City Council Agenda Item #14_
Meeting of November 14, 2016

Brief Description Resolution endorsing the Glen Lake Neighborhood Study

Recommendation Adopt the resolution

Background

The city council has reviewed the Glen Lake Neighborhood Study at the July 11, 2016 and August 8, 2016 regular meetings. At both meetings the council referred the study back for revisions to better reflect various items of discussion. (See attached minutes for both meetings.)

The November draft of the Glen Lake Neighborhood Study has been updated to reflect comments from those meetings. The following are specific updates from the August 8th meeting:

- The council discussed a number of land use options for the Home School site other than residential that could be future possibilities including corporate office campus, institutional use (possibly post-secondary) and preservation of portions of the property. In any land use scenario, the council discussed the city would be seeking opportunities to preserve some of the more significant resource areas of the property through various partnerships and other arrangements. To acknowledge various land use possibilities for the Home School property, the following language was included on page 28:

  > The location of the Home School site along County Road 62, its proximity to residential neighborhoods and Glen Lake suggest that residential development is a logical development pattern. Ultimately, there are other land uses that could provide benefits to the community and the surrounding environment. A signature corporate office campus or institution may be as desirable as residential development. As described earlier, community involvement in future use of the site will need vetting. Until that time and for purposes of this study, residential development options are evaluated.

- The council commented that the use of the term “guiding principles” was somewhat strong to describe desired elements of future development scenarios. The study has been revised to use the term “considerations” to describe these scenarios.

- Concerns about water quality has been part of the conversation throughout the review. New language is included in a few areas of the study to reinforce the need to consider practices, improvements and other approaches.

  Added the following bullet on page 14 under “Glen Lake”:

- Evaluate opportunities to improve the quality of surface waters that flow into Glen Lake.

Added the following narrative to Appendix B:

- Throughout the course of the study, the community has expressed concerns about the water quality of Glen Lake. Over the past three decades, a number of water related studies have been conducted specifically for Glen Lake and the city. Appendix B include previous lake studies and information specifically for Glen Lake for reference and information purposes. They include:
  - The presentation information about lake issues from the August 13, 2015 Neighborhood Group Session.
  - A study of water quality control measures conducted by the University of Minnesota Resilient Communities Project.
  - The 1992 joint study of Shady Oak, Glen and Birch Island Lake levels by the cities of Eden Prairie and Minnetonka and the Nine Mile Creek Watershed District prepared by Barr Engineering.

A revised resolution and study are attached for council consideration.

Staff Recommendation

Staff recommends the city council adopt the resolution endorsing the Glen Lake Neighborhood Study.

Submitted through:
Geralyn Barone, City Manager
Julie Wischnack, AICP, Community Development Director

Originated by:
Loren Gordon, AICP, City Planner

GLEN LAKE NEIGHBORHOOD STUDY

Establishing a Framework for Future Change

MINNETONKA, MINNESOTA

Hoisington Koegler Group Inc.
November 2016

ACKNOWLEDGEMENTS:

City of Minnetonka:

City Council Members:

Terry Schneider, Mayor
Dick Allendorf, At Large
Patty Acomb, At Large
Bob Ellingson, Ward 1
Tony Wagner, Ward 2
Brad Wiersum, Ward 3
Tim Bergstedt, Ward 4

Planning Commission:

Deborah Calvert
Kevan Hanson
Brian Kirk, Chair
David Knight
Sean O'Connell
Heather Odland
John Powers

Community Planning Staff:

Julie Wischnack, AICP
Community Development Director

Loren Gordon, AICP
City Planner

Susan Thomas, AICP
Assistant City Planner

Prepared by:

Hoisington Koegler Group, Inc.

Special Thanks To:

The Glenn by St. Therese Southwest, for hosting some of the project's community engagement meetings

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City of minnetonka
Where quality is our nature

Hoisington Koegler Group Inc.

Preface

WHAT THIS STUDY IS

The Glen Lake Neighborhood Study is intended to provide a land use framework for future discussions about changes in the area. In recent years, the neighborhood center has seen significant changes with the construction of new housing, new mixed-use buildings, park improvements, and added landscaping, sidewalk and lighting improvements. Past experience in the Glen Lake area and other similar neighborhood centers in Minnetonka have shown that properties that may be vacant and underutilized are likely candidates for conversions for other uses.

WHAT THIS STUDY IS NOT

As a general land use framework, this study does not include a financial component. The ideas presented in the study are concept alternatives, not specific development plans. Accordingly, development proformas are not included nor are potential public funding sources that could be used for added public improvements. As projects are considered in more detail in the future, financial analyses will be completed as appropriate.

The Glen Lake Study also does not include a detailed look at water resources. General information about water resources in the area was presented in the early stages of this study (See Appendix B). Topics addressed included fisheries, aquatic plants, lake characteristics, and lake water quality. Additionally, Appendix B also includes information regarding two past studies addressing the Glen Lake watershed: a link to one study completed by the University of Minnesota and a water level investigation prepared by Barr Engineering for the cities of Minnetonka, Eden Prairie, and the 9 Mile Creek Watershed District. Additional studies could be required in the future as properties are proposed for use changes depending on their size and location.

01. OVERVIEW

Project Overview

Over the past decade, a significant amount of change has taken place in the Glen Lake Neighborhood. A number of studies took place from 2003 to 2008. A 2005 market study investigated a number of topics, including can the community support and attract a full-service grocery store and can mixed-use development formats featuring housing situated over ground-floor retail contribute to the area? The answer to both of these questions is a resounding – yes. Lunds & Byerlys now occupies the long standing grocer location providing the neighborhood with a broad range of food products from this premium Twin City merchant. The Oaks Glen Lake Apartments, which features ground floor retail space, expanded the housing opportunities in the area.

In 2014 Kraemer's Hardware store relocated from the north side of Excelsior Boulevard to the Glen Lake Center. Subsequent interest in the reuse of the property, as well as interest in the adjacent businesses, prompted the City to initiate the Northwestern Glen Lake Study. The study, completed in September of 2015, focused primarily on properties along Excelsior Boulevard between Williston Road and Beacon Hill. The study included four distinct community workshops involving almost 150 people. The outcome of the effort was a set of development guidelines that reflect the consensus of residents and property owners who participated in the sessions.

This study, the Glen Lake Village Neighborhood Study, builds off of the work that was completed in 2015 and seeks to establish a framework to guide future discussions about additional future land use changes. It focuses on the examination of a series of parcels that are scattered throughout the general area to explore:

» The establishment of a framework for future change in the area
» Exploration of park, open space and trail opportunities
» The identification of aesthetic and public realm improvements
» Providing overall future land use guidelines

Ideas pertaining to the future use of these parcels that were developed during

Integrating Prior Plans:

Glen Lake Neighborhood Concept Plan - 2003

The plan integrated elements of the land use and public realm improvements identified in the plan including:

» Locations for commercial and retail development
» Intersection improvements

Glen Lake Streetscaping Project - 2008

The project integrated elements of the land use and public realm improvements identified in the plan including:

» Locations for gateway elements, public art, and water features
» Pedestrian and bicycle improvements and connections

Northwest Glen Lake Study - 2015

The study established a list of development guidelines to be used by the City and developers to address shared parking, coordinated and complementary land uses, attraction and retention of existing retail and services, and safe and effective traffic movement.

the planning process were reviewed by a Neighborhood Work Group for feedback before being critiqued by the larger neighborhood.

The Planning Process

The planning process has three primary components.

ORGANIZE THE EFFORT

» Establish base information

EXPLORATION

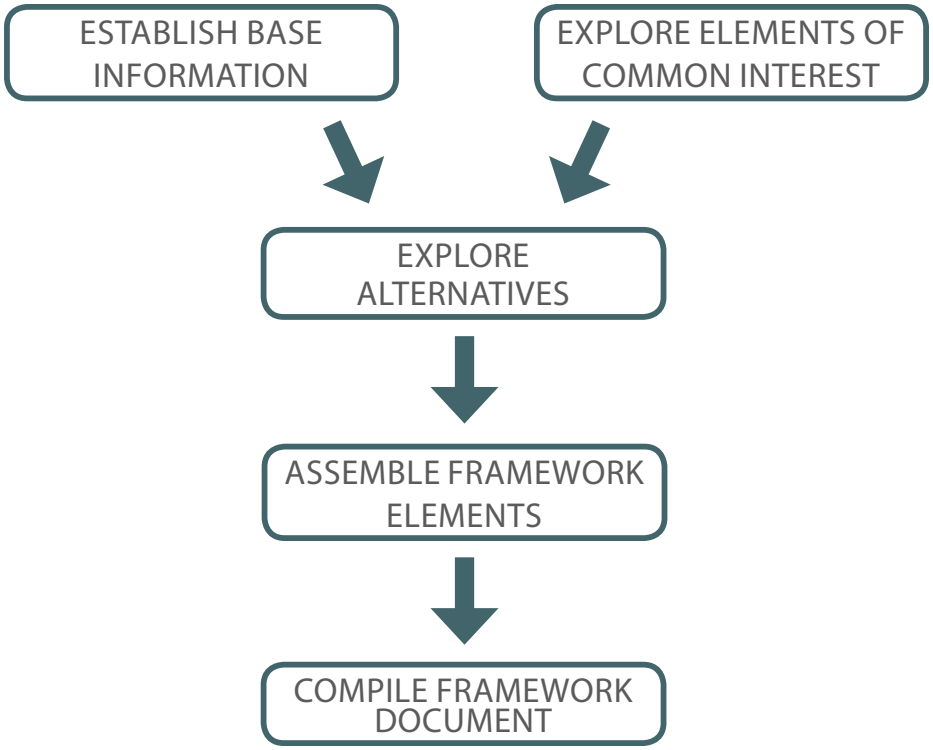
» Explore elements of common interest

» Explore development and redevelopment alternatives, connection and recreational open space opportunities

