

The Soup Bowl In the City of Lakes



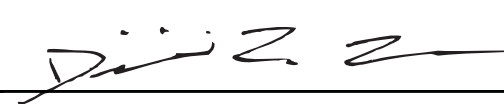
The Soup Bowl

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

By

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



Primary Thesis Advisor



Thesis Committee Chair

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Table of Contents

Section 1. Statment of Intent

Thesis Abstract

Problem Statement

Project Typology

- Claim
- Theoretical Premise/Unifying Idea
- Project Justification

Section 2. Thesis Proposal

Narrative

User /Client Description

Major Project Elements

Site Information

Project Emphasis

A Plan for Proceeding

Section 3. Thesis Program

Research Results & Goals

- Unifying Idea Research
- Typology Research
- Historical Research

Thesis Goals

Site Inventory & Analysis

Conceptual Work

Final Design

Discussion and Limitations

Conclusion

Previous Studio Experience

Reference List

Personal Identification

Appendix

Section 1.

Statement of Intent

Statement of Intent

Abstract:

Minneapolis residents value parks for many contributions to the public realm – as a green escape from the city, as opportunities for recreation, as places to gather – but few people think of parks as infrastructure, as landscapes that do work. Indeed many of the functional aspects of park landscape are often hidden from sight underground, behind walls, or behind rolling earthworks made to function as walls; stormwater infrastructure is a prime example of this. Current stormwater systems focus on moving water as quickly, and covertly as possible, creating a disconnect in the public conscious between the water that rolls off their property, and the degradation of lakes and rivers. This is as true for parks as it is for any other property. While parks are, on the surface natural “green spaces”, they are in fact connected to the same problematic system.

However, over the past century, the idea of park landscapes as a marriage of engineering, social, and ecological functions has begun to gain traction. Landscapes which incorporate infrastructure into park programs are often referred to as high performance landscapes. One area where this marriage has become increasingly popular is the management of storm water (LSWMP, 2006, p.13). While the idea of layering storm water solutions with recreational uses is not new, it has in recent years become increasingly popular. As increased development in American cities has turned the public and political eye toward more sustainable infrastructure. The focus of this proposal will be to explore the integration of green infrastructure into the program of Lyndale Farmstead, a historic neighborhood park in Minneapolis.

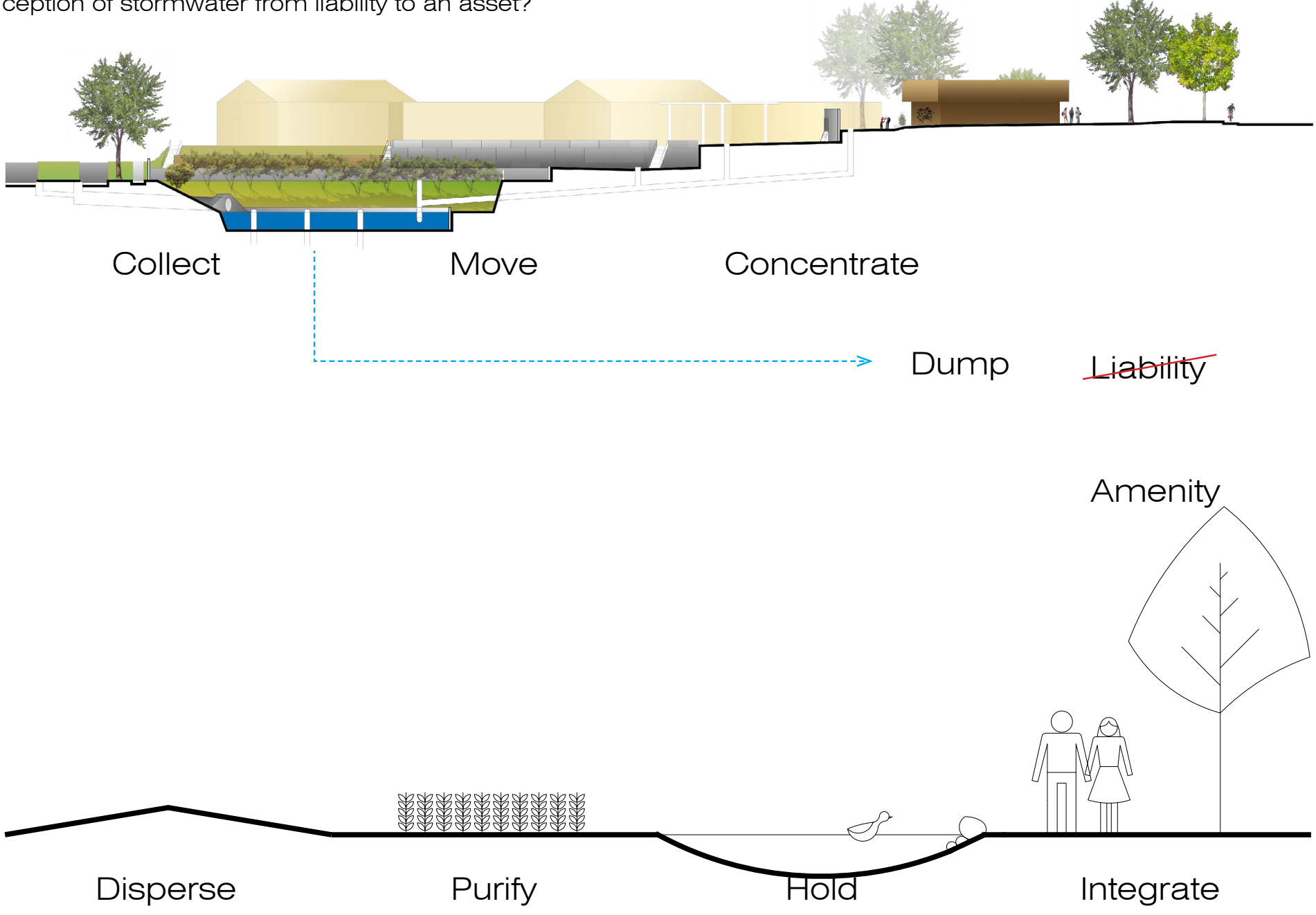
Key Words: Green Infrastructure, High Performance Landscapes, Minneapolis Parks, Historic Neighborhood Parks

Problem Statement:

How can the integration of green infrastructure, into a historic neighborhood park, transform the communities perception of stormwater from liability to an asset?

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Statement of Intent

Project Typology:

- Green Infrastructure
- Historic Neighborhood Parks

Definitions:

Green Stormwater Infrastructure (G.I.)

US EPA:

“Green infrastructure is an approach to wet weather management that is cost-effective, sustainable, and environmentally friendly. Green Infrastructure management approaches and technologies infiltrate, evapotranspire, capture and reuse stormwater to maintain or restore natural hydrologies.”

and in glossary...”An adaptable term used to describe an array of products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services.

American Society of Landscape Architects:

“Green infrastructure can be considered a conceptual framework for understanding the ‘valuable services nature provides the human environment.’ At the national or regional level, interconnected networks of park systems and wildlife corridors preserve ecological function and create a balance between built and natural environments. At the urban level, parks and urban forestry are central to reducing energy usage costs and creating clean, temperate air. Lastly, green roofs, walls, and other techniques within or on buildings bring a range of benefits, including reduced energy consumption and dramatically decreased stormwater runoff. At all scales, green infrastructure provides real ecological, economic, and social benefits.”

High Performance Landscapes:

Working Definition:

landscapes which make an efficient use of a given physical space by layering cultural, and biological functions.

Claim:

The Minneapolis park system is linked to the city's unique water resources (lakes, rivers, wetlands). The viability of these resources is being undermined by a variety of unsustainable practices, current stormwater management practices i.e. gray infrastructure. The field of landscape architecture is well suited to develop a solution which heals the physical/biological environment, while enriching socio-cultural dimensions.

Statement of Intent

Theoretical Premise | Unifying Idea:

This project explores how green infrastructure, when integrated into a historic park, can reframe a community's perception of stormwater; transforming it from a liability to an amenity.

Project Justification:

Physical and Biological Environment

This project will expose stormwater issues to park and integrate it into the parks program, this project will create a further change within the surrounding community. By juxtaposing the preexistent stormwater pond with

Ultimately the goal of this project is to expose the east Harriet community to various forms of green infrastructure and encourage them to employ similar systems in their homes and businesses. Expose park users to the topic of stormwater management, and show the advantages of well integrated green infrastructure over single purpose gray infrastructure.

Section 2.

Thesis Proposal

Thesis Proposal

Narrative:

The idea for a stormwater project at Lyndale Farmstead came from my experience there as a maintenance worker over the summer. While working there, I became well acquainted with the every nook and cranny of the park. The park area, the service center, and the historic superintendent’s house were all part of my daily duties, but realized I had no idea what happened inside the fenced-off detention pond. How did it work? Where did the water come from? Where did it go? I began to realize that in 7 summers at the parks, and as a landscape architecture student, . And if I didn’t know, it was likely the residents, and workers in this area hadn’t even considered it. It has since dawned on me that this act of hiding, and the social ignorance it produces, happens throughout our entire stormwater system. We all see water going down the storm-drain, but never think about where it’s going. We all enjoy the lakes and rivers, but never think about where the water comes from. As a student of landscape architecture I see our field as being uniquely qualified to highlight this issue, using a holistic approach to heal the physical/biological environment, while enriching the socio-cultural dimension.

Primary Users:

Local Residents

Seniors: 55 +

Adults: 18 +

Children under 18:

Secondary Users:

Park Board Employees

Administration: Superintendent, foreman, crew leaders

Laborers: Trades (carpenter, mechanics, painters, cement, plumbers, maintenance, forestry, environmental)

Client:

Primary

Public Works – Surface Water and Sewers:

The department is charged with planning, constructing, and maintaining stormwater infrastructure, and receives the funding to do so. Funding is largely generated by charging stormwater utility fees, a practice which generated \$50.6 million in 2012. (SWMP, 2012)

Secondary

Minneapolis Park and Recreation Board:

The department is charged with monitoring, and maintaining (the banks of rivers, and lakes within the city), and educating residents about the effects of runoff. The Park Board receives considerably less funding, and thus outreach activities are their general purview. According to City Water Resources Administrator Lois Eberhart, “The park board has had somewhat of a mixed devotion to improving stormwater infrastructure. They don’t want to do stormwater projects at the expense of recreation.”

The MPRB receives money for stormwater projects mainly from reimbursement of city stormwater utility fees, which generated \$270,000 in 2012 (SWMP, 2012); compared to a \$50.6 million budget for city stormwater activities.

Thesis Proposal

Major Project Elements:

Demonstration Areas

Exposing the process of urban hydrology, to both park board and public users is an important goal for this project. Demonstration areas will include activities, and written information about the stormwater process. Demonstration areas types will include: kids activity area, viewing and information close to detention ponds and gardens, etc.

Stormwater Pond

Portions of the site will provide stormwater for this pond. The pond will allow suspended solids to settle out, while also allowing heat to dissipate. The water can then provide a pleasing water feature, and be pumped to other areas for landscape use. The performance of this installation will be monitored by the environmental department - who's office is located on site.

Extensive Green Roof

A green roof will be used to minimize runoff from the service center building. The roof media and vegetation will hold part of the roof water, the remainder will be stored in a large cistern.

Community Gardens

A community garden will provide a healthy food option as there are none in the area. Garden plots will be irrigated using water stored in the service center cistern.

Dog Park Expansion

This area will include a large open area for dogs to run and a shelter for owners
Also included: minimal parking, stormwater filtration area to manage phosphorus and nitrogen from dog waste.

Thesis Proposal

Orientation:

Lyndale Farmstead is a historic 18 acer neighborhood park/maintenance center in Minneapolis Minnesota . The site is located in south west Minneapolis, in the East Harriet Neighborhood, near lake Harriet and adjacent to Lakewood Cemetery at 38th Street South west and Bryant avenue. The site is near the Chain of Lakes which includes: Cedar, Isles, Calhoun, and Harriet. A 13.3 mi bike paths encircles the chain, and is part of the larger Grand Rounds Scenic Byway - a 50 mi path network around the entire city.



Image 1. Minnesota and Surrounding States

Image 2. Minneapolis and Landmarks



Image 3. Site and Local Context

Thesis Proposal

Project Emphasis:

This project focuses on the integrating green infrastructure into a historical neighborhood park. To accomplish this, inventory and analysis will focus on identifying areas of historical significance, existing park conditions and uses, and developing a knowledge of existing stormwater infrastructure.

A Plan for Proceeding:

Section 3.

Thesis Program

Research Results

Theoretical Premise Research:

As issues of sustainability such as global climate change, clean water, and further environmental degradation become increasingly visible, green solutions to stormwater infrastructure, such as vegetated/green roofs (Clark, C, 2008), and green parking-lots (Industrial Economics Inc., 2007) have become increasingly popular on a global scale. These green solutions have potential to bring a wide variety of social and ecological benefits. Some of the social benefits often associated with green infrastructure include increased recreation space, improved aesthetics, decreased noise pollution, lessened Urban Heat Island Effect, and opportunities to educate the public about sustainability issues and solutions (Design Trust for Public Space, 2010). Purported environmental benefits include reduced runoff, lake and river pollution, and flooding related to stormwater; also, reduced atmospheric CO2, energy use, and habitat creation/improvement (Center for Neighborhood Technology, 2012). In the United States, cities such as Portland, Chicago, and New York – who have consistently lead the nation in sustainability efforts ranging from public transit to urban density – are taking a serious look at in green infrastructure.

