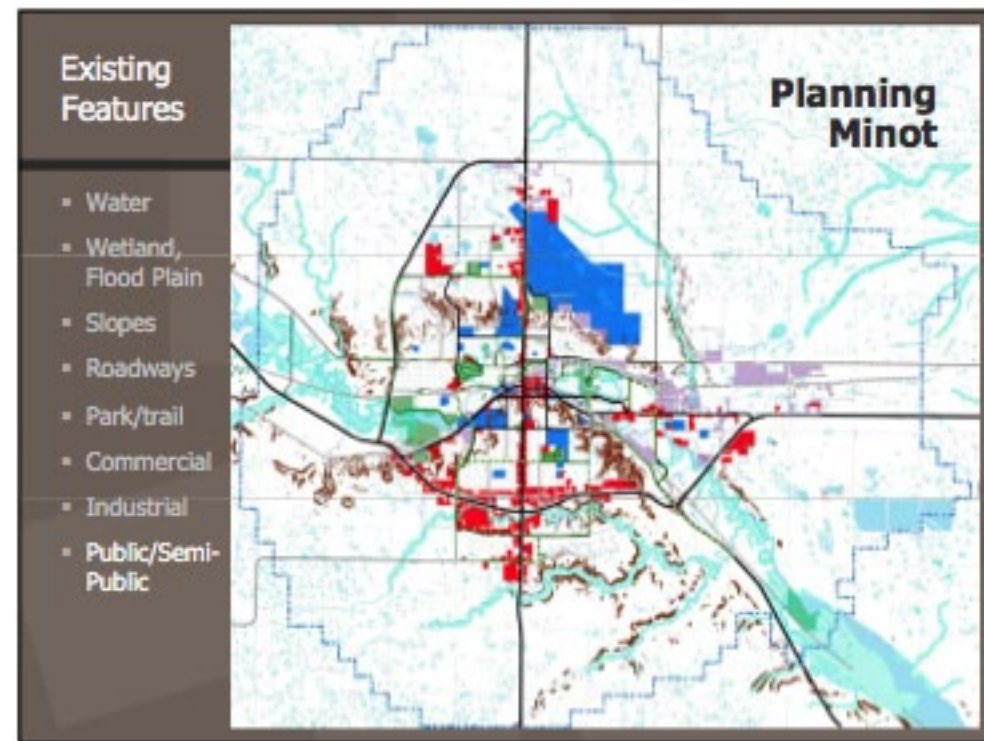


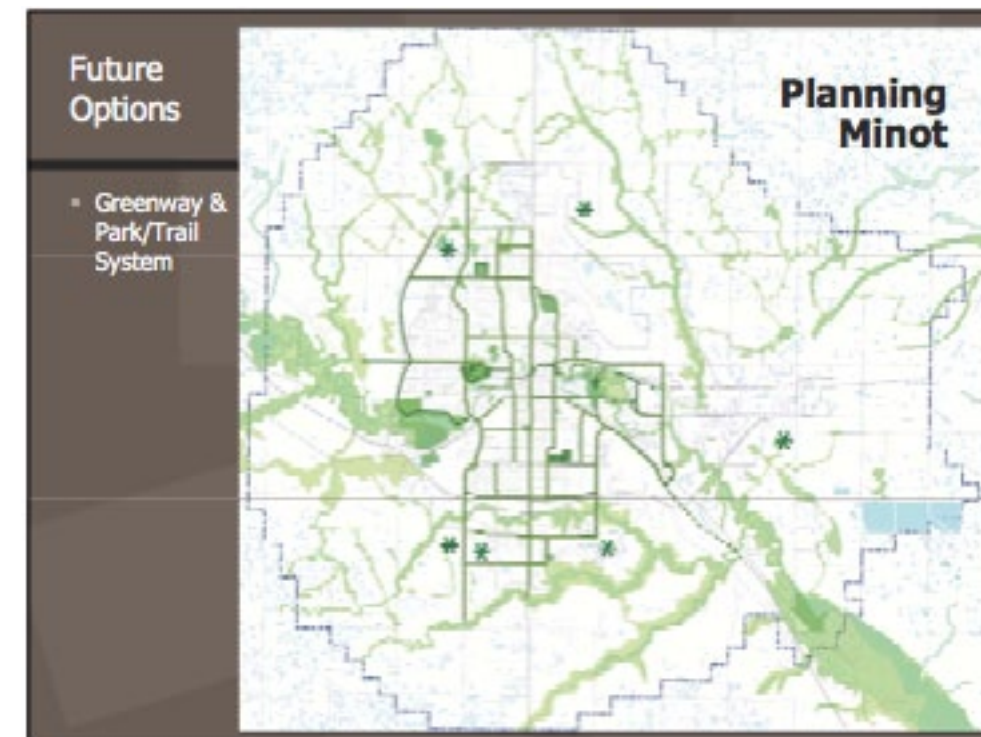
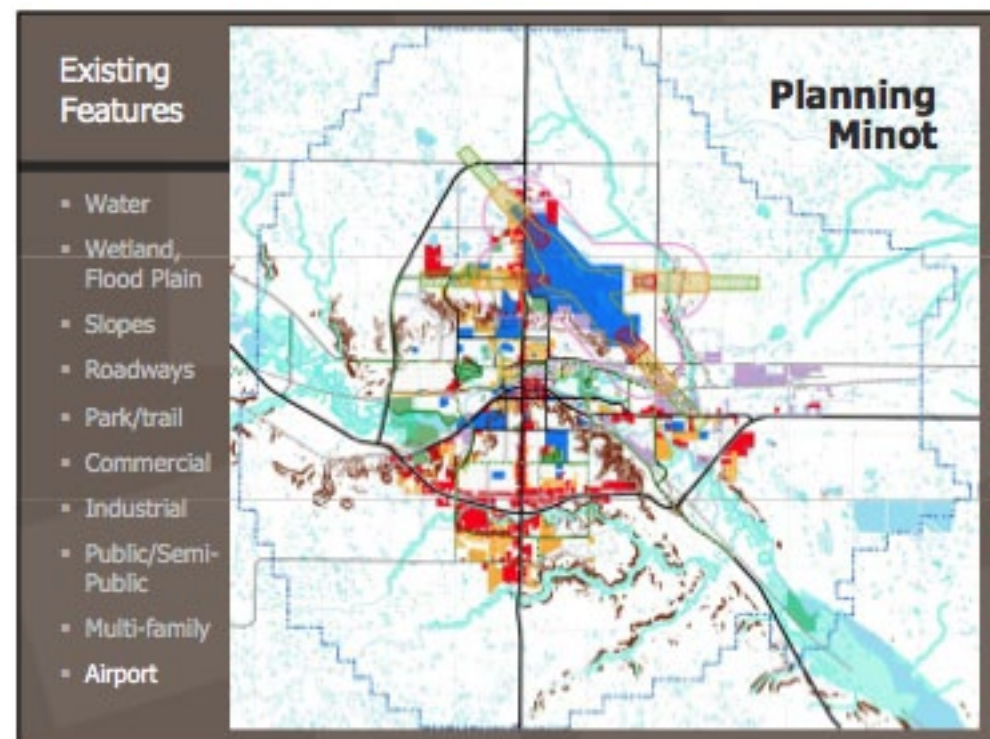