CREATE A STRATEGIC FRAMEWORK FOR THE FUTURE

» Assemble framework elements

» Compile framework document



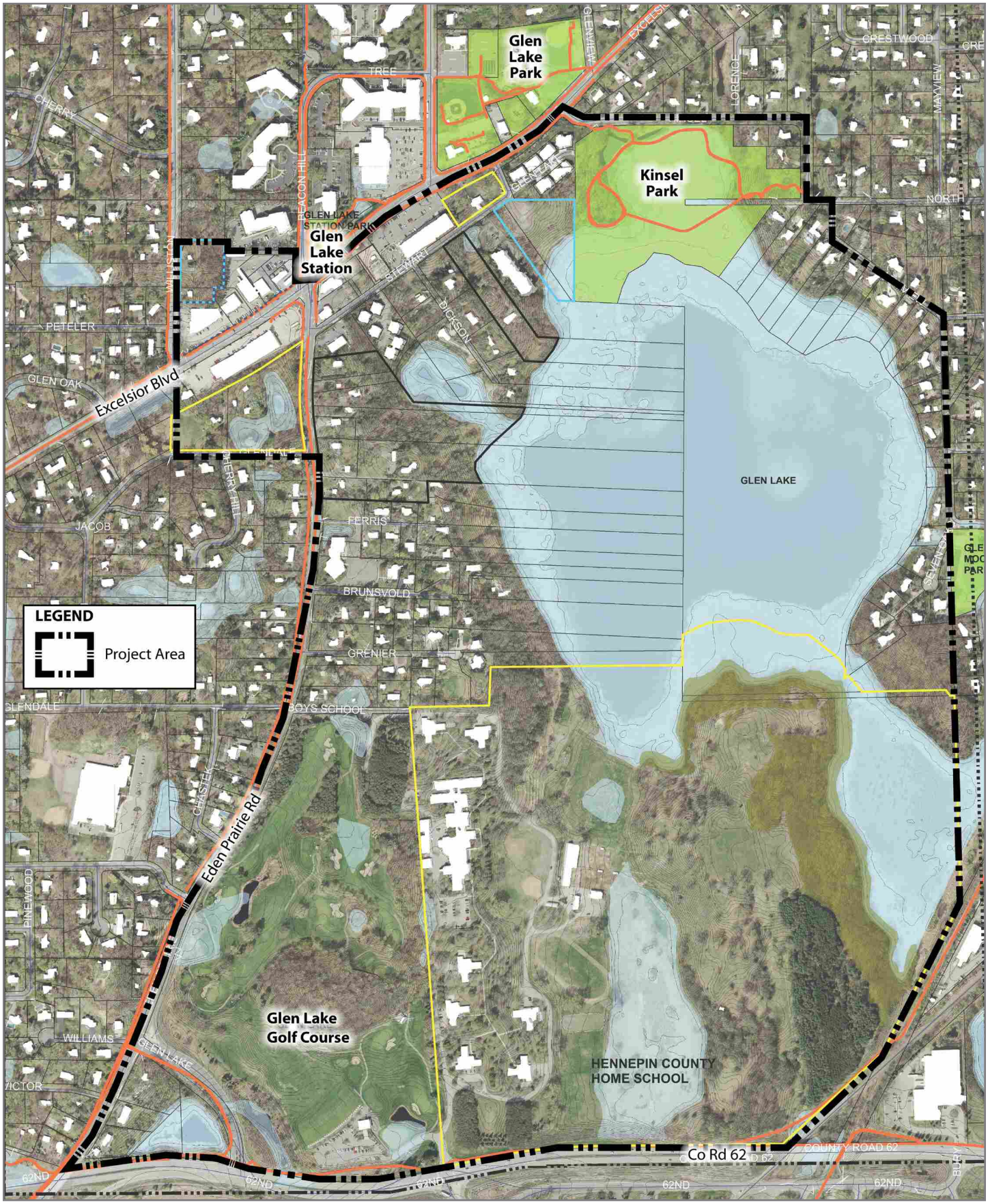


FIGURE 1.1 PROJECT AREA MAP

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02. COMMUNITY ENGAGEMENT

Community Engagement Process

The neighborhood planning process included a series of neighborhood meetings with hands-on workshop opportunities for involvement by area residents and businesspersons. The meetings began in the summer of 2015 and concluded in early 2016 with a community meeting to review the framework ideas for potential future changes. Meetings included broader neighborhood group members and neighborhood liaisons to form a workgroup to help guide the planning process and meeting topics.

In addition, a new communication tool was used to actively engage all stakeholders before, during and after meetings throughout the process. Minnetonka Matters was an interactive tool to continue conversations on planning topics, issues & opportunities, and to comment on proposed concepts throughout the process. This on-line forum allowed for live participation during meetings and provided post-meeting follow-up dialogue for those interested in the process.

The City of Minnetonka hosted an on-line forum with "Minnetonka Matters"

WHAT WE'VE HEARD:

"We need to improve Glen Lake. It's a critical community resource and we need to improve access to the water and protecting the lake's water quality"

Public Meetings

JULY 23, 2015

Meeting Topic: The discussion included a summary of activities to date, the purpose of the current study, goals and a specific schedule of activities. Participants were asked to identify areas of concern, opportunities, and areas of inspiration. Below are links to the discussion topics.

http://minnetonkamatters.com/forums/glen-lake/ideas/opportunities-and-areas-of-inspiration

http://minnetonkamatters.com/forums/glen-lake/ideas/what-are-your-issues-or-concerns

AUGUST 13, 2015

Meeting Topic: The discussion included more in-depth discussion on the following topics: Hennepin County Home School (Commissioner Jan Callison speaking), natural resources including Glen Lake water quality and area parks and trails.

AUGUST 18, 2015

Meeting Topic: Interactive workshops to explored big picture options for future development in the neighborhood, focusing conversations around potential redevelopment opportunities, recreation and open space opportunities.

JANUARY 20, 2016

Meeting Topic: The meeting reviewed the redevelopment scenarios and outlined principles which were then reviewed by the city's planning commission and council.

A summary of each of these meetings can be found in the appendix.

The City of Minnetonka hosted several public meetings engaging residents throughout the process

03. OPPORTUNITIES AND ANALYSIS

Analysis Overview

GLEN LAKE / WATER QUALITY

As part of the planning process Minnetonka Staff presented information to address questions from residents about the health of Glen Lake which included:

- ***Fishery conditions:*** Dominated by small pan-fish, fish population heavily influenced by occasional winter-kill events
- ***Vegetation conditions:*** Diverse NATIVE aquatic plant community
- ***Water quality:*** Fluctuates, but is generally in line with other area lakes
- ***Impact of development:*** Recent area stormwater improvements are helping mitigate the impact of runoff from roadways and new development, but the lake still receives a large amount of contaminates from surface water runoff originating from older, established area land uses
- ***What residents can do to help improve the quality of Glen Lake***

Glen Lake 1946

Glen Lake 2012

TRANSPORTATION AND ACCESS

Development areas have direct access to a robust transportation network, with east west connections via Excelsior Boulevard and County Road 62, and Eden Prairie Road connecting north south. Transit service occurs along Excelsior Boulevard with express service to Minneapolis, and a planned LRT station at nearby Shady Oak Road.

HENNEPIN COUNTY SITE

Very preliminary conversations are occurring about the long-term future of the Hennepin County Home School property. Should the property ever become available for some other use, the site has many features that could make it attractive for redevelopment.

The Home School campus sits on the west side of the property. The majority of the property currently consists of open space. Large stands of mature pine and oak forests bound the site to the east and portions of the south, while Glen Lake and Glen Lake Golf Course border it on the north and west. The site boasts a rolling scenic natural landscape similar in character to an oak savannah with beautiful views throughout the site and good access to natural resource and recreational amenities. Access to the site is via an existing entrance at the southwest corner of Country Road 62, or in the northwest corner off a small dead-end residential road (Boy School Road).

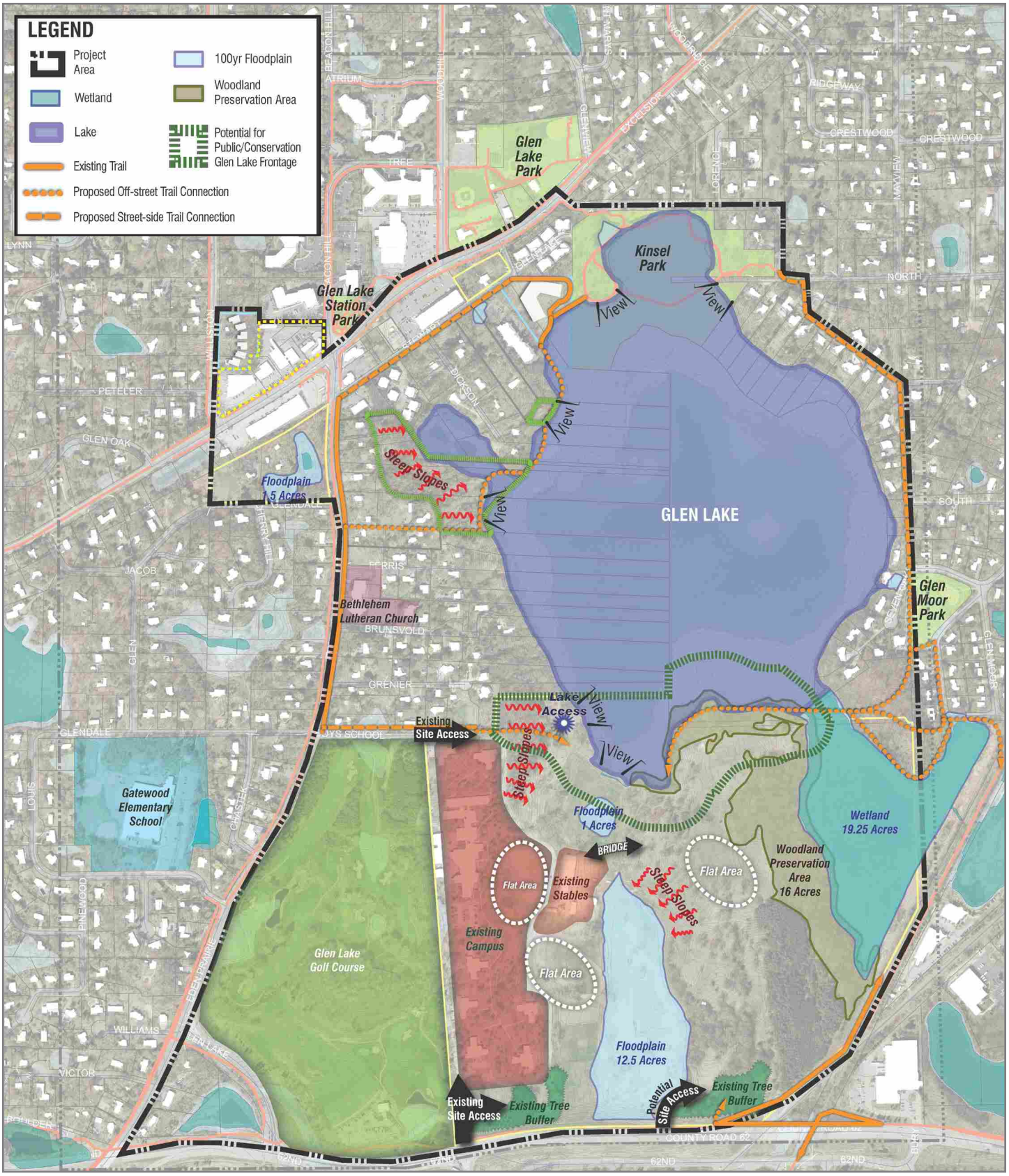


FIGURE 3.2 AREA ANALYSIS MAP

Opportunities and Areas of Inspiration

As part of the community engagement process, public meetings were held to allow residents to identify existing natural resources and community assets that are important to the success and vitality of the community. These were broken down into the following two categories:

DEVELOPMENT/LAND USE

Land use and development patterns are a sign of the community character and vitality and often signal level of investment by local residents. The Glen Lake community identified these land use and development opportunities:

- New development has been successful and relatively well received
- Desire for a wider range of housing options that make the area attractive to a broader spectrum of people
- Interest in a wider range of retail options, either into existing buildings or as redevelopment of under-utilized sites
- Desire for more park and recreation options, including both active and passive recreation
- Take advantage of existing park and open space resources, and improve what is already in place
- Glen Lake is a substantial and under-utilized natural resource
- Potential for connections to regional trails and transit
- Area has a lot of housing options for seniors
- Good variety of local businesses (grocery, hardware, post office, etc)
- Local business owners are active in the community
- Area housing is affordable

Pedestrian crossing improvement at Woodhill Road and Excelsior Boulevard

AMENITIES/PUBLIC REALM IMPROVEMENTS

The public realm is an important component of a healthy neighborhood; it provides a sense of place and important public spaces for gathering and recreation. Glen Lake residents identified the following elements:

- Existing sidewalks and trails are frequently used
- Abundant area wildlife, particularly around Glen Lake
- Recent roadway improvements have added to the sidewalk and trail network and improved crossings of major roadways
- Golf course is an important community destination and resource
- Hennepin County site could be a substantial community resource, particularly for making a 'lake loop trail' and providing access to open water
- Proximity to LRT and Regional trails is something that should be more fully explored
- Area has good connections to major transportation infrastructure
- Glen Lake Station Park was renovated in 2009 and is frequently used by residents

WHAT WE'VE HEARD:

"[The Glen Lake neighborhood] needs development that fits the existing character and feeling of the neighborhood"

Residents at a public meeting provided their input on opportunities and constraints in the project area

Community Issues and Concerns

Local residents were also asked to voice their concerns about existing local development patterns, land use, amenities, and natural resources to provide a clear picture of what isn't working in the area.

DEVELOPMENT/LAND USE

Development that doesn't fit the scale, character or use of a neighborhood or land uses that have not aged gracefully or no longer provide the highest and best use of land can detract from a neighborhood's character and economic health. Area residents identified the following concerns regarding land use and development:

- Substantial amount of density already in the area, concern that development isn't matching the existing scale and character of the neighborhood
- Traffic congestion during peak periods can be problematic for residents
- Development and redevelopment need to address the lack of architectural character and attractiveness of some of the existing buildings
- Adequate parking and access for local businesses is lacking
- The area lacks a destination to draw in outside visitors
- Support and retain existing local businesses and employers
- Minimize the impact of development and redevelopment on Glen Lake
- Streetscape improvements are needed to make the sidewalks feel more pleasant

AMENITIES AND NATURAL RESOURCES

Just as high quality public spaces and natural resources can add interest and energy to a community, so too can they harm that community when those spaces and resources become uncomfortable, degraded, and unattractive. Community members identified the following areas of concern:

- Need to provide more transportation/transit options for local residents
- Pedestrian crossings on busy streets feel unsafe
- Sidewalk network is sporadic and disconnected in areas
- Certain areas are poorly lit and lack good visibility and safety
- Need to address the water quality and access concerns of the neighborhood's most prominent and valuable resource, Glen Lake
- The neighborhood has no sense of entrance, nothing marks your arrival into the neighborhood
- Local parks are under programmed and under-utilized, lack appropriate programming for residents, don't fully utilize natural resources
- General lack of plaza/public space on Excelsior Boulevard
- The neighborhood needs a coherent senses of identity/place
- Strengthening existing sidewalk and trail network connections to surrounding destinations and natural resources
- Create a loop trail system around Glen Lake
- Protect existing wildlife and natural resources

04. LAND USE AND PUBLIC REALM IMPROVEMENTS

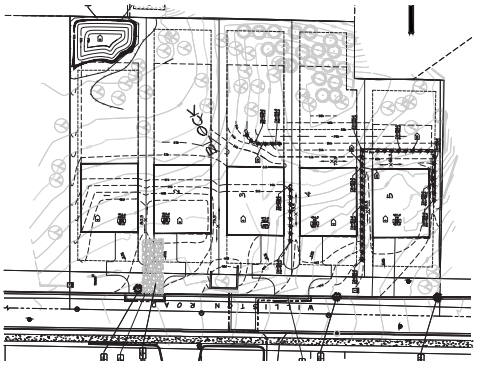
Land Use

In the early stages of the planning process, a high-level review of all of the parcels in the study area was conducted. The vast majority of the Glen Lake neighborhood area includes various types of housing and commercial development that is firmly established and has been in place for many years. Other parcels are likely to change or may change over time.

Parcels that are the subject of pending development that have received prior approval from the City were considered as being subject to eventual change. Other parcels that owners and/or developers have expressed ideas and concepts about future development were categorized as having near term development potential. And finally, a third category of parcels was identified for areas where potential change might occur over a longer period of time. Properties in this category are those that have larger land areas or are in locations that could encourage future change. It is important to note that owners of properties in this third category have not expressed interest in development and that the City is not encouraging any specific change to any of these properties.

The purpose of looking at all of these land areas is to address the "what if" situation. Should changes occur in the future, the Glen Lake Neighborhood Study establishes a framework that will help guide discussions between property owners and the City.

Figure 4.3 identifies the properties that were categorized as either pending development, near term development potential or areas that may see change. The following is an overview of each:



Single Family homes proposed at Williston Woods West

Rendering of Zvago Glen Lake Senior Cooperative, now under construction

PENDING/RECENT DEVELOPMENT

Williston Woods West

» Develop two north lots into 5 detached single family homes

Old Kraemer's Hardware Site

» Demolish the existing building, new day care to be constructed

Zvago - Glen Lake Senior Cooperative

» 54 units (4 affordable)

NEAR TERM DEVELOPMENT POTENTIAL

East (south parcel) Site (Approximately 2.5 Acres)

» Townhomes potential similar to the 'Water's Edge' development

» Single family, either on the entire site or as an interior development type paired with townhomes adjacent to Stewart Lane

Central Site (Approximately 11 Acres)

» Townhomes oriented to Eden Prairie Road

» Single family, either on the entire site or as an interior development type paired with townhomes along Eden Prairie Road

AREAS THAT MAY SEE CHANGE

Hennepin County Site (Approximately 146 Acres)

» Townhomes near southern end of site against Highway 62

» Large passive recreation park at the Home School site (lake access, wetlands, trails, interpretative activities)

» Site as regional park and open space, provide active and passive uses

» A mixed development of single family residential in the core and along Eden Prairie Road and apartments along Highway 62 with integrated park space along Glen Lake shoreline, potential PUD style development

» Single family homes at north end and in core of site, leaving space for park/natural area on east and north end along Glen Lake

» Trails on Home School site, especially along lake, as part of large housing development

» Create trails within a large park, particularly to provide access to the south shoreline of Glen Lake

West Site (Approximately 5.5 Acres)

» Single family residential on the west/south side of the site

» Better connect property to Excelsior Blvd. through commercial site to north

» Preserve existing farm

East (north parcel) Site (Approximately 1 Acres)

» Ideal location for retail development

» Potential location for restaurant

» Potential park use

» Mixed use building on site as extension of mixed use to the west

» Potential for commercial office

NORTHWEST GLEN LAKE PROPERTIES

These properties were previously studied by the community for redevelopment. Residents expressed interest in the following use(s):

» Retail in the middle and east end of the properties

» Bank could be an optional retail use at the eastern corner of the site

» Restaurants could be an optional use

» Develop properties with shared underground parking

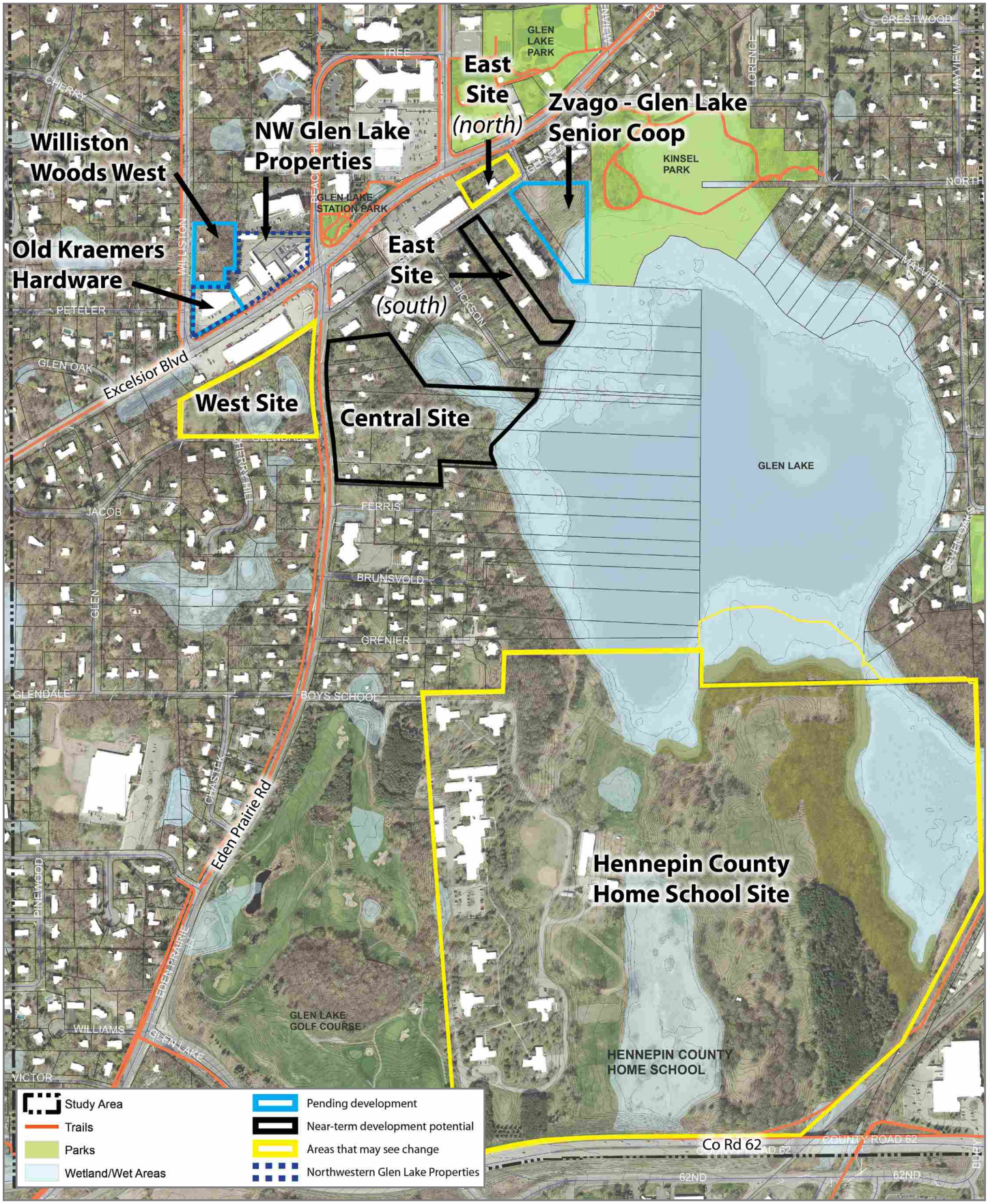


FIGURE 4.3 DEVELOPMENT SITES MAP

Public Realm Improvements

Input on public realm improvements came from the community, city staff and a review of previous public realm planning done for the area. Those recommendations are as follows:

KINSEL PARK

» Safety/lighting issues where trails exit park on east side onto Mayview Road
» Trails through park are difficult to use for due to poor surface conditions
» Benches and tables are needed in conjunction with a small/simple shelter
» Planting to create more interest (gardens, rain gardens, orchard, etc.)

GLEN LAKE PARK

» Improve crossing from Glen Lake Park to Kinsel Park across Excelsior Boulevard
» Gateway opportunity near Glen Lake Park along Woodhill Road

STEWART LANE

» Traffic volume issues with development, need for traffic calming and management of cut-through movements

EXCELSIOR BOULEVARD

» Entry feature opportunity at NE corner of Williston Road and Excelsior Boulevard
» Improve the crossing at Excelsior Boulevard and Woodhill Road, unsafe despite recent improvements
» Improve biking conditions between Glen Oak Street and Glenview Drive
» Lighting improvements east of Kinsel Park
» Improve lighting between Williston Road and Beacon Hill Road
» More seating, benches and tables in conjunction with restaurants/retail
» Potential public art/ place making/neighborhood identity opportunity on the NE corner of Beacon Hill Road and Excelsior Boulevard
» Gateway or place making element to announce arrival into Glen Lake area
» Post office difficult to access
» Vegetation/planting to screen power station

WOODHILL ROAD

» Needs improved lighting, too dark

HENNEPIN COUNTY HOME SCHOOL SITE

» Site could have enhanced wetland areas, with potential for interpretive/ interactive plant centric programming

GLEN LAKE

» Create a loop trail that goes around Glen Lake, if possible
» Provide a connecting trail along the eastern and southern edges to connect north trails (Kinsel Park) to eastern and southern trail system
» Evaluate opportunities to improve the quality of surface waters that flow into Glen Lake

OTHER

» Parking along Tree Street is a concern

WHAT WE'VE HEARD:

"Kinsel Park could be a lot more than it is, there's just not much to do there now. It needs more lighting, better trail surfaces, seating, a place to gather like a picnic shelter, and most importantly better access to Glen Lake"

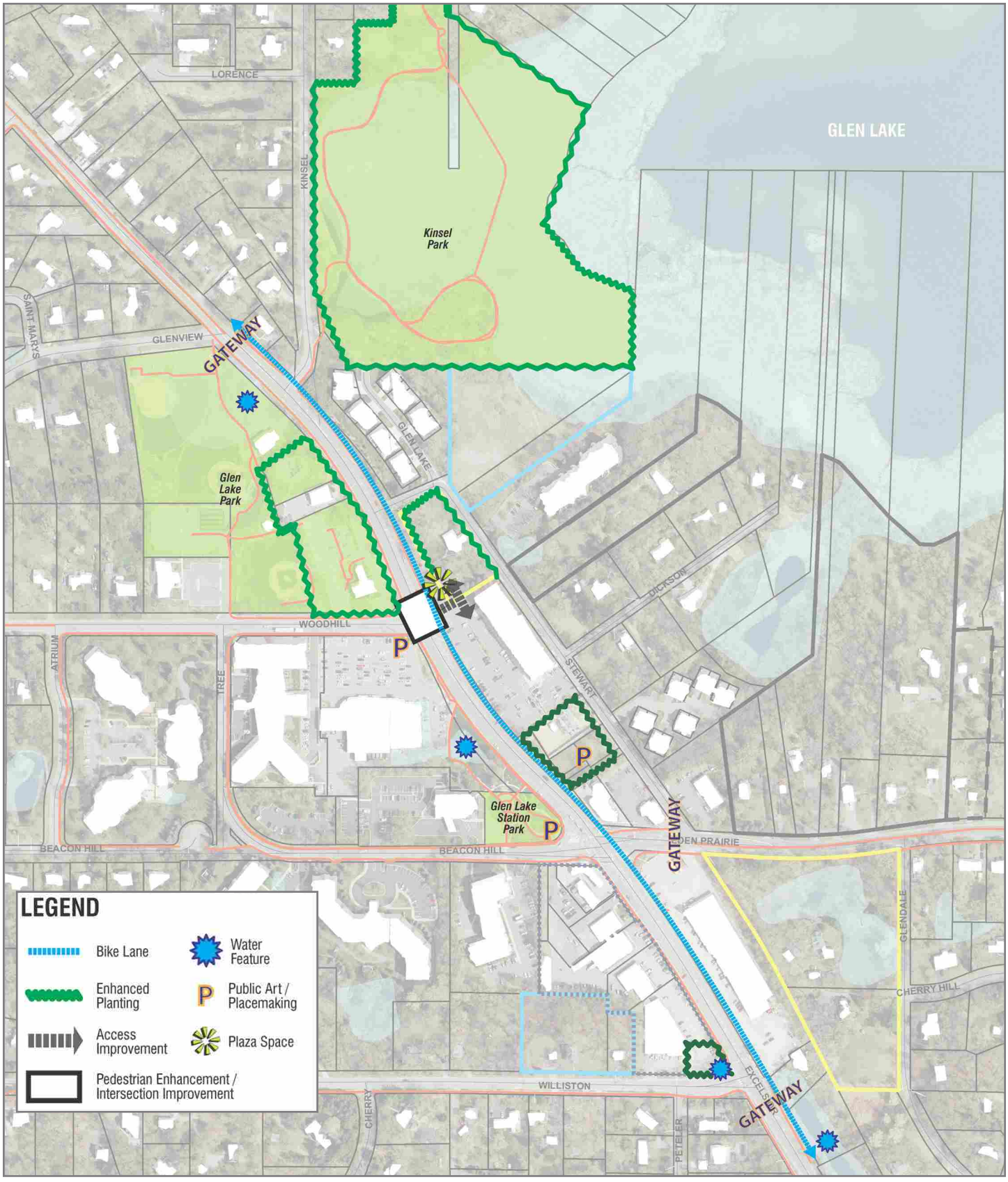


FIGURE 4.4 PUBLIC REALM IMPROVEMENTS

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05. REDEVELOPMENT CONCEPTS

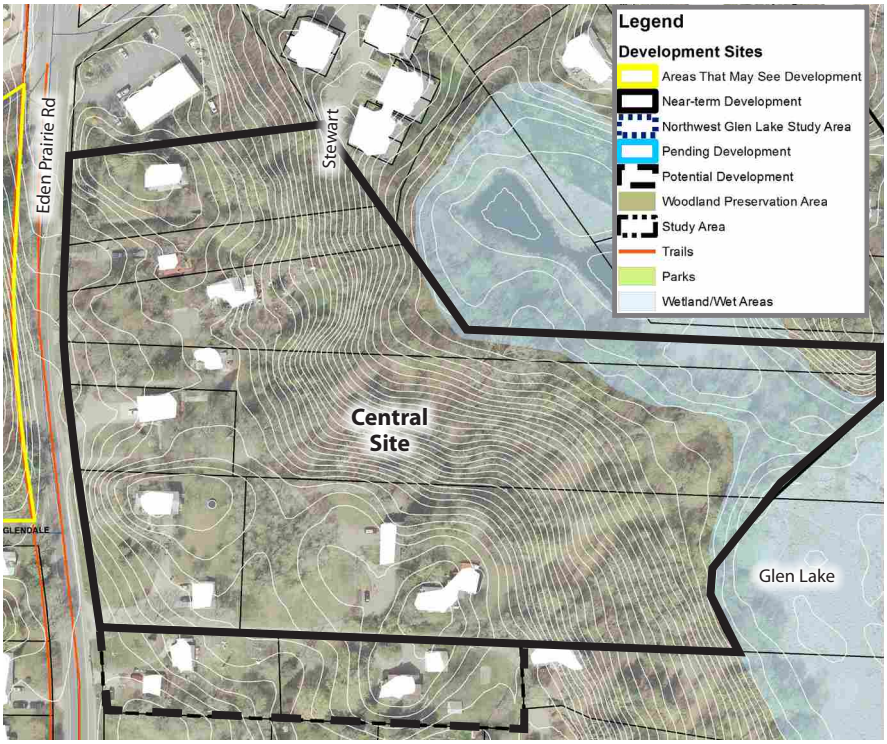
The following redevelopment concepts represent possible redevelopment ideas and will be used as a framework for discussions with developers or property owners who bring forward ideas and proposals. **No development plans are currently proposed for these sites.**

Central Site

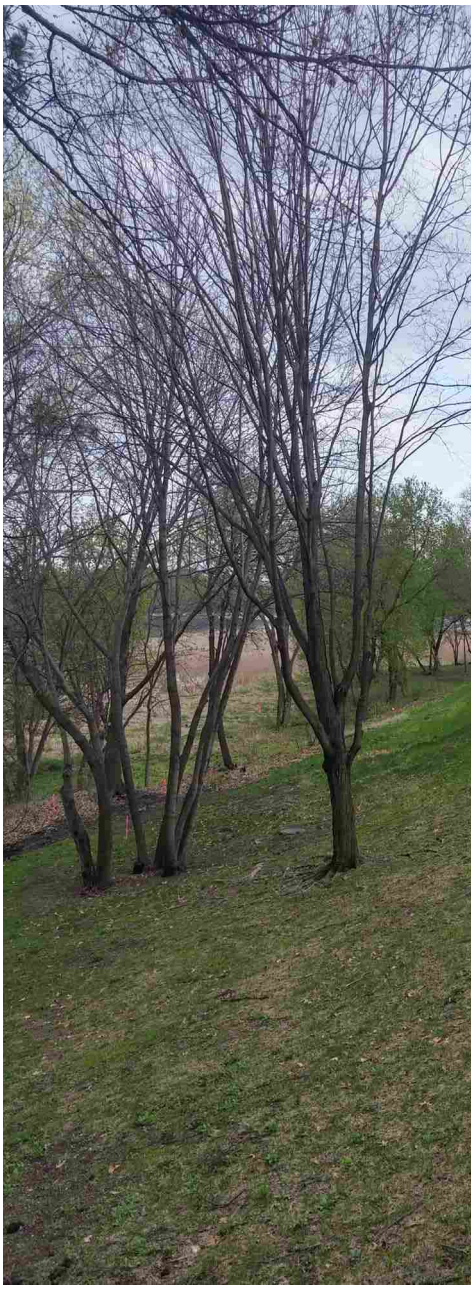
OVERVIEW

The Central site is located east of Eden Prairie Road south of the commercial node in the Glen Lake Neighborhood. This study site extends from the Glen Lake Family Dentistry south to Ferris Lane. The eastern boundary is created by Glen Lake and a wetlands complex to the northeast. The study area consists of 7-9 single family lots of varied size, age and condition. This site has seen development pressure in the past and because of it's proximity to the neighborhood commercial center, it's a large land area and it's adjacent to Glen Lake.