PlaNYC is New York’s comprehensive long-term sustainability agenda, containing 127 initiatives including improvements to transportation, housing, open space, brown field redevelopment, water, energy, and air quality (Design Trust for Public Space, 2010). This document has resulted in the construction and monitoring of various green infrastructure projects.

Printers Park Playground for instance (a 1.3 acre park in the Bronx) has been redesigned according to better manage stormwater according to best management practices. The green infrastructure features used on this site include 3’ of soil which was replaced with stabilization geo-textile, clean fill, and topsoil specifically designed for permeability. In addition to handling runoff, the re-designed park also provides an opportunity for public education by making the hydrology visible. Water that does not infiltrate immediately into the playground material moves across a swale topped with granite cobbles which allows it to infiltrate in soil planted with Ginkgo trees. PlaNYC, and the sub-document High Performance Landscape Guidelines: 21st Century Parks for NYC refer to designs of this type, which layer ecological, and social functions as high performance landscapes (HPL’s) (2010).

In Illinois, the City of Chicago has installed a 38,000 square foot green roof on top of city hall. The project had to primary goals: 1.) To remediation urban heat island effect – a phenomenon in which the temperature of urban areas is higher than surrounding areas (Climate Protection Partnership 2010) 2.) To provide a living lab for future green roofs in the city of Chicago. City hall acts as a case study to allow research and monitoring of various green roof systems, energy saving benefits, and vegetation success rates. The roof employs three types of soil systems, one that is entirely extensive with 4 inches of soil, a semi-intensive system with 6 inches of soil, and a fully intensive

system with 18 inches of soil. Although most green roofs contain only sedums and low grass, Chicago City Hall has over 100 species of plants, allowing for a broader range of testing. Plants such as native prairie and woodland grasses, hardy ornamental perennials/grasses, and native ornamental shrubs are arranged according to bloom color and appropriate soil system. As part of the research component, many of the plants are contained within two or more soil systems to monitor progress. Preliminary figures of the City Hall green roof estimate cooling savings of 9,270 kilowatthours per year, and additional heating savings of 740 million British Thermal Units per year (Climate Protection Partnership 2010).

In Little Rock Arkansans, Heifer international headquarters includes a 130,000 square foot green parking-lot. The companies goal was to design a parking-lot that could handle large amounts of traffic while not contributing to environmental degradation such as polluted streams, CO2 emissions, and Heat Island Effect (Industrial Economics, Inc. 2007). To accomplish this, the green lot uses a variety of low impact techniques such as minimizing the amount impervious surface, using bioswales, and wetlands to manage runoff, and planting native vegetation which is irrigated by stormwater. Between raingarden infiltration, subsurface detention, and wetlands the site can hold and manage just shy of 4 million gallons of water (Industrial Economics, Inc. 2007). Further investigation of this site will be covered later in this document.

While these cases are contributing to a growing body of data about green infrastructure, the added cost of materials and construction of green infrastructure (the initial cost gap) remains a deterrent for many potential investors (Clark,Talbot, Adriaens 2008). Notably, all of the projects listed above received grants, and or subsidies in order to be constructed. For example, Chicago City Hall’s 2.5 million dollar green roof was paid for out of a \$100 million “fund for the future” allocation. The fund was set up as part of a 1.1 billion dollar settlement between the city and it’s electric utility Commonwealth Edison (MN Green Roofs Council, 2012). While this type of financing is to be expected in the infancy of any new technology, the current economic climate makes economic predictability a make or break issue in the decision making processes of many American municipalities (Center for Neighborhood Technologies).

There are a variety of issues which make it difficult to accurately quantify and predict the monetary return on investment of green infrastructure. One obstacle to private investment is that green infrastructure, unlike conventional single-use infrastructure is a holistic approach (Center for Neighborhood technology), often providing benefits that extend beyond the owners or the project footprint. This holistic consideration endows green infrastructure with it’s added benefits, but also makes these benefits hard to quantify, and monetize (Center for Neighborhood Technology). For example, a green parking-lot which manages runoff, provides wildlife habitat, and educates the public undoubtedly

Research Results

Theoretical Premise Research:

does more than a conventional parking-lot which simply holds cars, and flushes water to the nearest river/lake; but many of the added benefits – such as wildlife habitat, and public education – are hard to assign a dollar amount. And even in situations where benefits are accurately quantified, they are not all directed toward the property owner – who payed for the project. Thus, green infrastructure’s added benefits are not always helpful in offsetting the initial cost gap.

Conversely, public investment is perfectly suited to provide these kinds of community benefits. However, even when it is desirable to produce benefits for the communal good, the dynamic nature of green infrastructure makes it difficult to measure its added benefits; as the cost, durability, and performance vary greatly in different settings. While there is a growing body of research regarding the performance of green infrastrucutre, many techniques are still relatively young and unproven (Center for Neighborhood Technology, 2010). And, as Doctor Forester Ndubisi (2012) notes,

“When quantifiable and objective data about how the landscape performs is not readily available, the quality and effectiveness of decisions made by those who impact policies, programs, investments, and land development decisions that affect sustainability are, at best questionable, and arguably, unsustainable.”

Economic viability can be seen as important a component of sustainable practice as ecological and social improvements. without further research, and data about green infrastructure performance In further discussion, Ndubisi (2012) notes that while sustainable building standards – such as LEED – have gained increasing visibility, research and development of similar landscape performance standards are lacking.

To develop such standards, some municipalities have begun conducting their own research. In 2008, The City of Portland’s Bureau of Environmental Service released a Cost Benefit Evaluation of Ecoroofs. The release documents the research and findings of a various green roof policies such as a 2005 resolution which requires all city owned buildings to be roofed or re-roofed with ecoroofs when possible (Bureau of Environmental Services, 2008). The evaluation calculates the monetary benefits of 40,000 square foot ecoroof to private owners and to the public over the predicted 40 year life span. The study calculates benefits for a private owner based on the value of avoided costs including stormwater management, heating and cooling costs, roof replacement costs and HVAC equipment sizing costs; and concludes that the net value of of these is \$404,000. The study calculates the public benefit of an ecoroof based on reduced stormwater, system improvements and O&M costs, carbon reduction, improved air quality, and habitat creation; and concludes this value to be \$191,421 over the 40 year life span (Bureau of Environmental Services, 2008).

Unfortunately not all cities have the support to fund such elaborate research. In these situations, decision makers often favor standard gray infrastructure (Center for Neighborhood Technology) or are forced to cut green infrastructure programs. The importance of investments is perhaps even more critical for municipal decision maker in the current recession economy, when federal funding cuts have limited the budgets of many public institutions.

This has been the case in Minneapolis. While the City has embraced and invested in sustainable solutions, budget cuts have created barriers. In 2009 the City of Minneapolis Public Works Department was forced to suspend a flood control program which aimed to: 1.) infiltrate runoff on site in order to minimizing flooding, and 2.) determine and demonstrate green infrastructure technologies that work in Minneapolis specifically (NPDES, 2011). When financing becomes available, the program will seek to reduce the volume, load, and rate of runoff through a variety of green techniques.

In 2007 the City of St. Paul completed the first publicly owned green roof in the twin cities, a rooftop garden atop of the Fire Department headquarters. The project included both intensive and extensive soil systems, 100 different plant species – including a vegetable garden for firemen – tellises with climbers made to mimic trees, and a variety of public education components. The 9,000 square foot project cost \$500,000, more than one fifth of which came from the Capitol Region Watershed District.

A variety of local groups responded to the project expressing concern about the cities “perpetual budget problems” (Gottfried, M. 2010). Tom Steward of the nonprofit organization Freedom Foundation said, “the fire station’s new rooftop garden and classroom might be better suited as an interpretative center of the city’s callous waste of taxpayer funds and misplaced priorities (Gottfried, M. 2010).” While the City defended their investment citing estimated of long term savings, and noting that the projects performance would be monitored, no data has been released since the projects inception.

Thesis Program

Historical Research:

In recent years, the Minneapolis Parks and Recreation Board (MPRB) has been involved in a variety of stormwater education events. Notable among them in 2011, were public education events which focused on point and non-point source storm water pollution (NPDES, 2011), and a public participation in the NPDES MS4 Phase 1 Permit Annual Report (NPDES, 2011). However, the MPRB could benefit even further by including more built green infrastructure projects, and is perhaps the municipal organization most qualified to do so as the majority of it's resources are vegetated.

This excerpt from the Local Surface Water Management Plan, perfectly sums up the resources water which the MPRB is charged with managing and protecting.

“Minneapolis got its name from the abundance of creeks, rivers, lakes, ponds, and wetlands found within its boundaries. Since the city's first settlement, and the work of the original parks designers, the lakes in particular proved to be an important identifying feature for the city. Early in the city's history, Minneapolis became well known as the “City of Lakes” and the lakes of South Minneapolis have always been a favorite destination. The lakes provide a beautiful amenity for all city residents and recent partnership projects undertaken by the Minneapolis Clean Water Partnership since 1994 maintain the environmental quality of the Chain of Lakes by developing concerted efforts to improve watershed quality. The Chain of Lakes has assumed an important place in the city's identity” (2006, p.4).

Thus, sustainable storm water management practices are a core issue for the MPRB.

However, while the water is clearly of great importance to the MPRB, it has very little visibility in the organizations built projects, or future plans. In the 2009 GreenMark was hired as part of the City's larger 2020 comprehensive Plan, assess the MPRB's current resources, and sustainability efforts, and make suggestions for the future. Interestingly, of the seven recommendations only one, ‘Broaden the Strategic Application of the Urban Forest to Include Multiple Benefits’ suggests the landscape as a possible tool to improve sustainability (GreenMark, 2009). The remaining six recommendations include improving building energy efficiency and reducing building carbon emissions, use purchasing power to demonstrate the value of sustainability, re-organize waste management, events go green, income from green sponsorships, and finally educating residents and staff about current sustainability practices. Interviews with MPRB staff, were also conducted as part of the research process. Based on these interviews, the document reports budget shortage, under-staffing, outdated technologies to be the MPRB's primary resource challenges to the implementation of sustainable practices. This section also indicates that communication between office workers and field staff is an issue, and results in a lack of understanding by field staff about sustainable

practices. Positively however, the report also say's that staff across the board, ‘genuinely believe’ in such practices, and have a willingness to participate.

Regarding economic strategies Green Mark (2009) recommended that:

“An economic model that focuses on operational savings and new revenue should be applied to all sustainability efforts, always aiming to innovate in ways that improve the environment without longterm operational and capital outlays that harm the viability of other MPRB programs.” (p. 3)

“pursuing a model whereby sustainability is a responsibility to be shared among all personnel, in part, so staffing costs can be minimized and funds allocated to off-set direct “first costs” associated with greener operations and programs” (p. 3).

While the MPRB has a great opportunity to use green infrastructure to add value to it's built assets through increased ecological functions and social benefits such as education and recreation, at the moment, financial efficiency is the primary indicator of sustainability.

Goals

Project Goals:

- Develop an in-depth understanding of current green infrastructure including: practices, theories, costs, and construction methods
- Develop a broad understanding the Minneapolis Parks system.
- Learn how the previous two points can inform a green infrastructure proposal that is appropriate for Lyndale Farmstead as a historical neighborhood park.

Inventory and Analysis

Site Uses:

The site is divided into two distinct uses by a roughly 10 ft. cinder block/brick wall. Within the wall is the service center grounds which include: the service center building, a large employee parking lot, a large equipment lot, and a smaller visitor lot. Also within the wall is a detention pond (.5 acres) which is maintained by the City (in Minneapolis the City and the Park Board are separate bodies). A dog park is currently under construction in the south west corner of the employee parking lot.

Outside the wall is a historic neighborhood park which include: a recreation center, two play fields (used for soccer, baseball, and hockey during winter), tennis and basketball courts, and the historic superintendent's house.