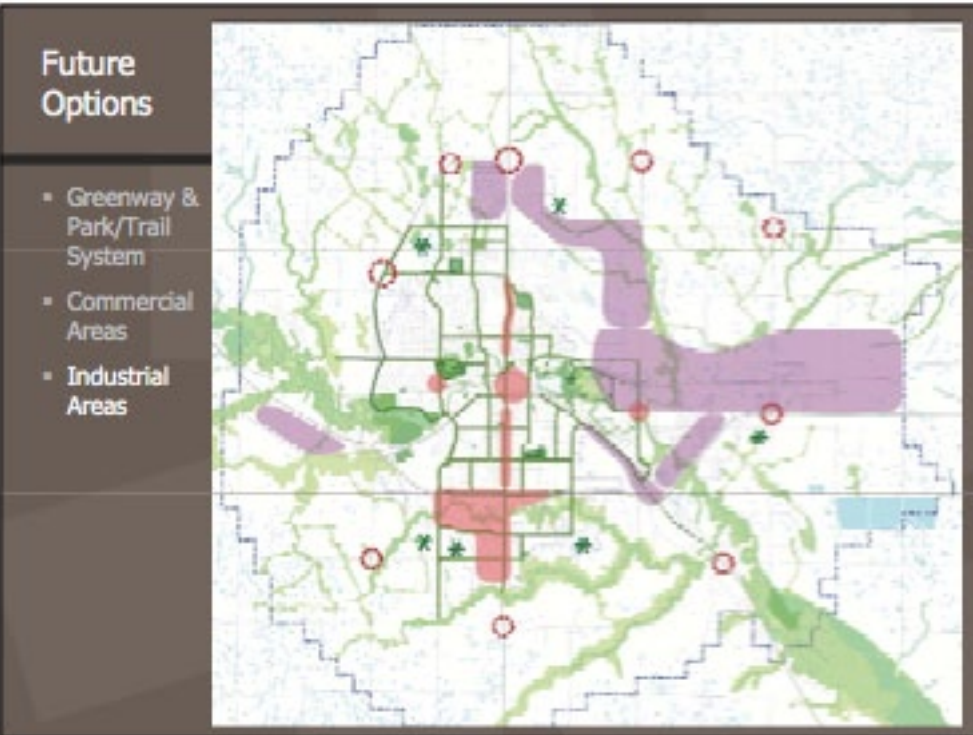
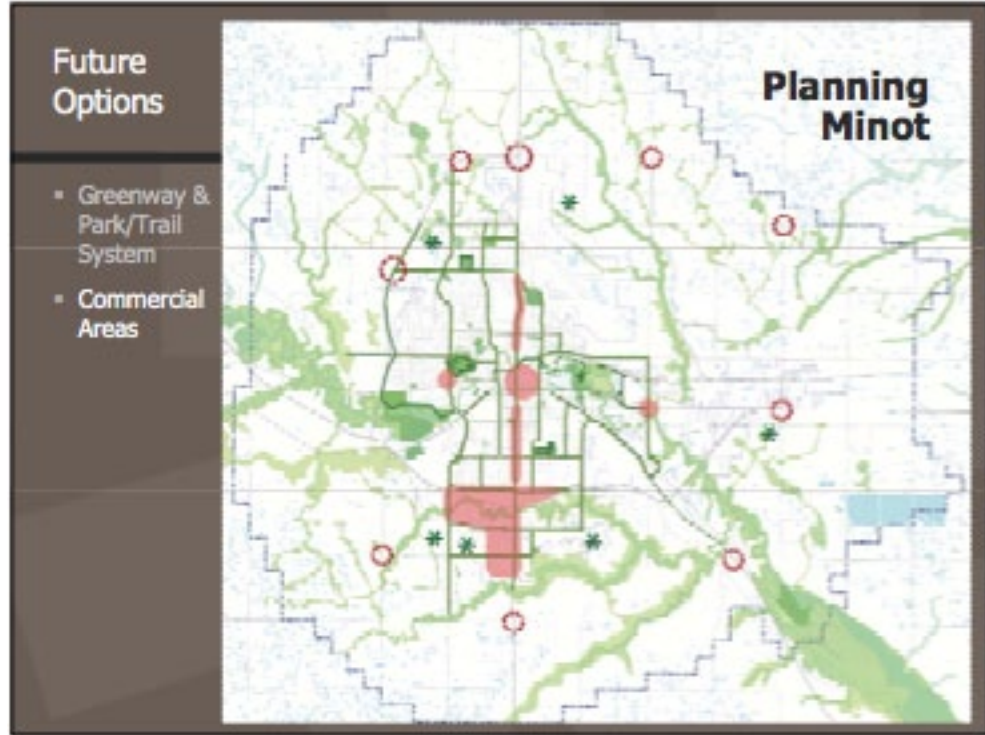


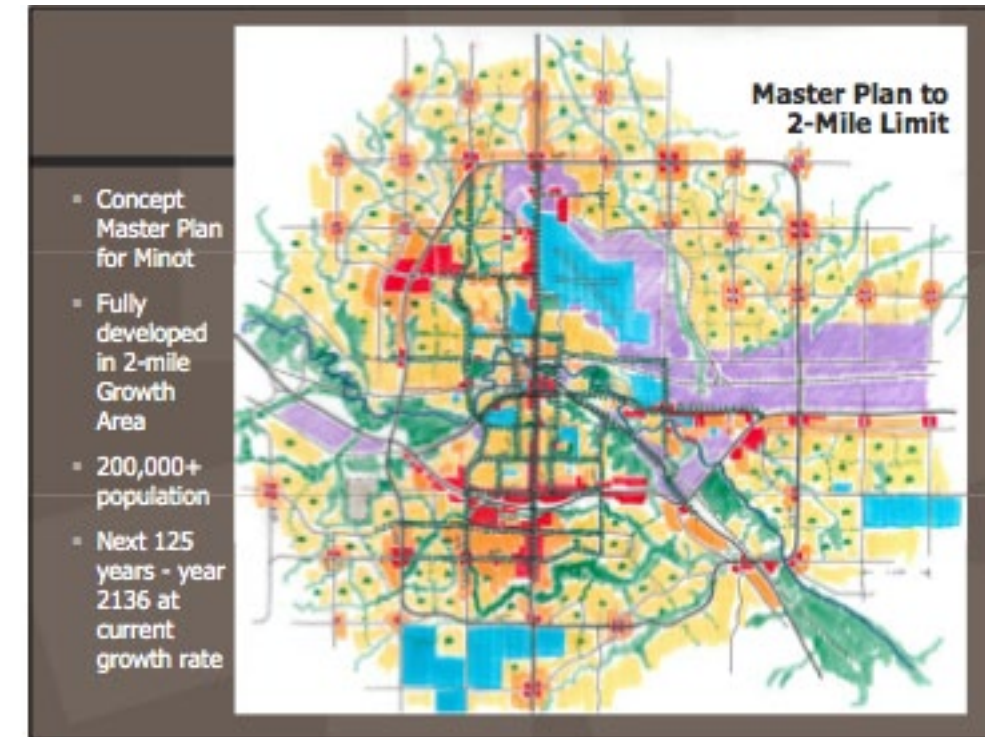
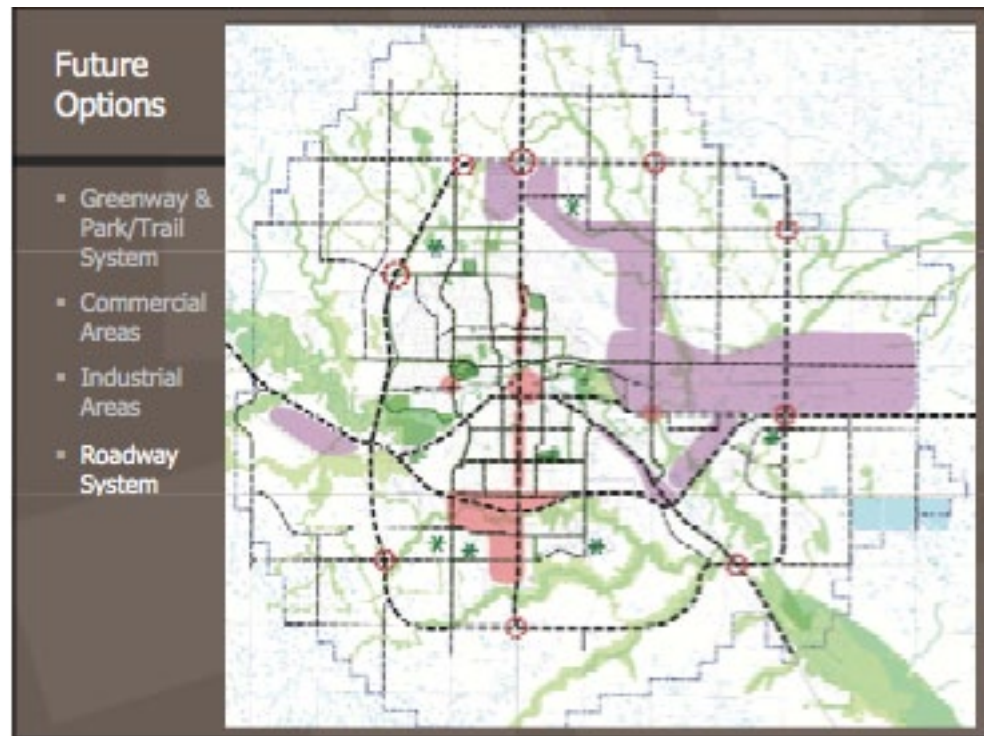