The two concepts show different approaches to housing product types, but generally maintain the same development pattern with a singular, realigned access to align with Glendale Street and two cul-de-sac feeding development sites. The areas running north/south along Eden Prairie Road are envisioned to have villas or attached townhomes in order maintain a narrow development depth and preserve as much of the woodland hillside as possible. The southern street leg would be comprised of single family home sites and would provide access to the existing homes to the southeast of the study site. Lots would remain compact and home sites would be positioned outside of the bluff line to preserve the existing hillside forest. Concept B shows the potential to expand single family housing to the south off of the southern cul-de-sac should there be developer interest.



Central Site boundary



Woodland preservation is an important component of redevelopment in this area

CONSIDERATIONS

- Focus on residential land use on the site ranging from low density detached to high density attached
- Provide a mix of housing types on the site, including single family home sites, villas and townhomes
- Transition from medium density along Eden Prairie Road to lower density in the southern and eastern portions of the site
- Preserve the existing woodland on the eastern portion of the site
- Preserve the large forested area on the hillside down to the wetland and lake by holding back development and home sites on top of the hill and utilizing conservation easements to preserve the land area as perpetual open space
- Target approximately 50% of the land area to be open space, preserve or park
- Align a singular access point with Glendale Street
- Control and route stormwater away from the lake, back toward the west
- Provide enhanced pedestrian connections along the east side of Eden Prairie Road, connecting back to the commercial core
- Explore the opportunity for additional trail connections through the woodland to connect back with Dickson Road, or to the south ultimately connecting to the Home School site
- Maintain access to existing homes to the south through shared access easements
- Explore the potential for additional single family housing lots south of new roadway (Concept B)

SUGGESTED LAND USES

Attached townhomes and stand alone villas were explored for this site to transition from the existing single family housing to the south, north to the commercial land uses. These uses provide smaller lot sizes and the ability to preserve more land as open space possibly through conservation easements.