Image 4. Plan for Dog Park Currently Under Construction



Detention Pond



Wall Around Service Center



Superintendent's House

- Visitor Parking
- Service Center
- Equipment Parking
- Employee Parking
- Dog Park (under const.)
- Recreation Center
- Detention Pond
- 10 ft. Wall
- Superintendent's House

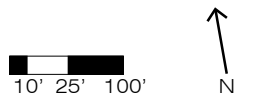


Image 5. Birds-eye of Site

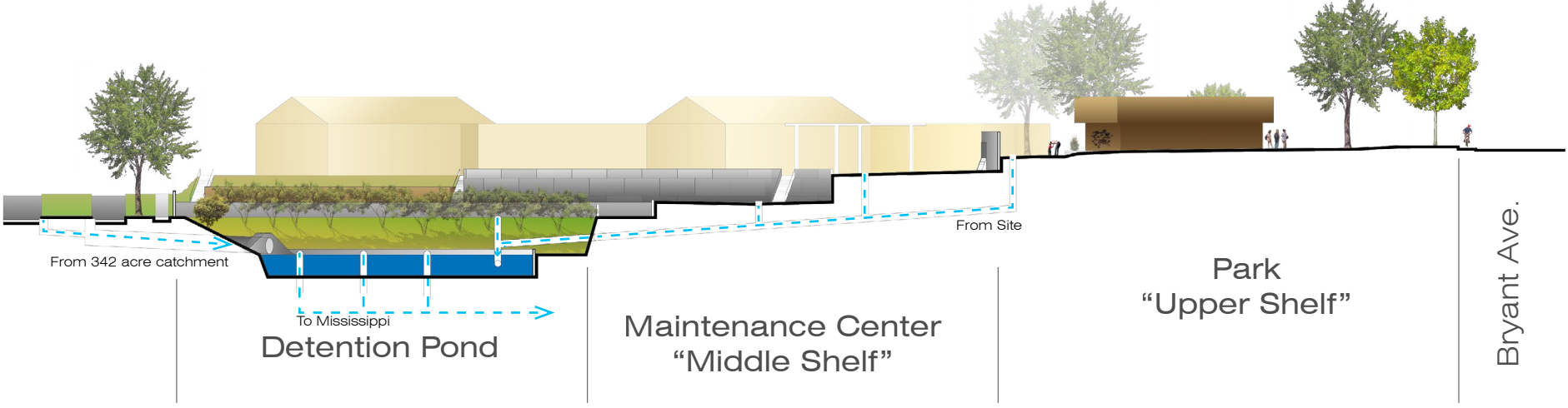
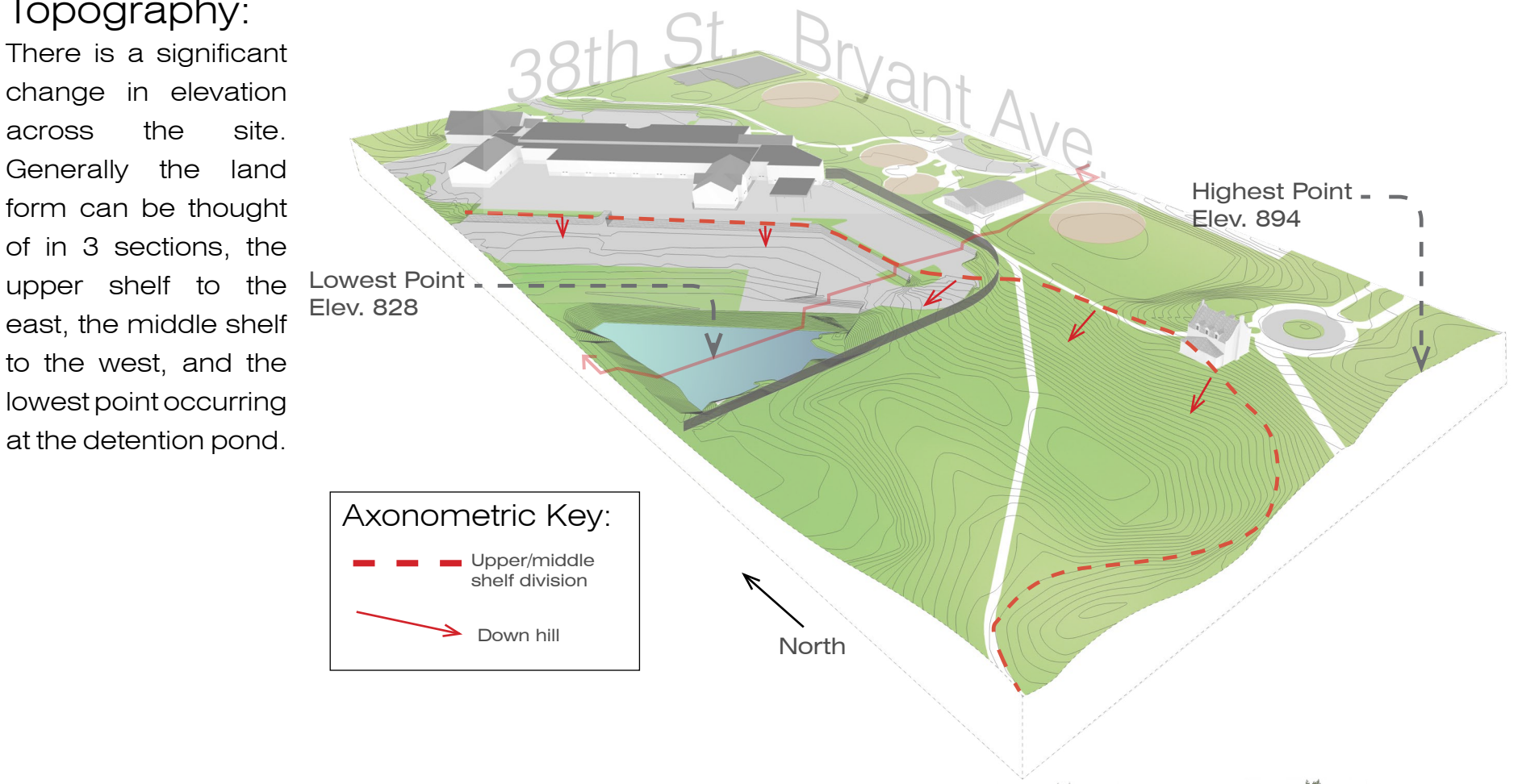


View of Service Center from Dog Park/Employee Parking

Inventory and Analysis

Topography:

There is a significant change in elevation across the site. Generally the land form can be thought of in 3 sections, the upper shelf to the east, the middle shelf to the west, and the lowest point occurring at the detention pond.



Neighborhood Scale Hydrology:

The detention pond was original independent, handling only site water, but during the 1980's the pond was converted into a city detention pond. It now receives runoff from a 342 acre area of uptown, and moves it on to the Mississippi river. The catchment area is primarily mid to high density residential with small portions of commercial and institutional. As a result of these uses, and large impervious areas, the catchment contributes large volumes of contaminated water, which eventually flows to the Mississippi river.

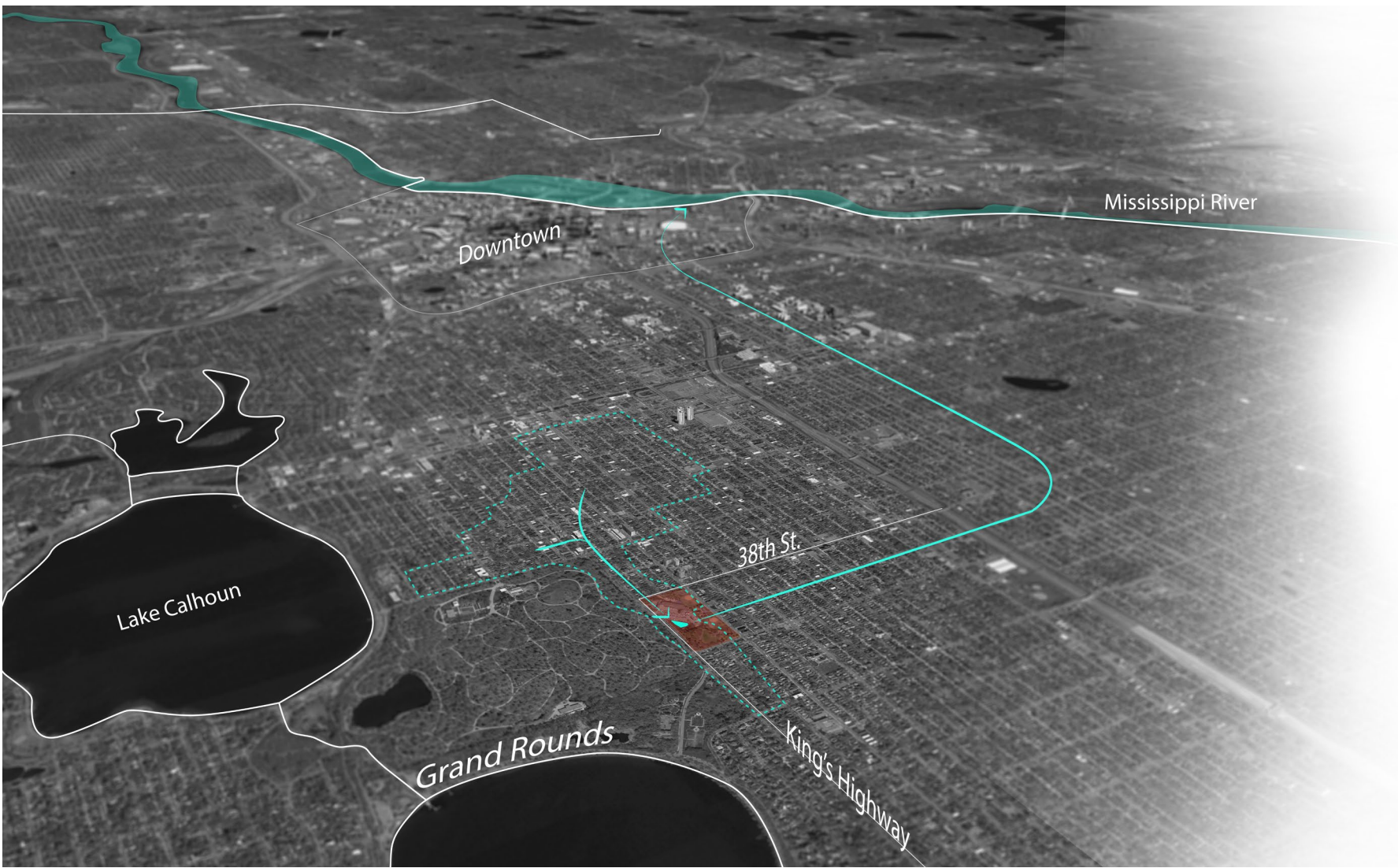


Image 6. Catchment area, site, and outlet to

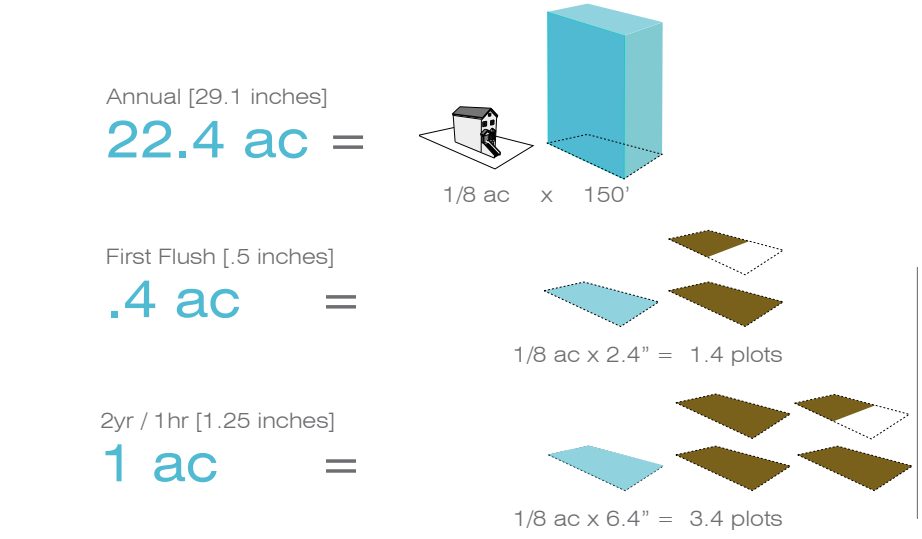
Inventory and Analysis

Site Scale Hydrology:

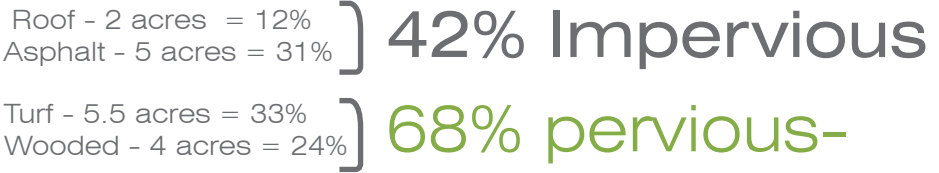
Impervious surfaces (roofing or cement/asphalt cover 42% of the site producing 22.4 acre feet of runoff per year, which is held in the pond, and passed on to the river. In order to size ponds and swales, runoff will need to be calculated for a specific storm event, or range of events. This project will focus on detaining the most frequent rainfall events which , thus the 2 yr./1hr. (which equals 1.25") has been chosen as the upper range for ponds and features that should remain at a high water level. Currently, the site produces 1 af of runoff during a 2 yr./1hr. event.

Storms up to a half inch (known as the "first flush") are also an important consideration. They carry large amounts of fertilizer and oil products and thus will be a focus of purification methods.