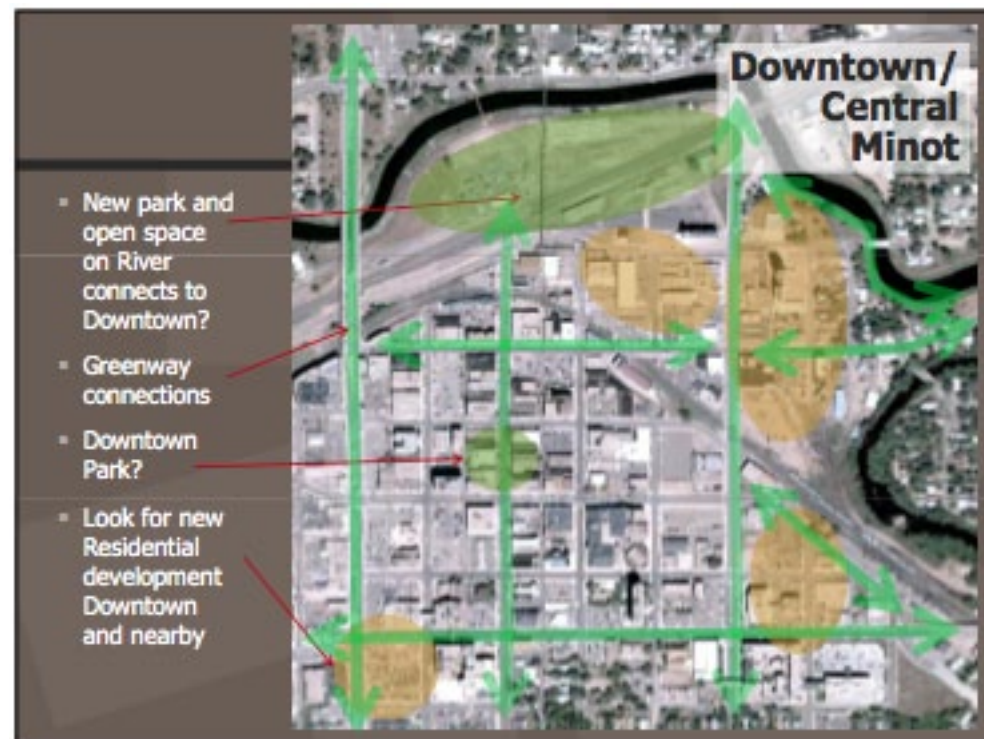












Minot in 2030

- Minot is a beautiful and prosperous city . . .
- Growth has been well planned with careful investments in infrastructure. . .
- The City has taken advantage of a diverse and stable economy . . .
- All in all, Minot has reclaimed the magic of its founders and carried it on to a new generation.



Appendix B.

Urban Analysis of Minot's Downtown.
Produced by: Stantec