Compact single family homes

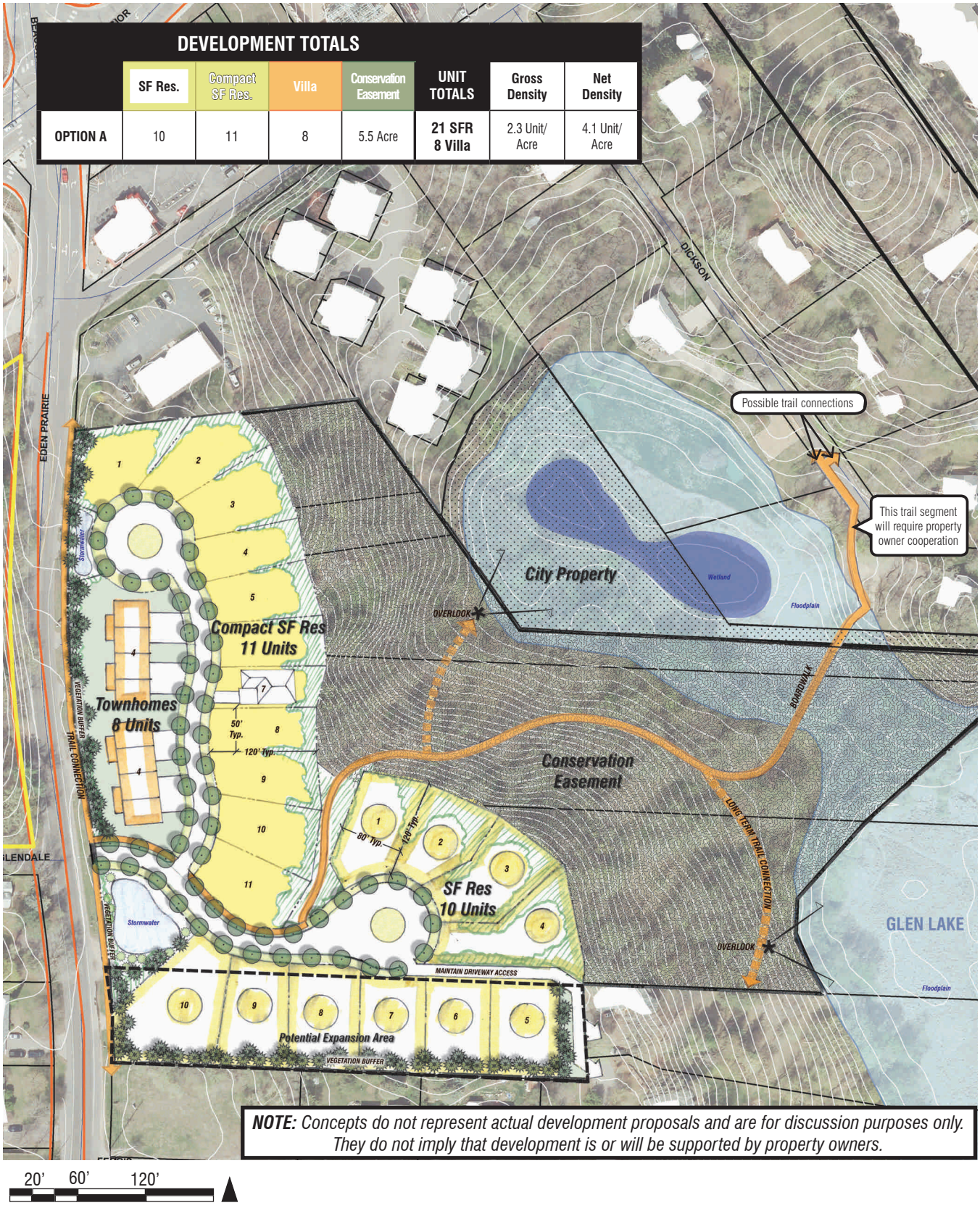


FIGURE 5.5 CENTRAL SITE - CONCEPT A

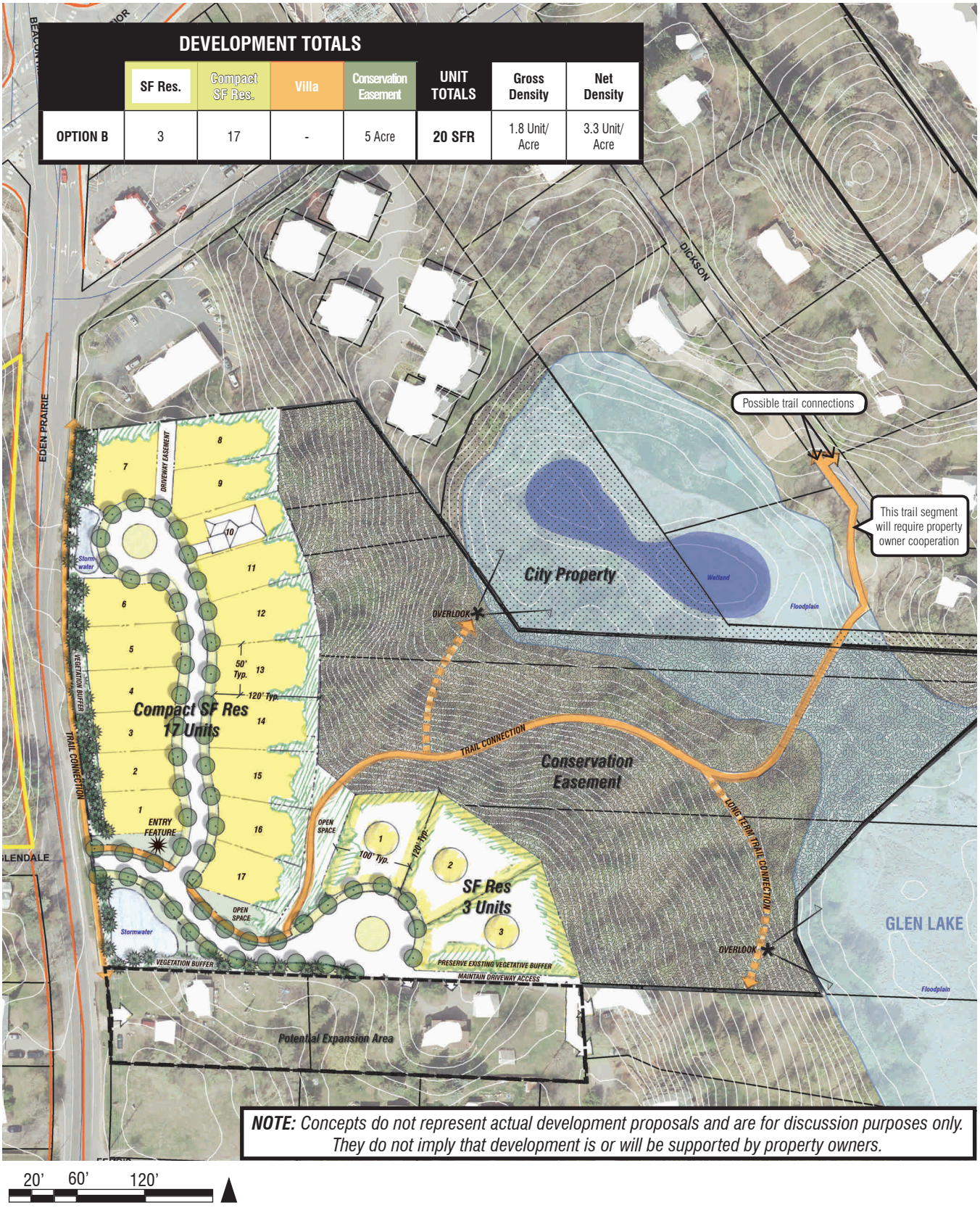


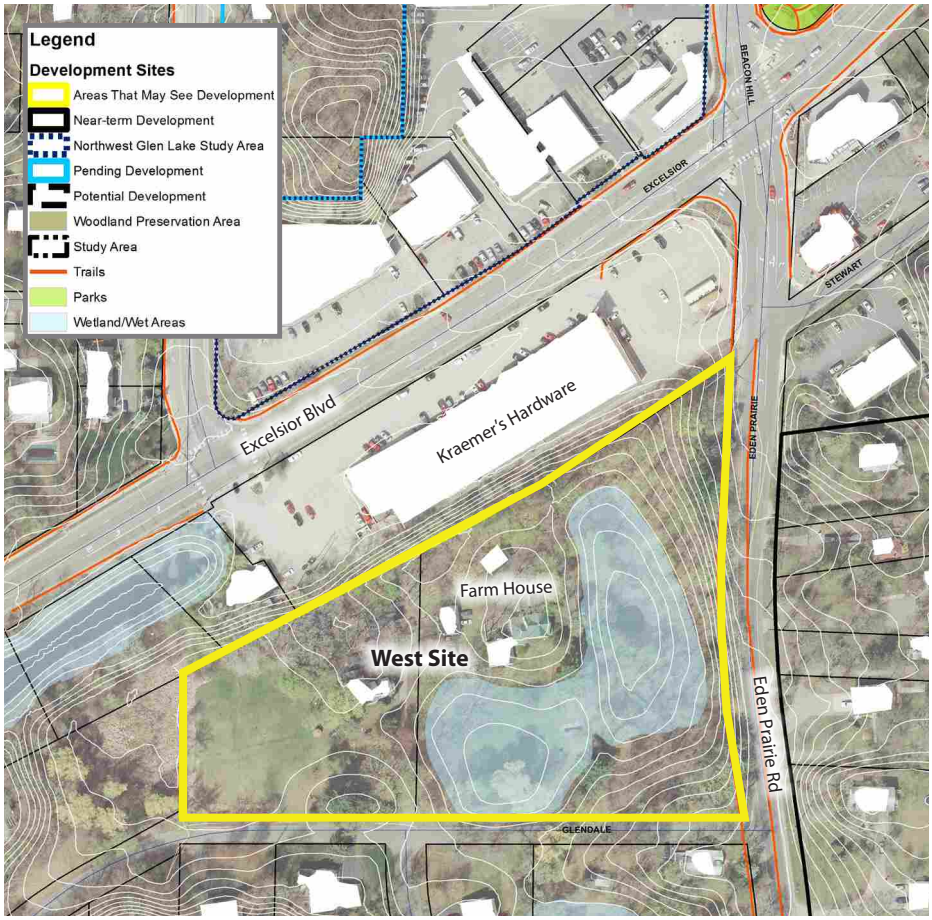
FIGURE 5.6 CENTRAL SITE - CONCEPT B

West Site

OVERVIEW

The West Site is located at the southwest corner of Excelsior Boulevard and Eden Prairie Road. It is a large, contiguous parcel of land with an old farmstead situated in the center of the site. The property owners recognize the historical and unique character of the wooded property and expressed their intention to retain the site in its current use and configuration.

During the course of this study, the West Site was explored for differing configurations of single-family homes or townhomes with emphasis on preservation of wetland and trees and creation of pedestrian connections. Comments were provided, as noted in the meeting summary in Appendix A. However, based on the articulated preference of the owners to retain the property as is, development concepts for the property were not advanced in this study for further consideration.



West Site boundary

East Site

OVERVIEW

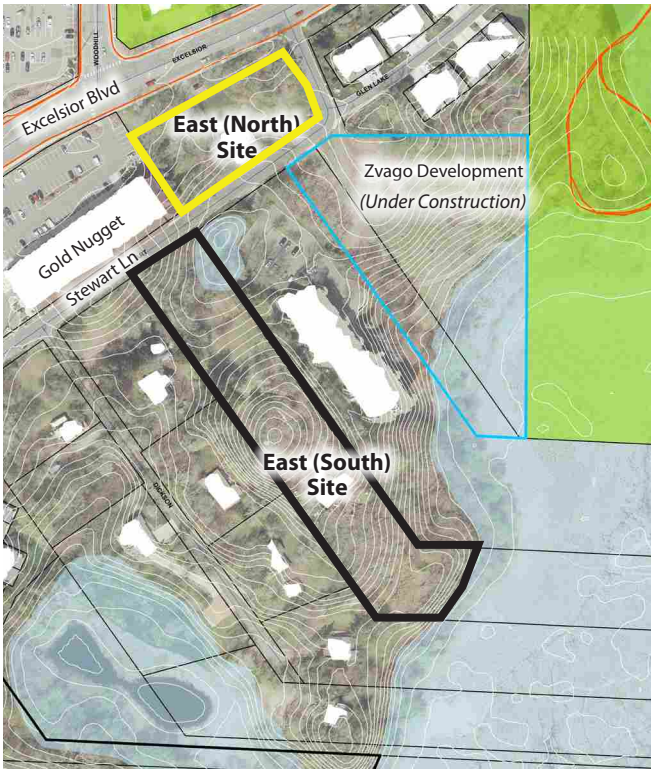
Looking south into the East (North) Site

The East Site is comprised of two distinct areas, the first (South) is a narrow sliver of land extending from Stewart Lane southeast to Glen Lake. The second (North), is a smaller site nestled between Excelsior Boulevard and Stewart Lane just east of the Gold Nugget restaurant.

The Commercial / Mixed Use Site (North) along Excelsior Boulevard provides a great opportunity as a gateway to the commercial district in the Glen Lake Neighborhood. Two concepts explore the possibility of a stand-alone commercial/ office development and the other a vertical mixed use project with ground level retail and housing above. Access to this site must be considered in conjunction with the recently completed development to the east to potentially share a joint access to minimize the number access points to Excelsior Boulevard and keep traffic off of the much narrower Stewart Lane.

Looking south into the East (South) Site

The Residential Site (South) is challenging for development due to the narrow width of the parcel, but it does have access to Stewart Lane and offers views of Glen Lake on the southern portion of the property. The concept alternatives explored the development of single family home sites or villa-type towhhomes off of a singular, shared access drive. The five single family home sites would allow for more tree preservation on the larger lots and is suggested based on discussions with the neighborhood working group. Additional trail connections could connect back to Kinsel Park.



East Site boundaries showing the Residential and Commercial/ Mixed Use sites

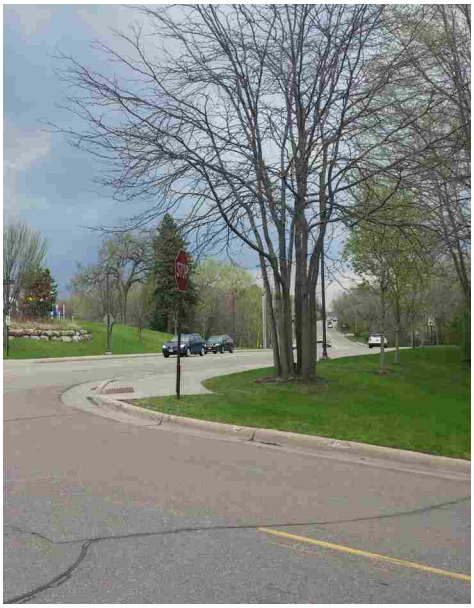
CONSIDERATIONS

Commercial / Mixed Use Site - North

- Focus on commercial office or vertical mixed use with retail on the ground level and residential above
- Locate the building toward Excelsior Boulevard with parking to the south or under the building
- Investigate a shared, singular access to Excelsior Boulevard between the proposed development and the property to the east
- Design the access as a driveway, not as an extension of Woodhill Road
- Provide pedestrian connections along Excelsior Boulevard and Stewart Lane
- Explore a pedestrian link between the Gold Nugget and the proposed development
- Treat the northeast portion of the property with high quality architectural features and landscaping to create a sense of entry to the commercial district

Residential Site - South

- Create a narrow lane along the western boundary of the site for development access and pedestrian connectivity
- Explore single family housing sites or villas on the property
- Preserve trees to the extent possible, particularly at the entry to the property along Stewart Lane and along the shoreline of Glen Lake
- Reduce grading on site by matching street and housing finished floor elevations to existing contours and collecting stormwater in locations shown on plan
- Explore a trail connection to Kinsel Park along the shoreline of Glen Lake in conjunction with easements with adjacent development
- Utilize dark sky compliant lighting to minimize light pollution



The Commercial/ Mixed Use Site is an important site functioning as the gateway to the commercial area of Glen Lake Neighborhood