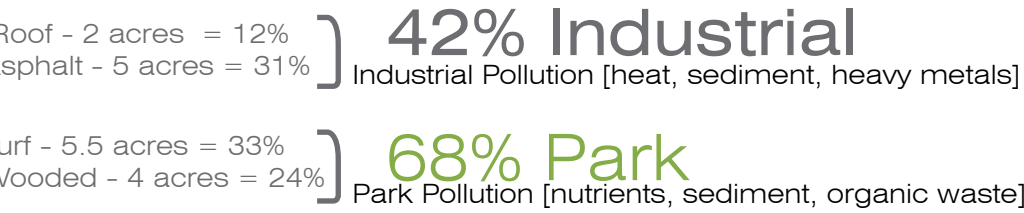
Runoff Volume:



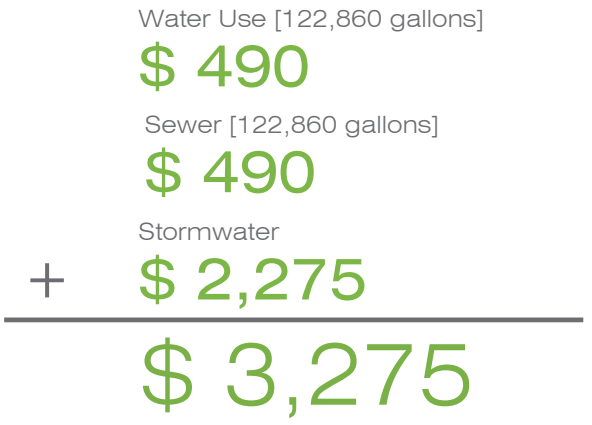
Surface Cover:



Pollutants:

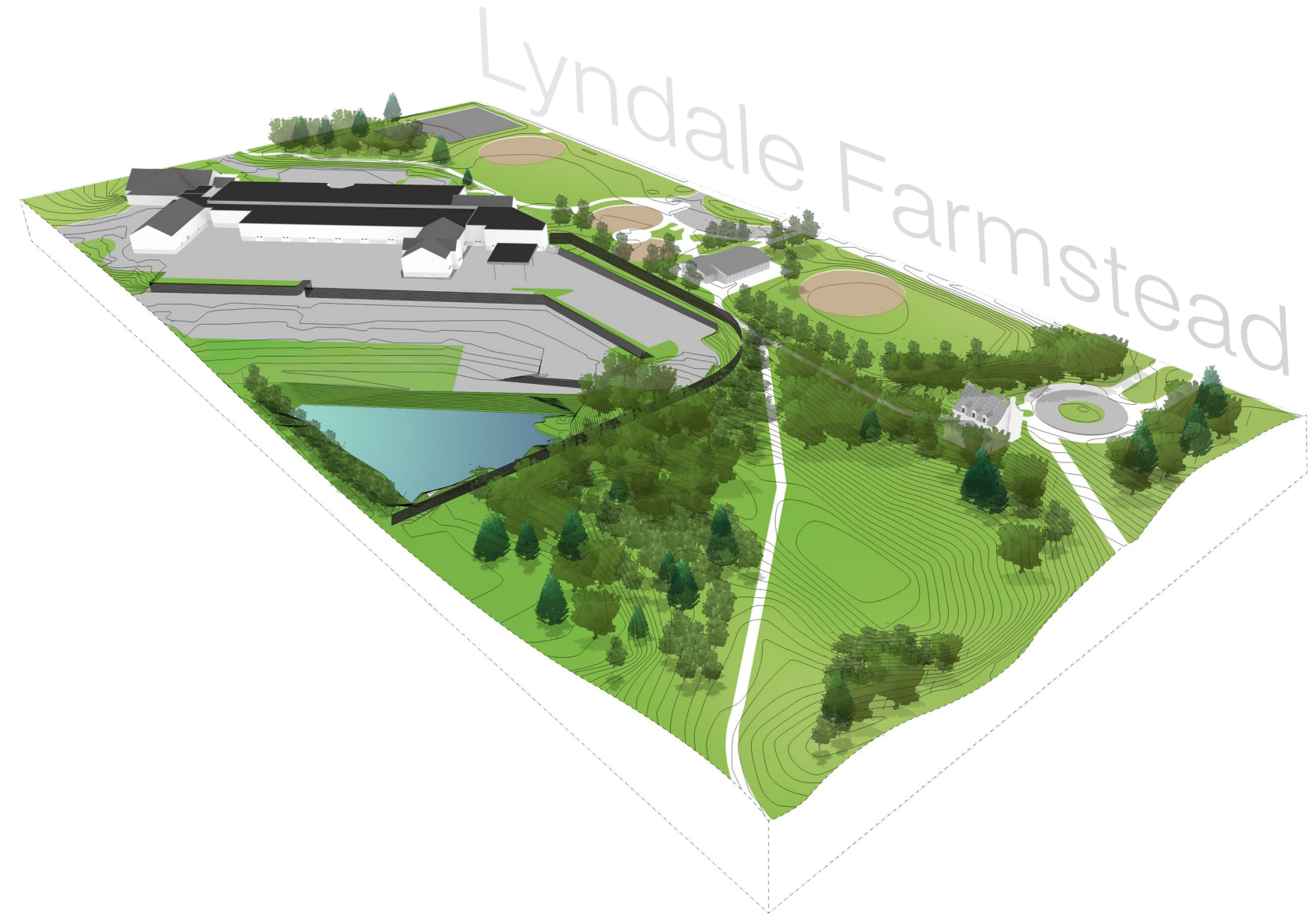


Cost of Existing Infrastructure:



Vegetation:

The site has many mature trees especially on the southern portion of the near the superintendent's hosue. These are a perfect complement to the rolling hills and historic house, and harken back to the original picturesque landscape design.



Inventory and Analysis

Historical Research

Horace W. Cleveland's Involvement with Minneapolis Parks:
H.W.S Cleveland was an early proponent for the Minneapolis park system. He advocated for the preservation of natural areas such as the Mississippi river banks, and for the creation of important park connections such as the Grand Rounds Scenic Byway. While his involvement at Lyndale Farmstead is not explicitly documented, he is known to have advised Theodore With of many designs in the Lake Calhoun/Harriet area. It's likely that he was at least partially involved in the development of Lyndale Farmstead's picturesque landscape.

Name:
The park was once the site of William S. King's "Lyndale Farm." It was, literally, the Lyndale farmstead. King derived the name of his farm from his father's first name, Lyndon. King's one-time farmhouse, the last vestige of the farm, still stood in 1920 on the last parcel of land acquired for the park at 39th and Bryant. It was once the headquarters of a 1,400-acre farm that encompassed almost all of Lake Harriet.

Time Line of Acquisition and Development:
1896: Park Board records show that first deed to any part of this property was purchased, but no record of that purchase was included in park board proceedings. This type of off the record transaction would be a consistent throughout the park boards acquisition and development of the site.

1895: First mention in Park Board proceedings by superintendent William Berry. Barns on site to be used for boat storage.

1899: Park Board purchases all but 9 lots of two block site, including 2 large barns (used for storage of equipment and animals). Gave the park board much needed storage space and a maintenance yard.

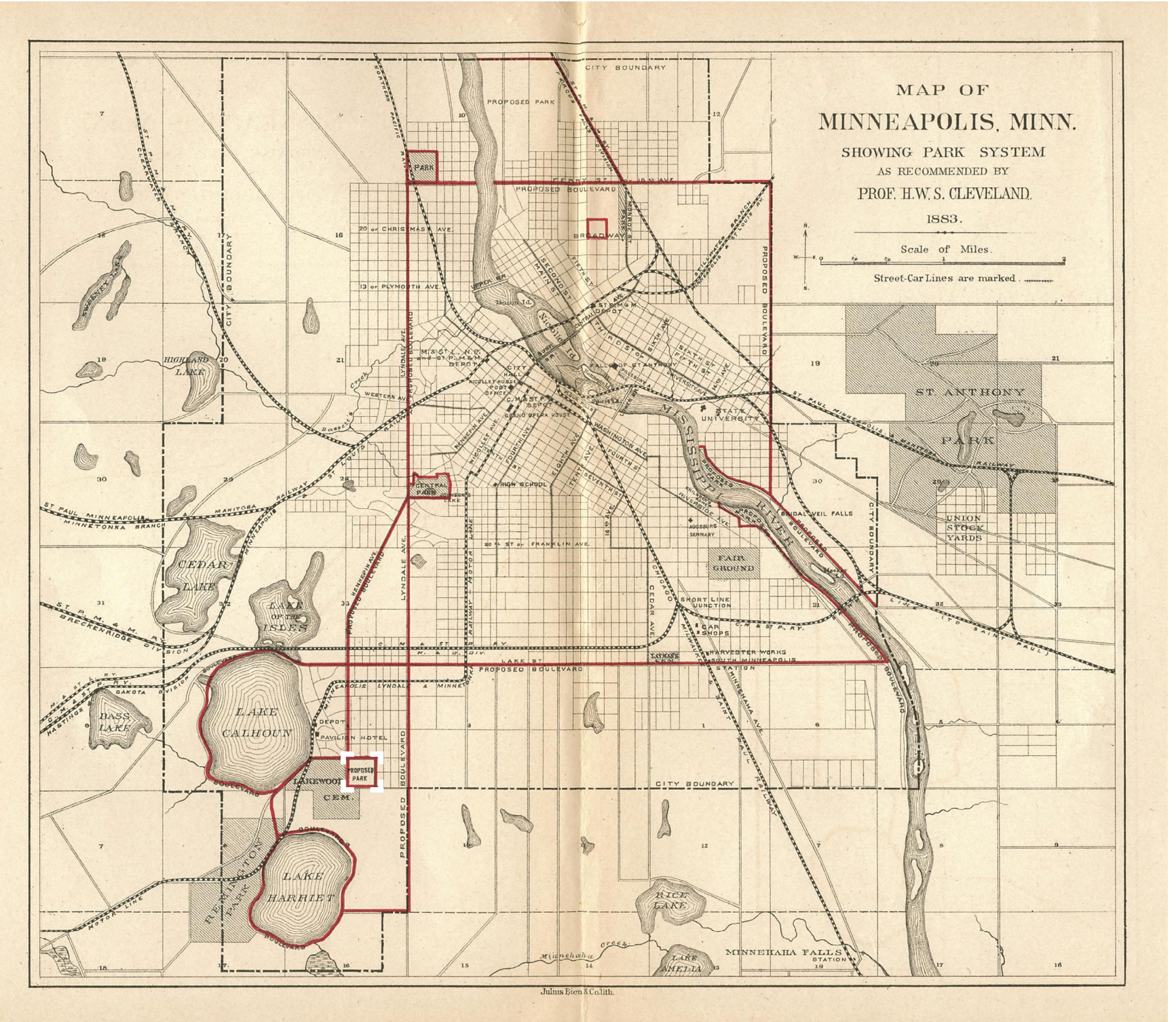


Image 7. Horace Cleveland's park system plan, 1883. Site shown in white

Inventory and Analysis

Historical Research Continued

Development:
1905: In this years annual report, it was suggested that the office of the superintendent of parks be moved from city hall to the ground of the Lyndale barns, and that a residence be included. Also, suggested on the ground is an attractive park.

1906: In Theodor Wirth first annual report as superintendent he included a detailed plan for “Enlargement and Improvement of the Lyndale Farmstead.” He continued to develop these plans throughout his time as superintendent. His 1925 master plan is shone right.

1907 - 1970: The site had large green house operation, and demonstration gardens as shown in Wirth’s plan (shone right). The green houses had to be shut down in the 1970’s during the energy crisis.

1910 - 1998: Superintendent lived in the house on the hill. The issue has been debated off and on. The current Soup live in the second story of the buildings

Historic Designation of Wirth House
“Aside from modification that allow the building to be used for office space by the current tenant... The building is largely unchanged from the time (1910 - 1946) it was the home and administrative office of Theodore Wirth. In addition, the surrounding site largely represents the topography and landscape features from that period” (P. 15).

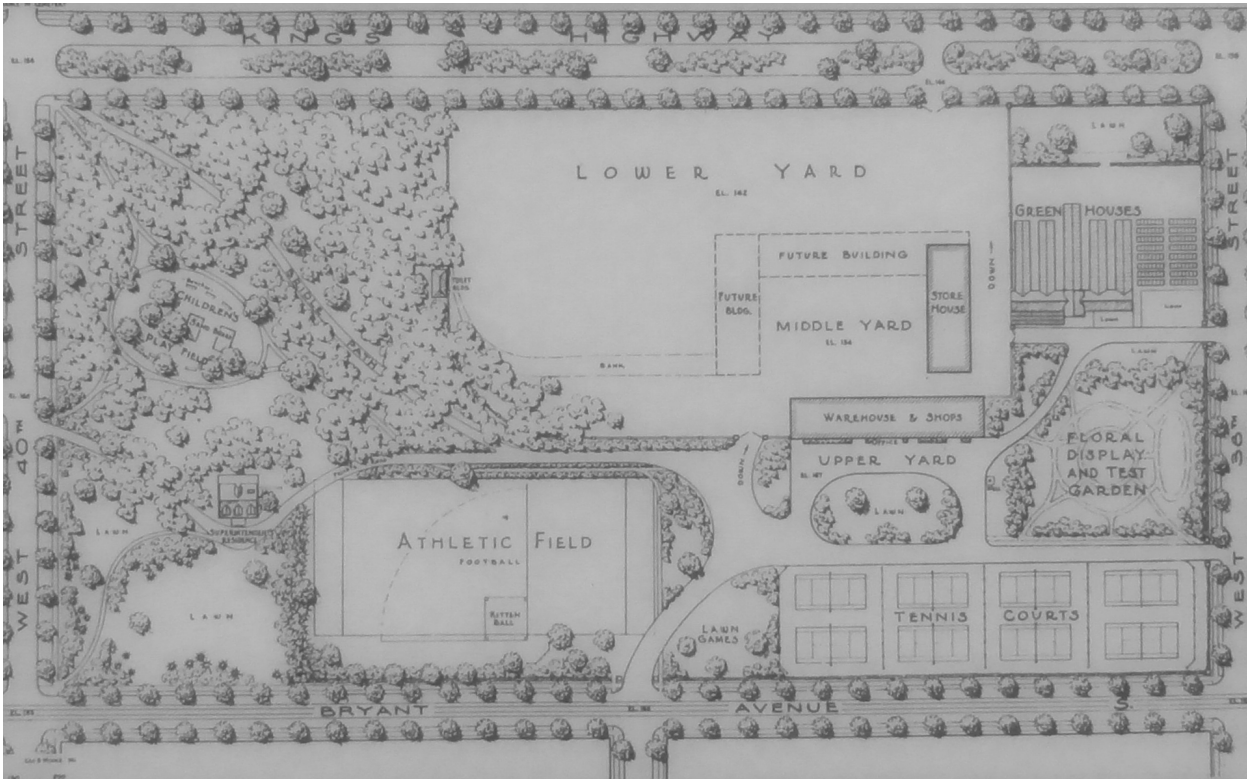


Image 8. Wirth Plan of Lyndale Farmstead, 1925

1925 Proposed Plan of Lyndale Farmstead by Wirth
Note:
1. Site was used for plant production and ‘display’
Shows that the area has a history of prominence. A symbolic connection between park board operations and public

2. Green houses closed because of energy crisis
The green house operation was so energy intensive that it had to shut down in the 1970’s energy crisis.

3. Although the pit had been featured in earlier plans by Wirth, his 1925 plan filled it in, calling it a “land locked swamp.”



Image 9. Wirth in drafting room at Farmstead



Image 10. Superintendent’s house today

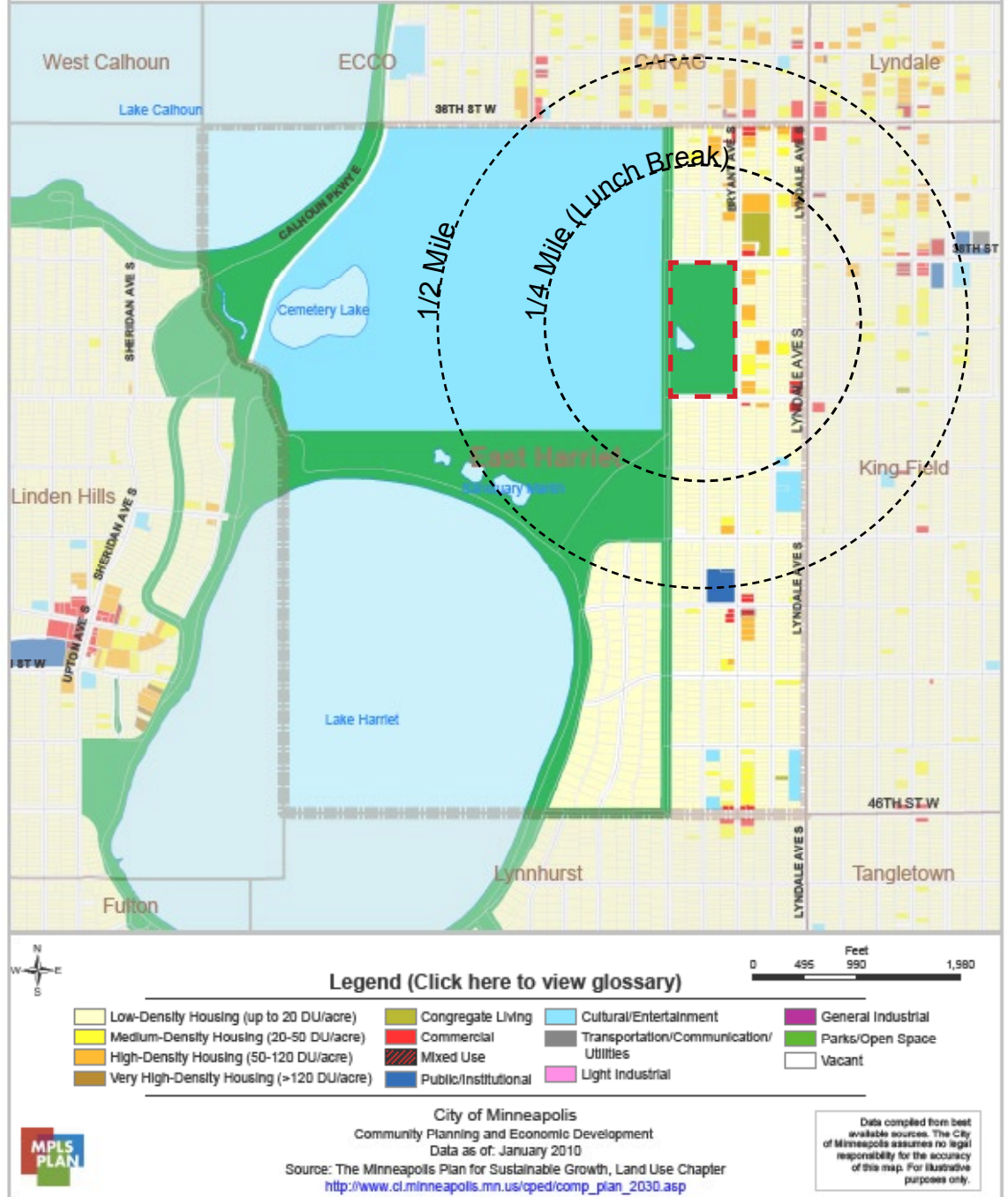
Inventory and Analysis

Neighborhood Inventory

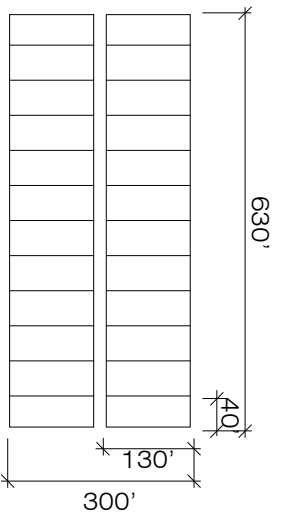
General:
The site lies on a fault line between open green spaces to the west and moderately dense urban fabric to the east.

Land use:
The site is surrounded on all sides but the west by residential, predominantly 'low-density'. However, while the houses may be single family, the lot sizes are small, and yard space is limited (see image right). There are a number of mid to high density apartments to the east of the site - on Bryant Avenue. The block to the north west of the site, labeled 'congregate living' is a senior assisted living facility.

Walkability and Local Commerce:
There are a small number of businesses to the east within walking distance of the site. They are a gas station and two boutique clothing stores.



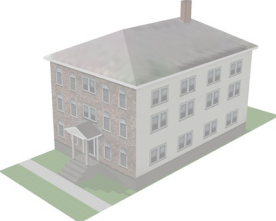
Block Dimensions:



Building Types:

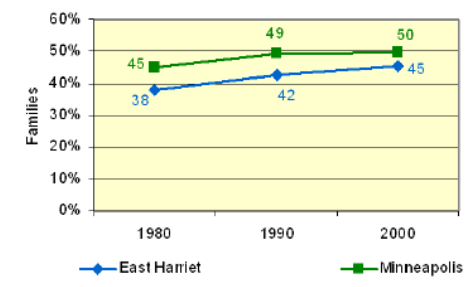


House + Detached Garage



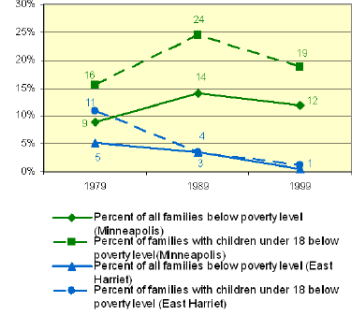
Multi-Story Apartment

East Harriet
Percent of families with children under 18

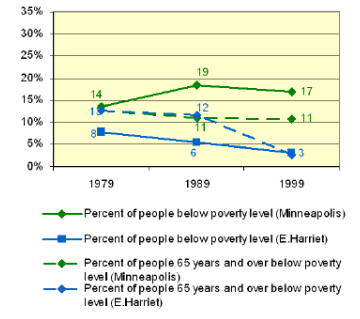


Source: Minneapolis Community Planning and Economic Development with data from the U.S. Census of Population and Housing (SF1)

East Harriet / Minneapolis
Poverty status of all families and families with children under 18



East Harriet / Minneapolis
Poverty status of all people and people 65 years and older



Summary of Analysis

Park History:
 Historical elements that should be preserved include the superintendent's house and the mature trees (especially on the southern portion of the site).

Hydrology:
 In order to restore the hydrology of this site impervious surfaces should be removed where possible. Much of the lower employee lot is empty, pavement should be removed from this area. Additionally, there are excess parking spaces in the visitors lot which could be removed.

Runoff should be held on site. The lowest points of the site will be used for storage. Swales and raingardens will be used to convey water from higher areas to lower detention basins.

:

Healthy Food:
 There are not any health food options immediately adjacent to the site. This effects park board employees most significantly in that they have a very limited time for lunch, and have to walk to and from a destination. At a minimum a healthy lunch option should be offered to park board employees, but possibly to public users. This may be a way of generating interest in the site, and income for the park board.

Demand for Neighborhood Park:
 The small lots and density around the site create a demand for park space. While there are larger "celebrity" parks - like Harriet and Calhoun - near by, locals feel a unique sense of ownership towards neighborhood parks like Farmstead. The park should provide similar amenities to a suburban yard areas for lawn activities and grilling

Diverse Ages and Incomes:
 Design should target users of all age groups including children through seniors. Additionally all area of the site should be A.D.A accessible.

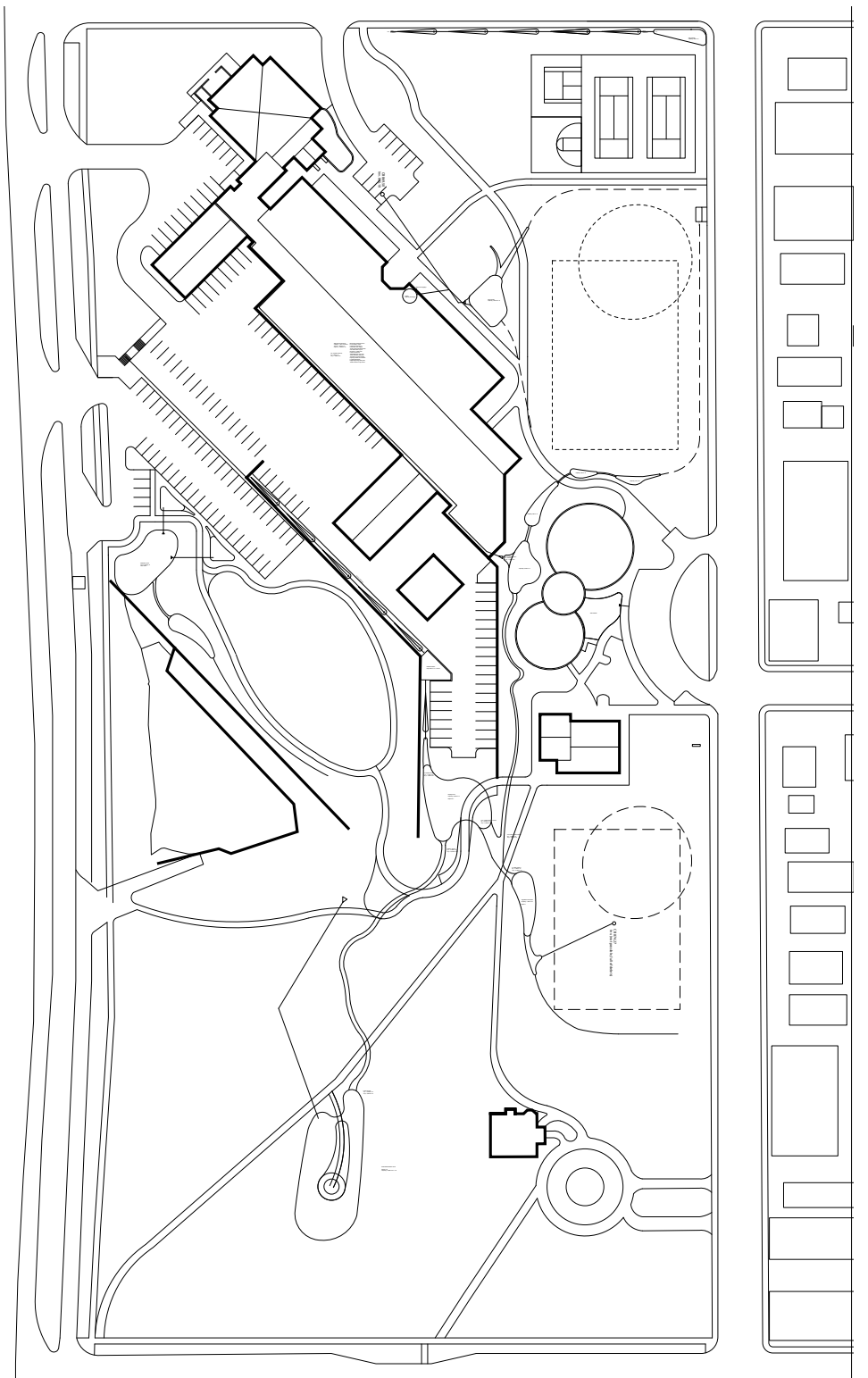


Image 11. Composite Analysis

Concept and Design Development



- Extensive Green Roof
- Roof top cistern
- Employee Roof top gardens
- Dog Park Improvements
- Stormwater Demonstration Areas
- Picnic Shelter + Overlook
- Stormwater Demonstration Area
- Park History Center
- Detention Pond