Stewart Lane's existing narrow roadway

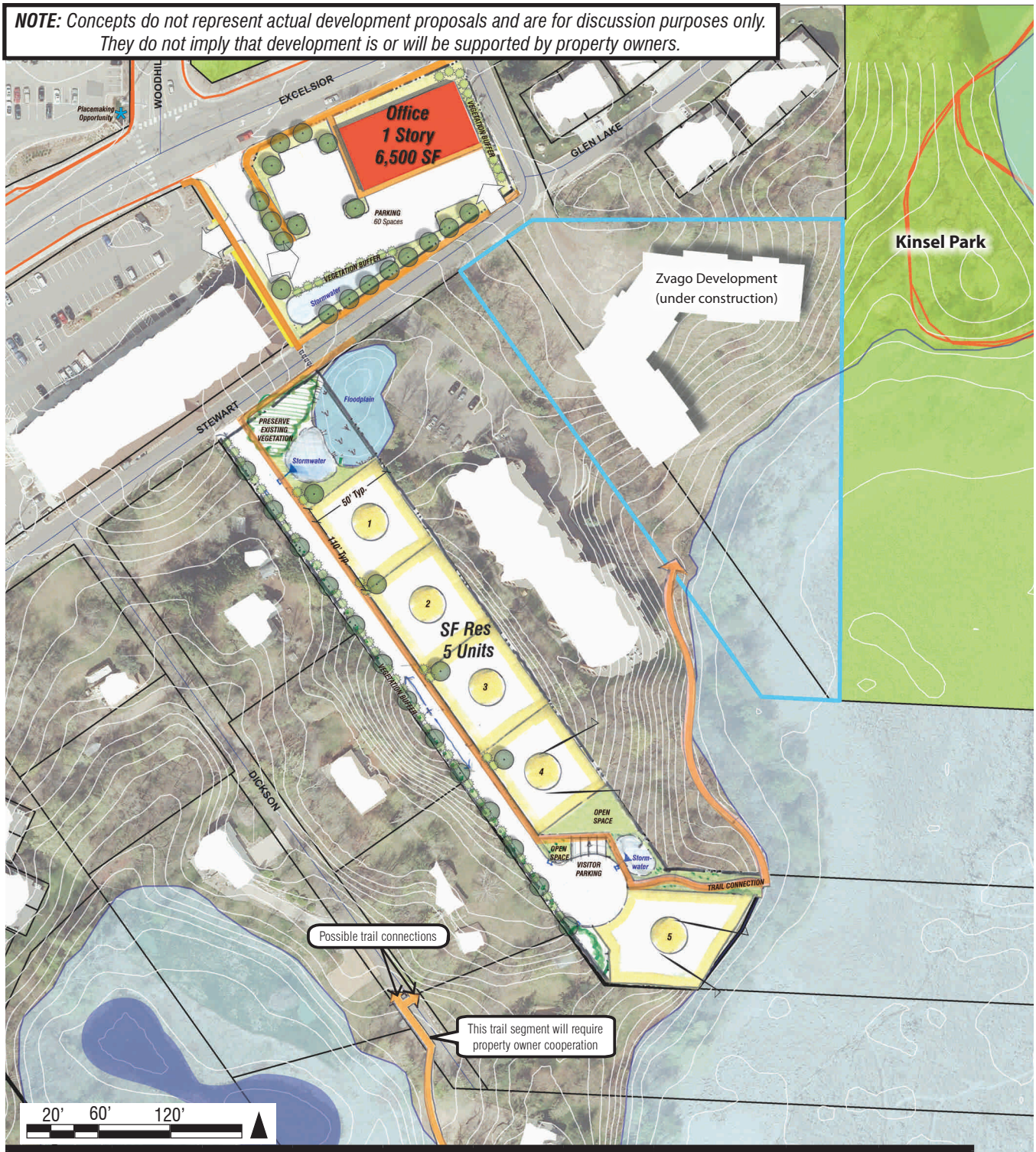
SUGGESTED LAND USES

Traditional single-family housing or villas are suggested as options for the residential site north of Stewart Lane. Commercial office (1-2 stories) or a mixed-use development (3-4 stories) including housing and a commercial business are suggested as options for the site south of Stewart Lane. Given the prominence of this location along Excelsior Boulevard, the buildings should have high quality materials and interesting architectural features.

Commercial Office

Mixed Use

NOTE: *Concepts do not represent actual development proposals and are for discussion purposes only. They do not imply that development is or will be supported by property owners.*

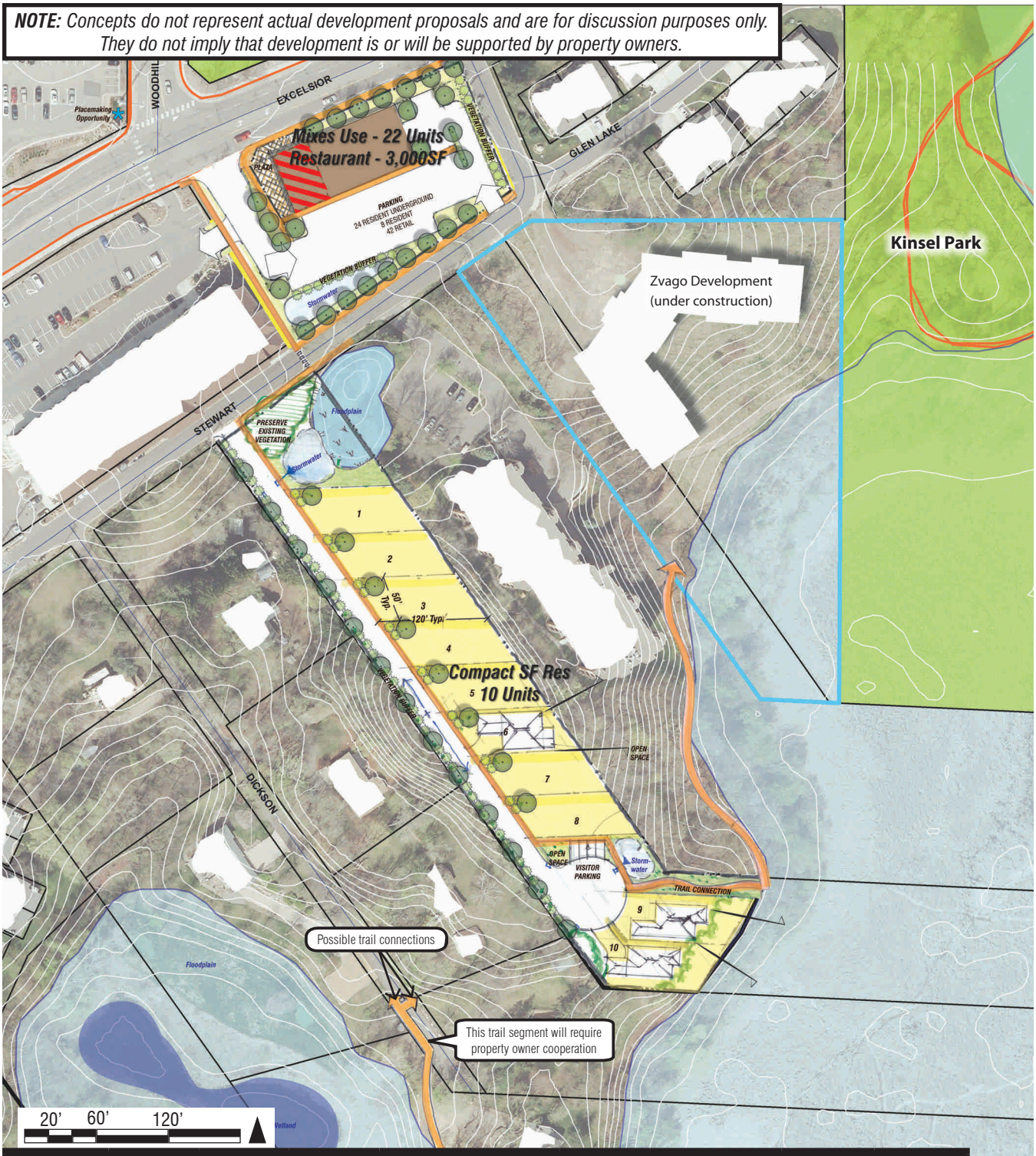


DEVELOPMENT TOTALS

	SF Res.	Compact SF Res.	HDR	Restaurant	Office	Open Space	UNIT TOTALS	Gross Density	Net Density
OPTION A	5 Units	-	-	-	6,500 SF	0.5 Acre	**5 SFR Res 6.500 SF Office**	2 Unit/Acre	2 Unit/Acre

FIGURE 5.7 EAST SITE - CONCEPT A

NOTE: *Concepts do not represent actual development proposals and are for discussion purposes only. They do not imply that development is or will be supported by property owners.*



DEVELOPMENT TOTALS

	SF Res.	Compact SF Res.	HDR	Restaurant	Office	Open Space	UNIT TOTALS	Gross Density	Net Density
OPTION B	-	10 Units	22 Units	3,000 SF	-	0.5 Acre	**10+22 Res 3,000 SF Comm**	9.1 Unit/ Acre	9.1 Unit/ Acre

FIGURE 5.8 EAST SITE - CONCEPT B

Hennepin County Site

Looking East into the Hennepin County site toward the barns

Floodplain/wetland restoration area as viewed from Highway 62

Site woodland preserve and pine forest as seen from Highway 62

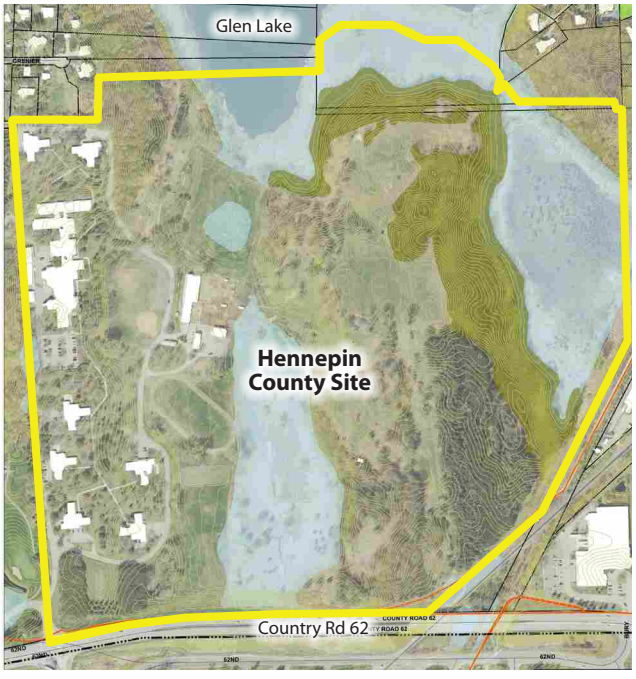
OVERVIEW

Situated on the southern boundary of Glen Lake and north of Country Road 62 is the current Hennepin County Home School. Comprising nearly 146 acres of contiguous land, the site features a mix wetlands, woodlands, open grassland with the primary campus on the western portion of the site adjacent to Glen Lake Golf and Practice Center.

On August 13, 2015 County Commissioner Jan Callison provided an update to the community on the Hennepin County site including reviewing the history of the Home School, the current services at the facility, and then discussed the possibility of partnering with Ramsey County to consolidate the two entities and locations closer to where services are more needed, rendering this site obsolete. The County may be looking to sell the property in the future, thus the reason for the City of Minnetonka to explore potential development scenarios on the property, however no formal time table or commitments by Hennepin County have been established.