Thesis Solution

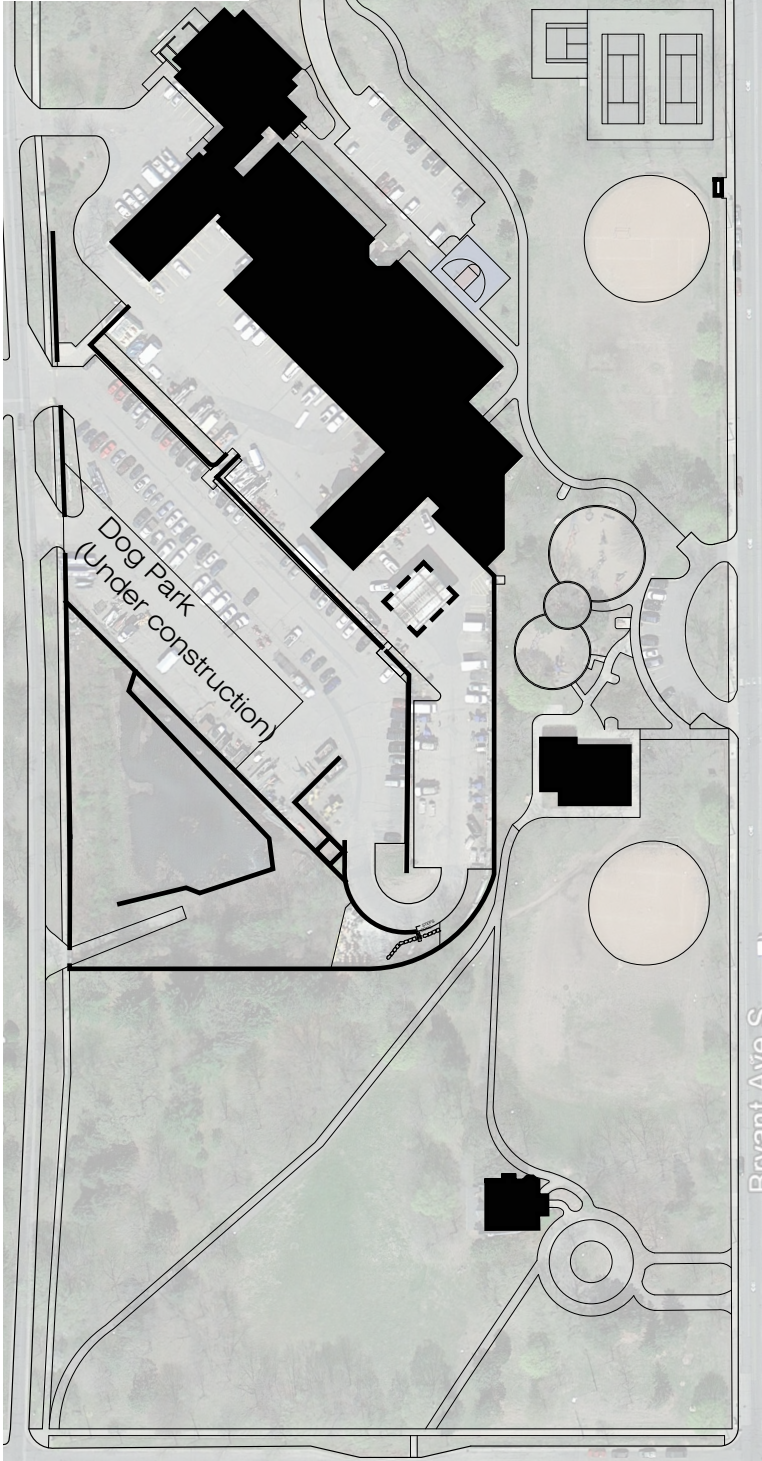
The Soup Bowl in the City of Lakes

Introduction:

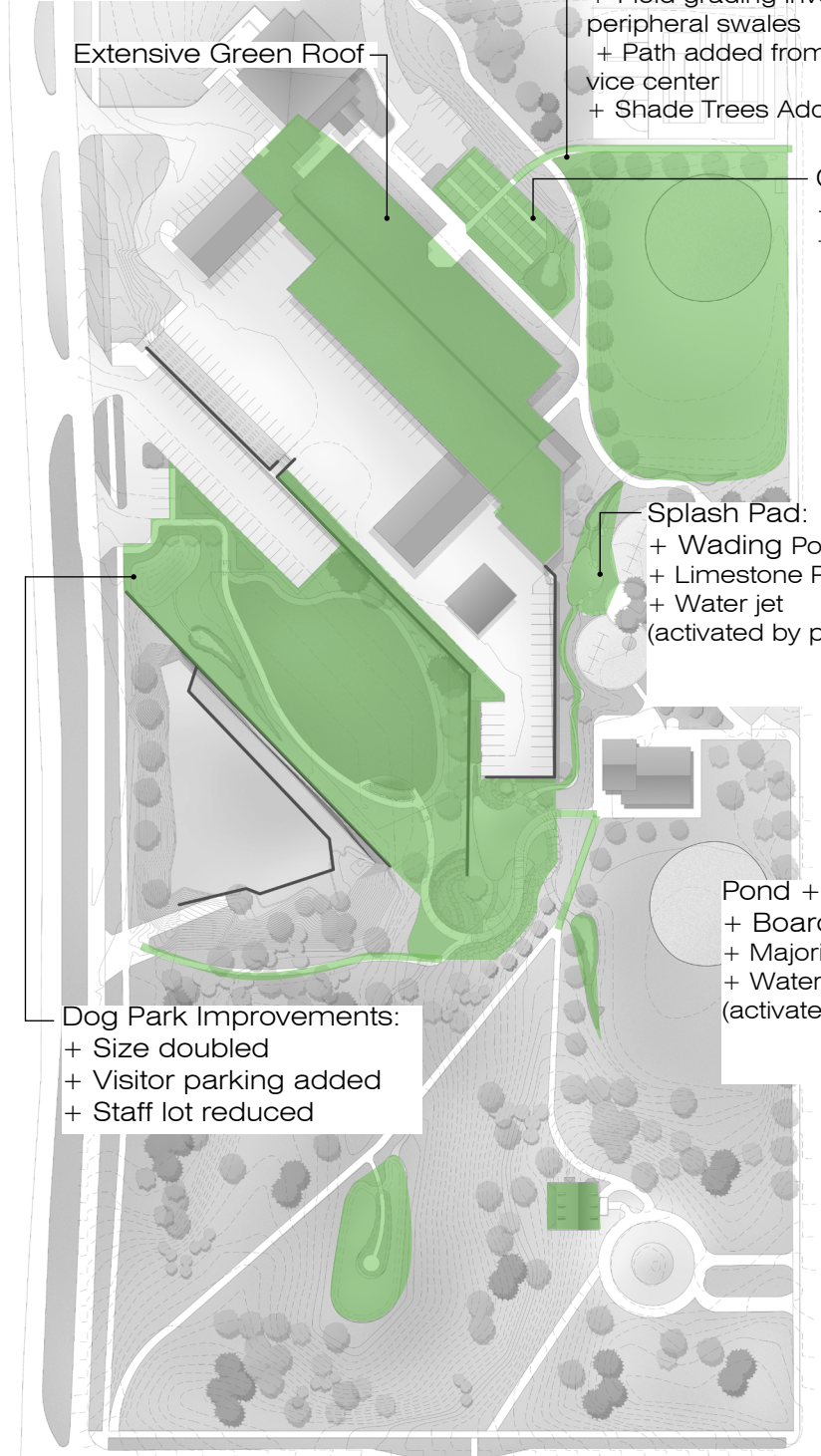
Program:

- + Provide 50 employee parking spaces, and use remaining space in employee parking lot for dog park expansion
- + Integrate storm event runoff between first flush (.5 inches) and 2 yr./1 hr. event (1.25") into regular uses
- + Hold storm events up to 10 yr./1 hr. event (1.75") on-site
- + Treat all stormwater before it reaches long term detention areas
- + Store up to 20,000 gal. of roof water in a cistern for garden use
- + Use swales to convey stormwater above ground. All swales to be with 2-5% slope along center line and 2-10% along edges.
- + Provide between 5 and 10 parking spaces for dog park visitors
- + Remove 85% of wall around service center
- + Regrade
- + Trees
 - 25 large trees
 - 15 small trees
- + 43,560 sq. ft. of extensive green roof (on flat portion of service center). Light weight soil at a depth of 3". Succulent plants to be used.
- + Maintain between 5 and 10 visitor parking spaces

Existing



Proposed



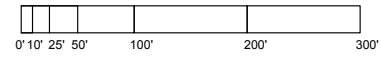
Ball Field Improvements:
 + Field grading inverted. Now drains to peripheral swales
 + Path added from bus shelter to service center
 + Shade Trees Added

Community Garden:
 + 10' by 10' plots
 + Raised Planters

Splash Pad:
 + Wading Pool
 + Limestone Patio
 + Water jet (activated by push button)

Pond + Rock Garden:
 + Boardwalk
 + Majority of wall removed
 + Water jet (activated by push button)

Dog Park Improvements:
 + Size doubled
 + Visitor parking added
 + Staff lot reduced



Thesis Solution

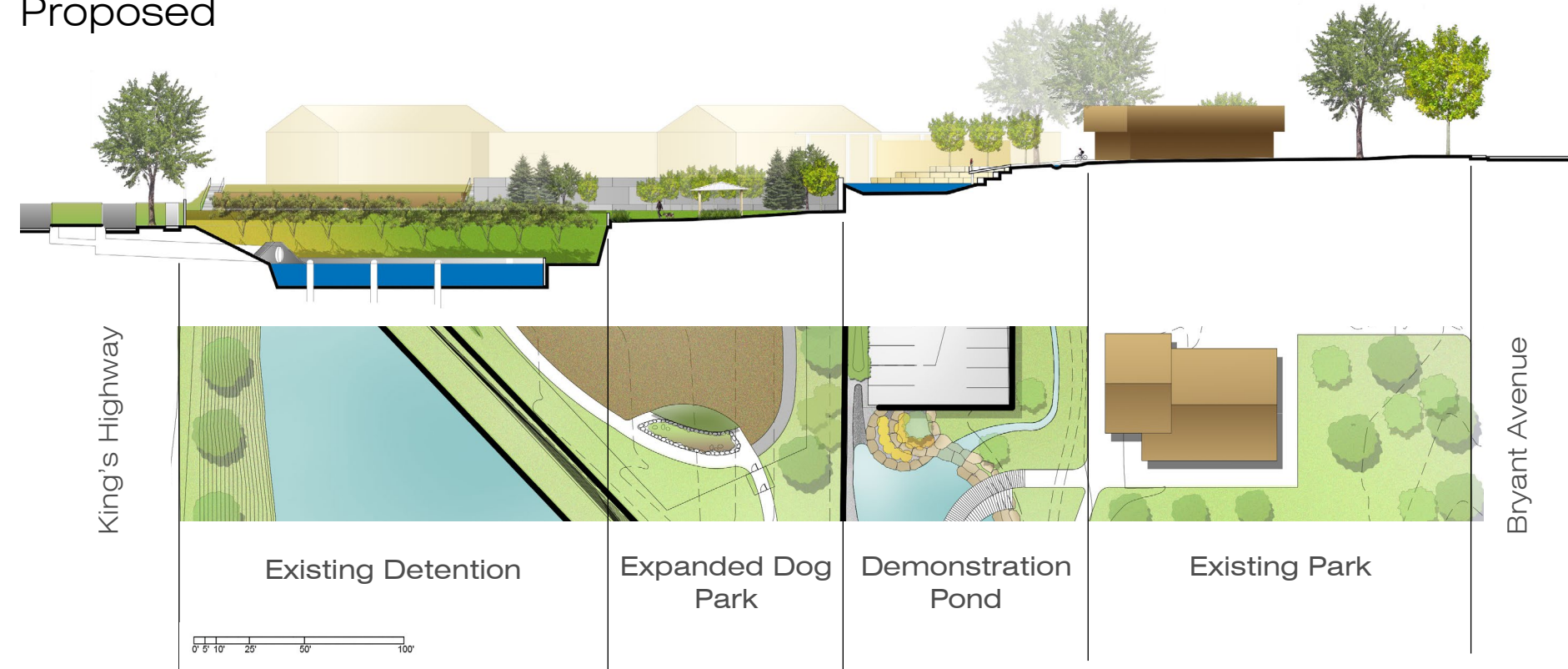
Master Plan



Existing

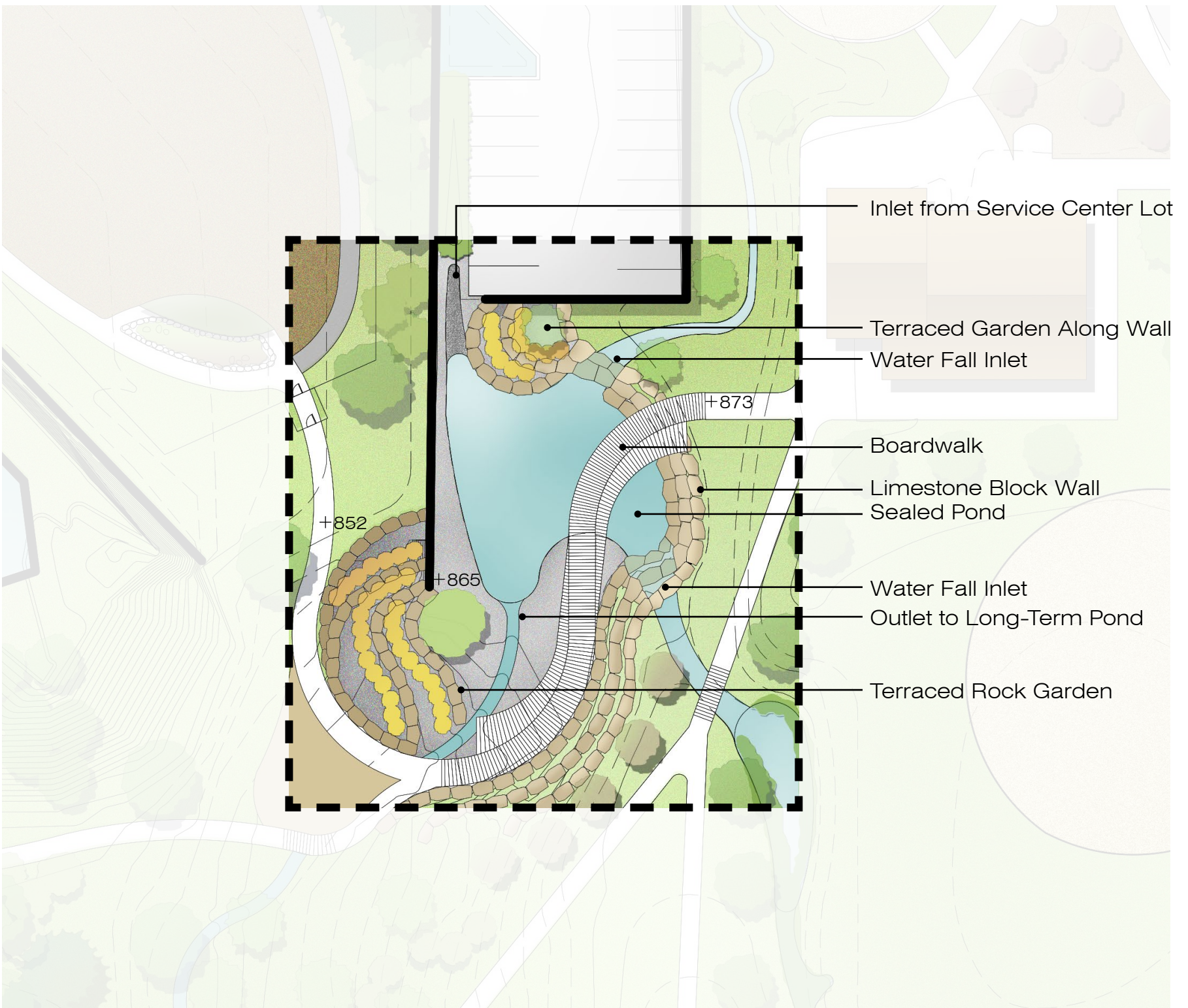
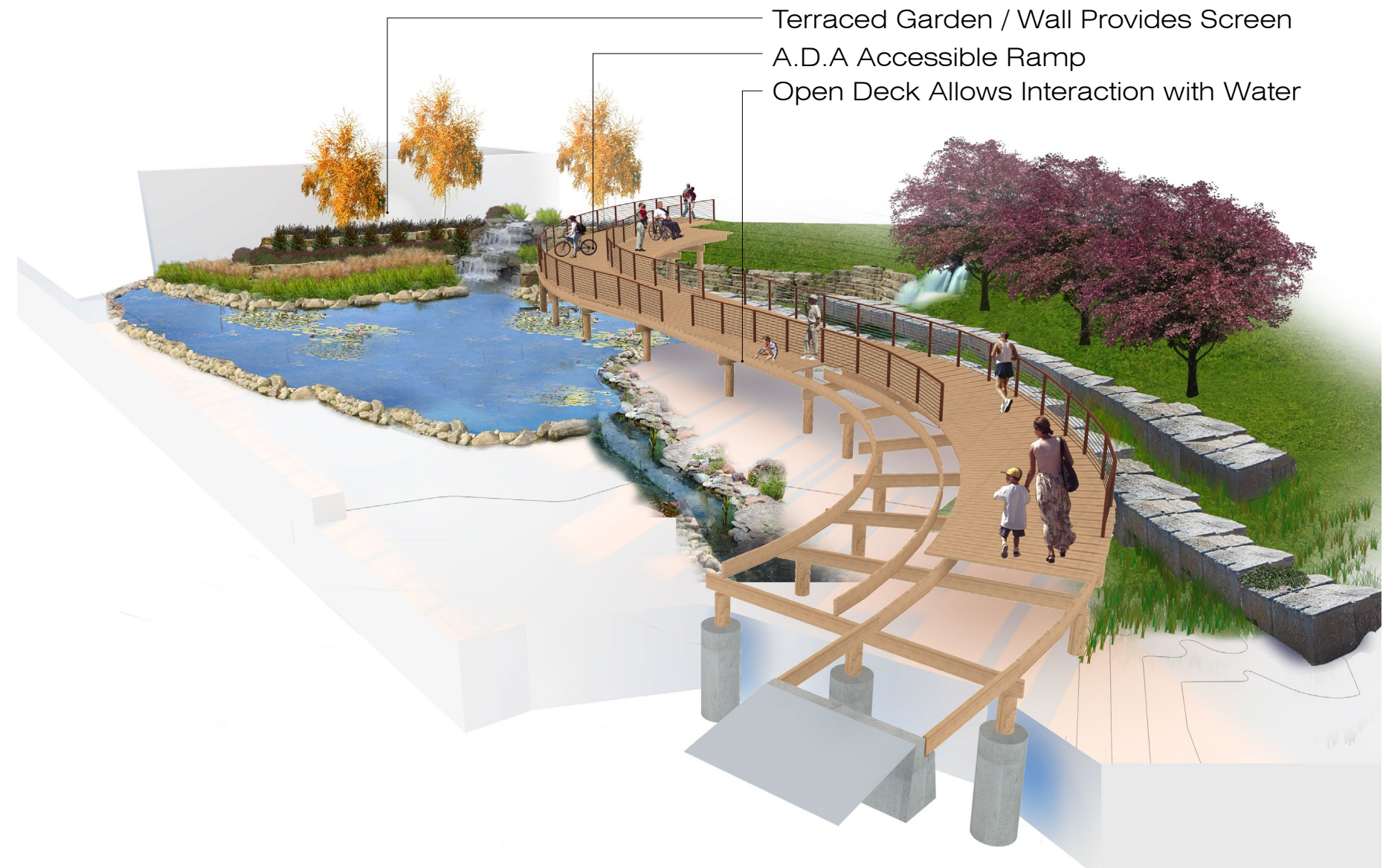


Proposed



Thesis Solution

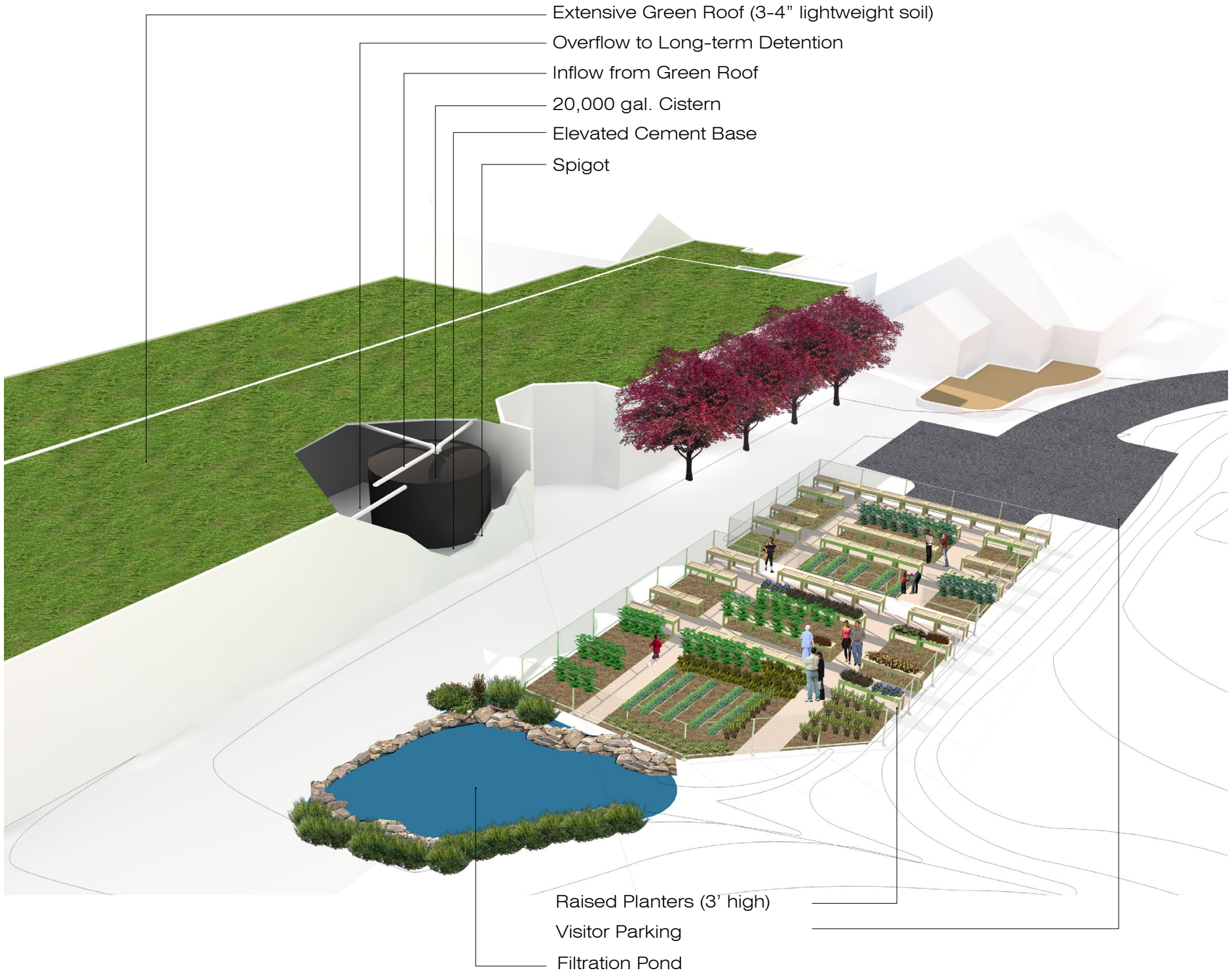
Boardwalk Demonstration Area



Thesis Solution

Community Garden

The community garden is a place where community members, and park employees of all ages can interact. Irrigation water will be provided by a cistern housed within the existing supply room. The garden plots will be sold annually providing a small revenue stream for the Park Board. A "Spots for Plots" program will offer service center employees a garden plot in exchange for using public transit during the summer months.



Thesis Solution

Sustainable Splash Pad



Dog Park Improvements

Significant additions were made the Park Board's 2012 plan.

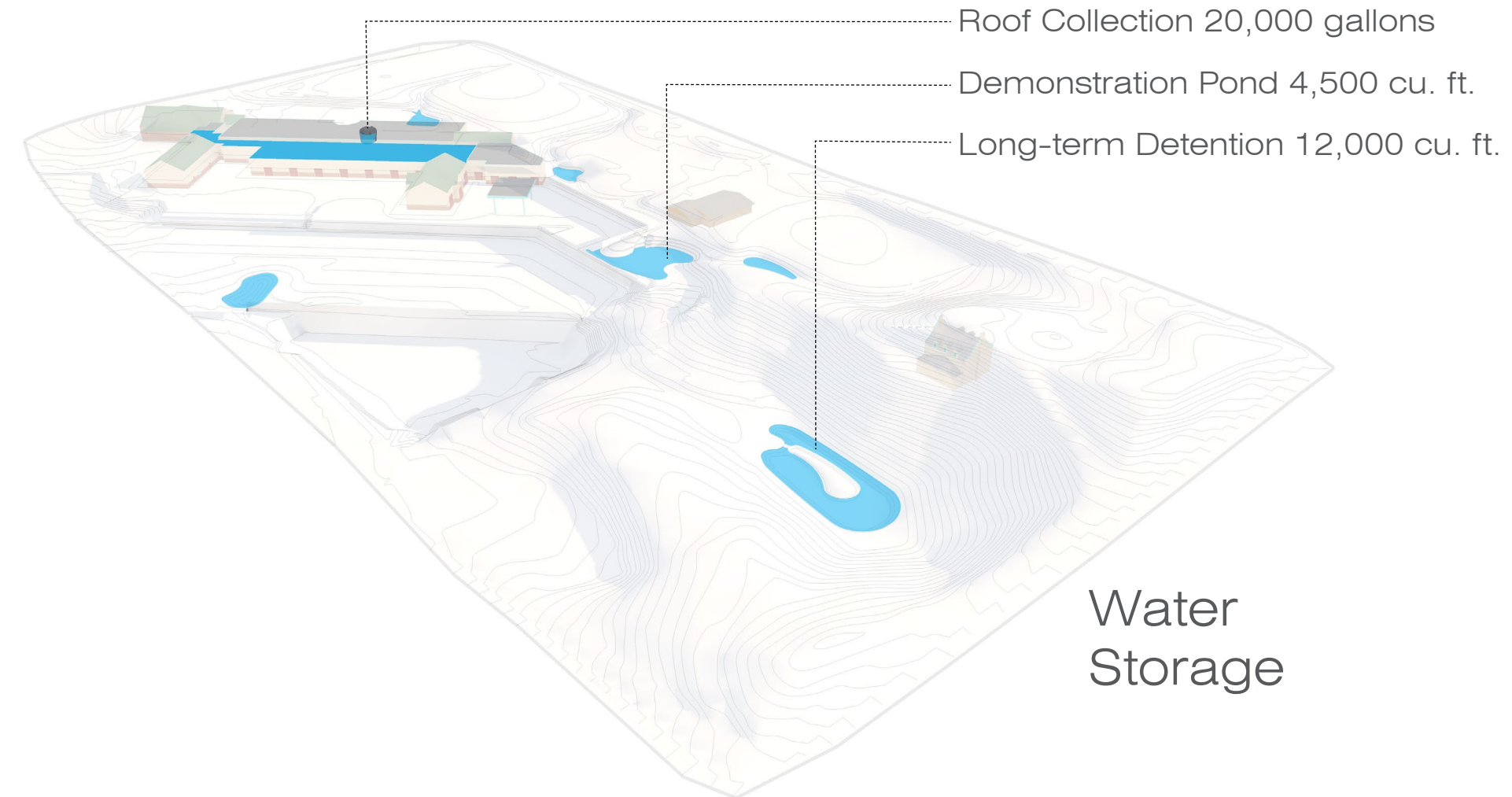
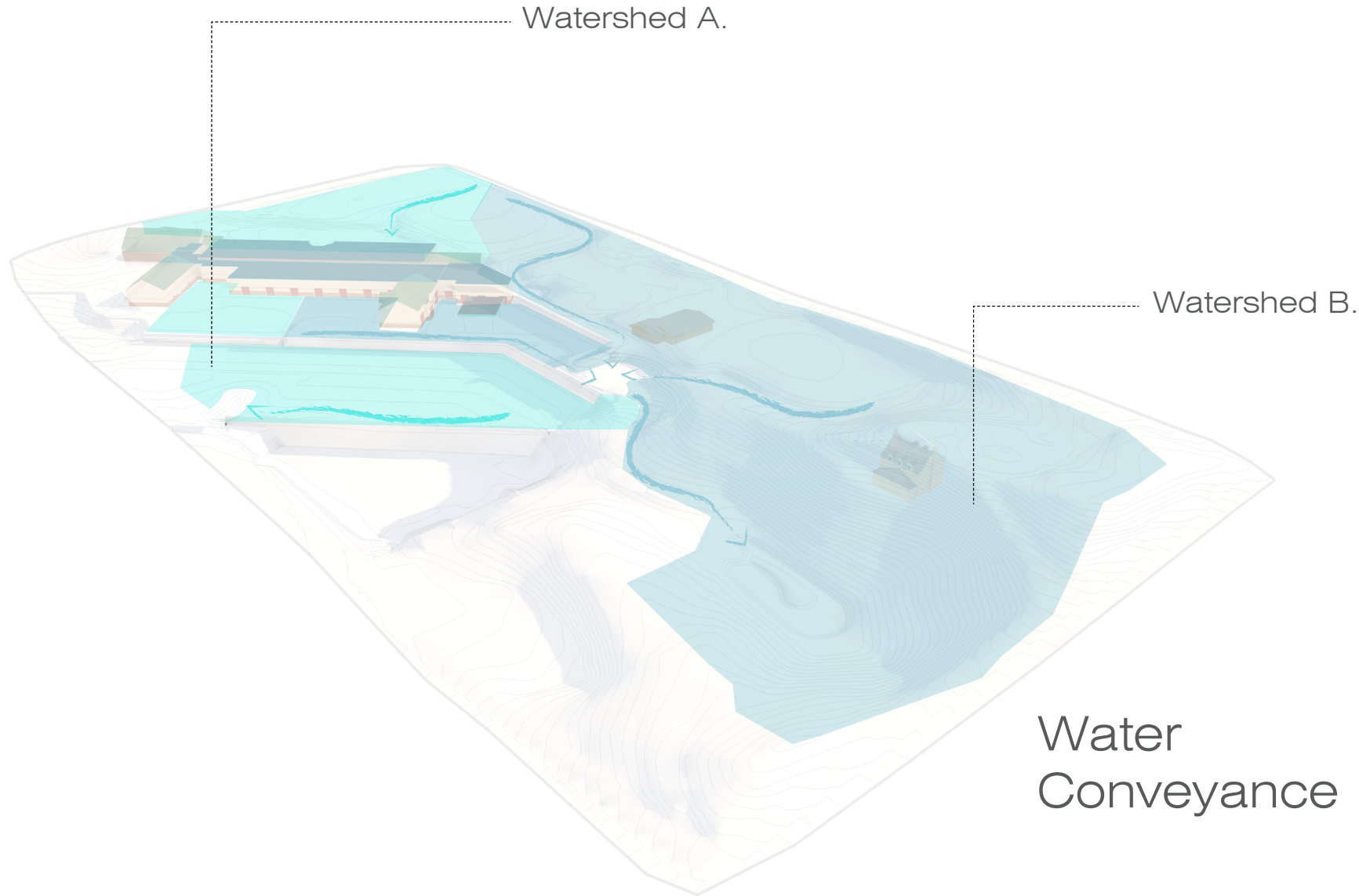


Thesis Solution

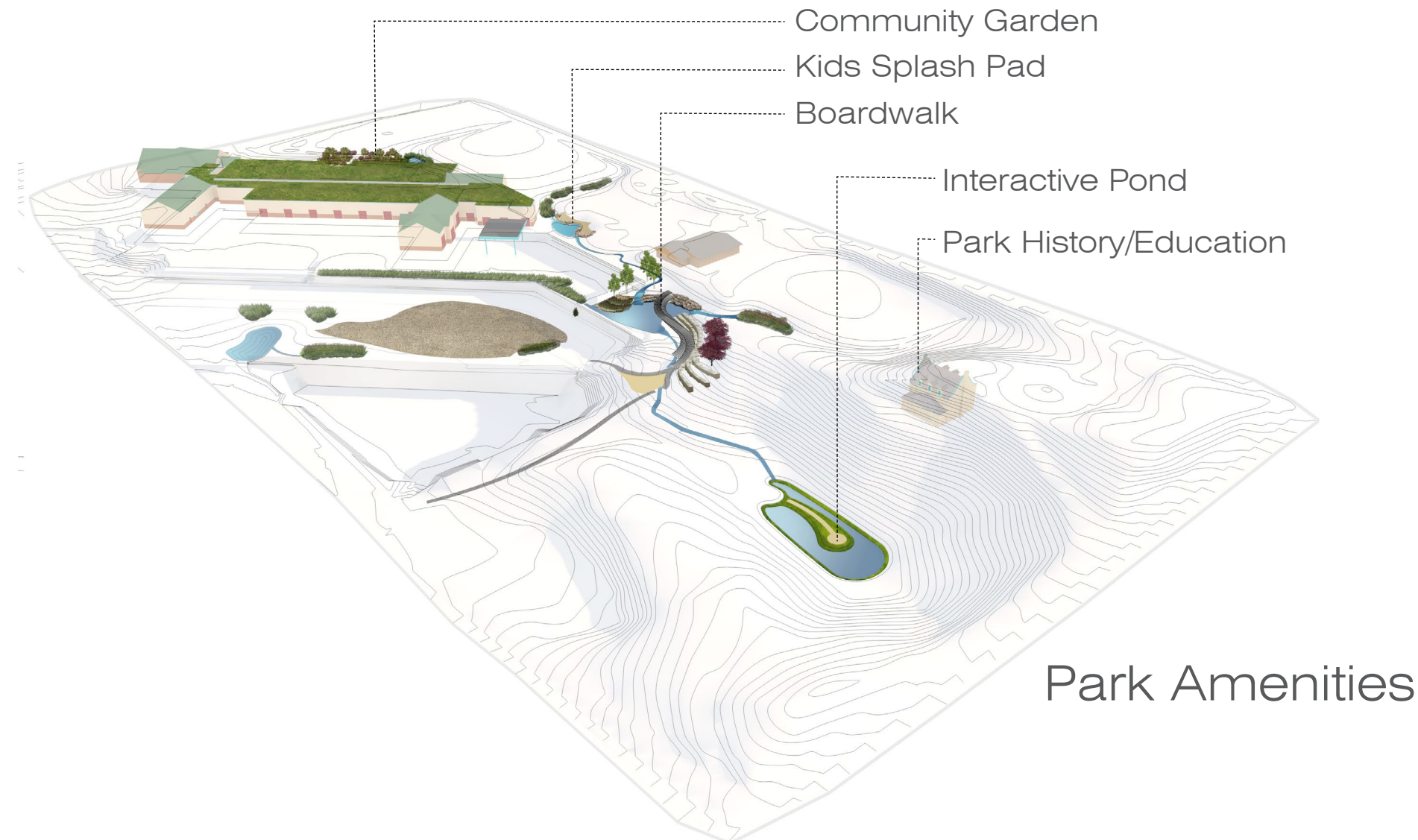
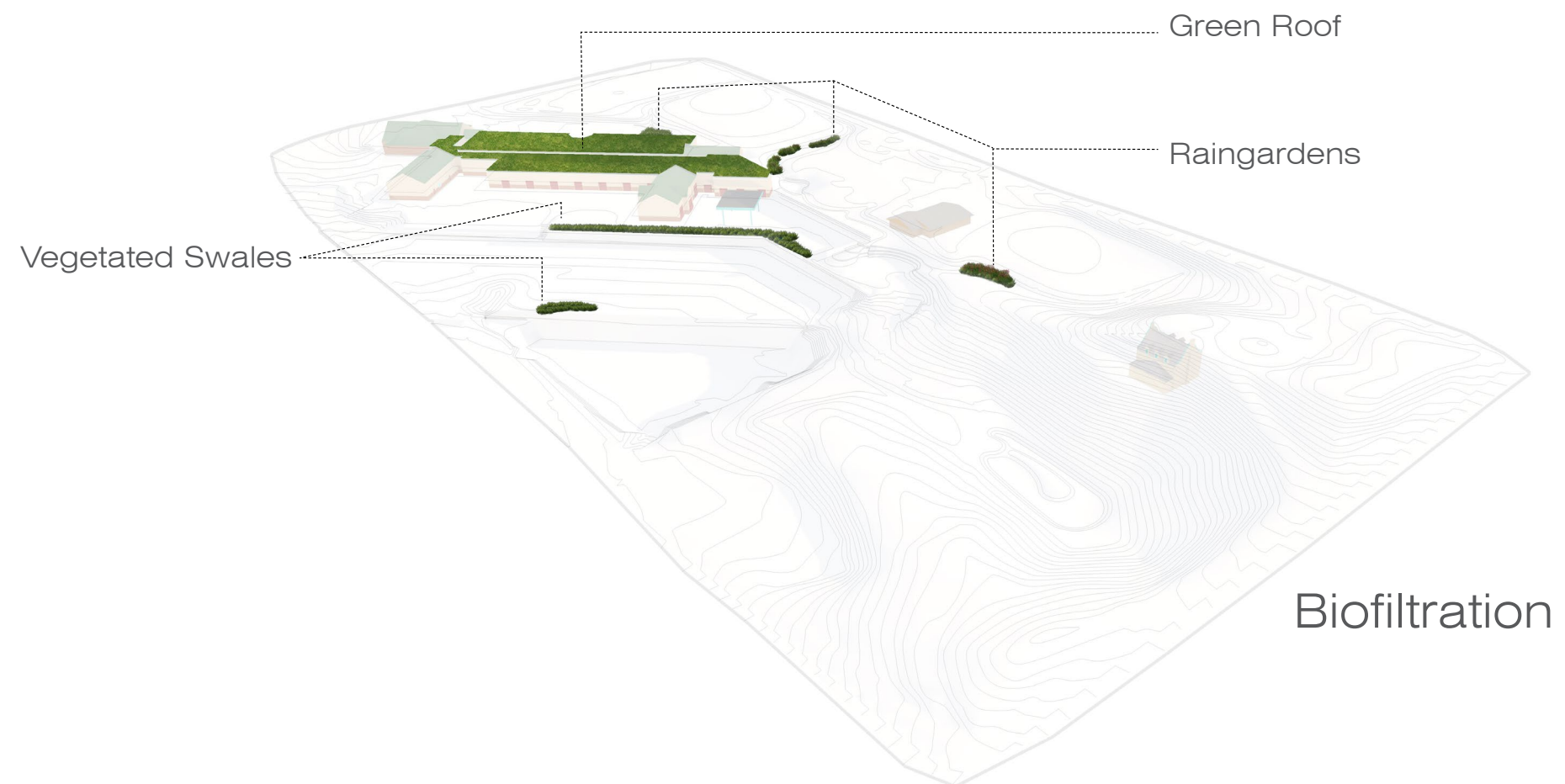
Demonstration Pond + Park History Center



Thesis Solution



Thesis Solution



Previous Design Studios

Fall Semester 2009 | Kathleen Pepple

- The Teahouse | Community Garden
- The Fine Arts Club | Residential Design

Spring Semester 2010 | Dominic Fischer + Mathew Chambers

- Cold Smoke | Urban Open Space
- Woodlawn Park | Urban Planning

Fall Semester 2010 | Stevie Famulari

- Defining Space | Urban Design
- Snow Symposium | Land Art
- The Library Project | Land Art

Spring Semester 2011 | Kathleen Pepple

- What is a Neighborhood? | Neighborhood Planning
- Fort Yates Reservation | Equestrian Center
- Lake View Plaza | Urban Park

Fall Semester 2011 | Jason Kost

- Buildings, Streets, Blocks | Urban Design Workshops
- Form Based Codes | City Planning
- The Denver Project | Urban Planning + Site Design

Spring Semester 2012 | Kathleen Pepple

- Trelaze | Reclamation
- Le Quai Convention Center | Urban Park Design

Fall Semester 2012 | Merhan Madani

- Fargo Civic Center | Urban Design

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 - Calhoun Pic: alexastales.blogspot.com
 - Harriet Pic: commonhomepage.org
3. Google Map
4. <http://www.minneapolisparcs.org/default.asp?PageID=4&parkid=502>
5. Bing Maps
6. Google Earth
7. <http://www.upress.umn.edu/book-division/books/city-of-parks>
8. Theodore Wirth, *Minneapolis Park System 1883-1944*, (Minneapolis, Minn. 1945), p. 209
9. www.minneapolisparcsandrecreation.org
10. www.minneapolisparcsandrecreation.org

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NDSU is a good university