The eastern portion of the site has a large wetland, woodland area and pine stand as significant natural features. A central wetland bisects the site with the main campus on the western side and open grassland on the remaining eastern portion. There are two access points to the facility on the western edge near the golf course. During the review process with the community, comments on this site included:

- Try to find a balance between development, and preserving park, open space and wildlife habitat
- Ensure that development is designed sustainably to protect Glen Lake, too much density is a concern
- Create trail connections to and from the site
- Explore a broader park or small commercial use as well



Hennepin County Site boundary

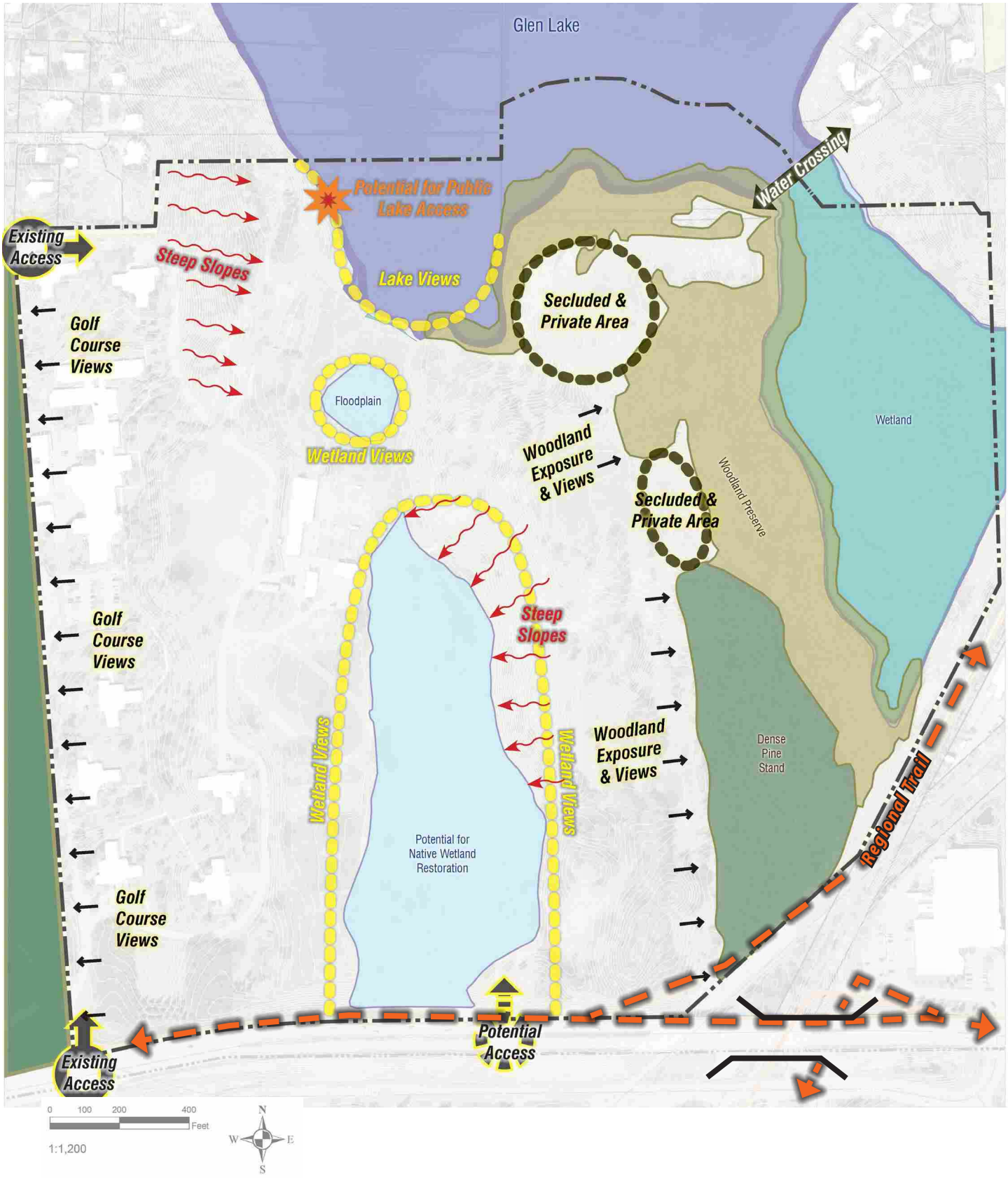
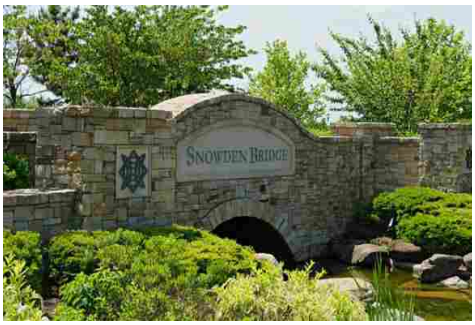


FIGURE 5.9 HENNEPIN COUNTY SITE - SITE ANALYSIS



Connection between buildable areas presents a unique opportunity for an identity bridge feature

BUILDABLE AREAS ANALYSIS

Future options for the evolution of the Home School site might include some form of development, open space or even some possible public use of the property. The Glen Lake Study is focused on providing a land use development framework for the site and does not address the use of the site as open space, park or other public use. The ultimate use of the property will be the result of the interests of the site's owner, Hennepin County, and a larger, more comprehensive examination of the property by the City of Minnetonka.

If the site is ultimately developed for residential uses, plans will need to address the opportunities and limitations posed by the existing topography, tree cover, wetlands and other natural features. The west and east sides of the property are separated by a large wetland complex. The west side is the location of the existing Home School facility and comprises approximately 41 acres of buildable land. The east side is currently undeveloped and is similar in size at approximately 38 buildable acres for a total of 79+ buildable acres.

Access to the site is an important future consideration for development of the site for either public or private uses. Existing access points should remain. A third access point should be explored with the Hennepin County Transportation Department to provide direct access to the eastern half of the property. At the narrowest point between the east and west sides, a roadway connection could be established to link the two areas and to provide better internal circulation and emergency service access. The location may be an opportunity for a signature bridge feature as part of a development.

The location of the Home School site along County Road 62, its proximity to residential neighborhoods and Glen Lake suggest that residential development is a logical development pattern. Ultimately, there are other land uses that could provide benefits to the community and the surrounding environment. A signature corporate office campus or institution may be as desirable as residential development. As described earlier, community involvement in future use of the site will need vetting. Until that time and for purposes of this study, residential development options are evaluated.

The roadway connection between the east and west sides of the property creates a unique opportunity for a signature development feature

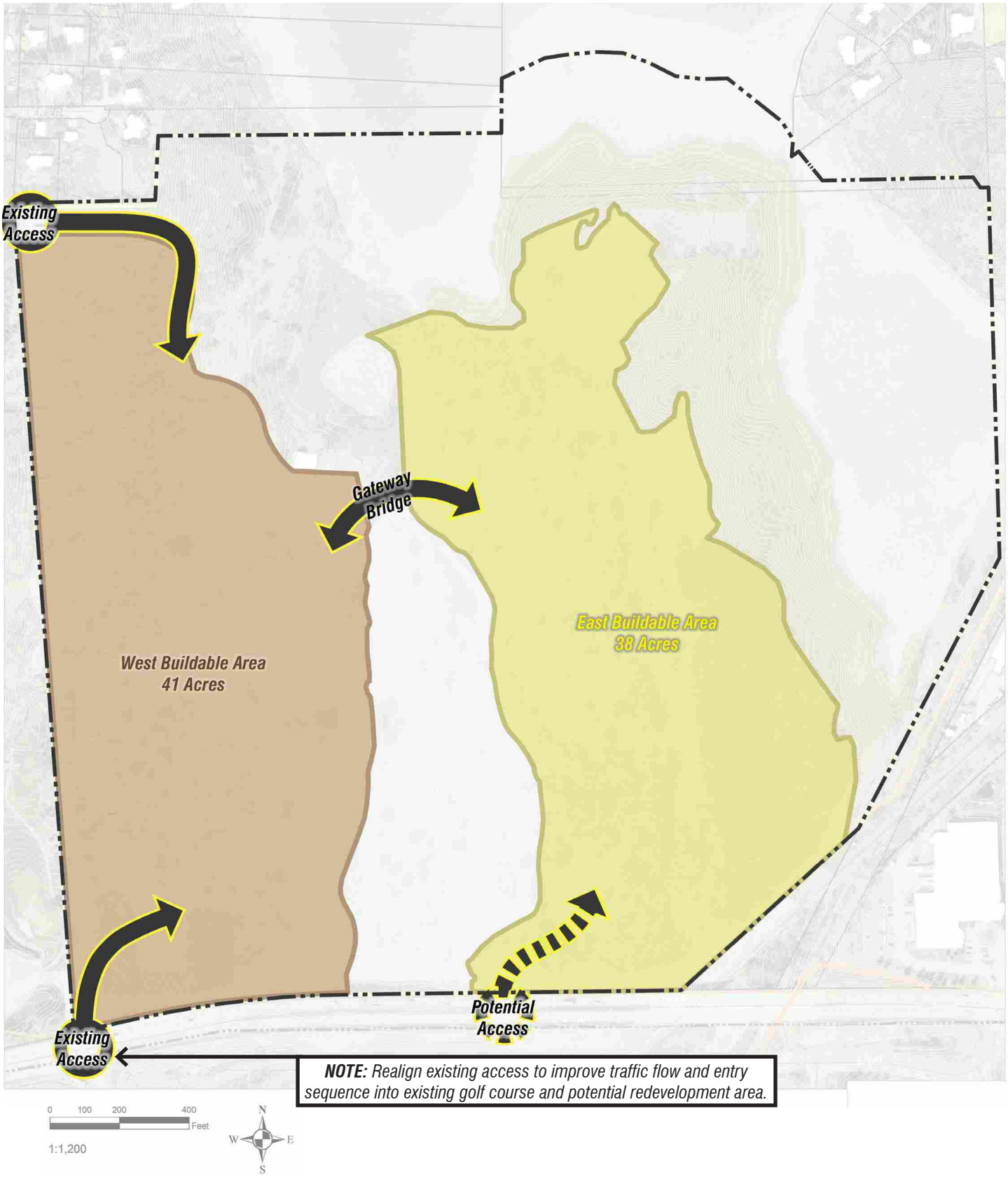


FIGURE 5.10 HENNEPIN COUNTY SITE - BUILDABLE AREAS

CONSIDERATIONS - PARKS, TRAILS & OPEN SPACE

- Allow the existing natural features (wetlands, woodlands, pine groves, topography) to dictate development areas
- Preserve a continuous open space network along the southern shore of Glen Lake, extending to the east and capturing the wetland network and woodland hillside
- Preserve the existing woodland and dense pine stand on the east side of the site as a buffer and wildlife corridor
- Preserve and enhance the surrounding wetlands
- Preserve and enhance the central wetland as an amenity and wildlife corridor
- Target approximately 40% of the land area to be open space, preserve or park
- Create a common, shared dock and beach near existing Home School water access location
- Provide a network of trails linking a singular lake access point, smaller internal, neighborhood scale parks and connecting more broadly to the surrounding neighborhoods and the Minnesota River Bluffs LRT Regional Trail to the east
- Create wetland overlook and habitat viewing areas
- Provide an expanded trail network linking new park features, preserved open spaces, and existing trails and neighborhoods surrounding Glen Lake
- Develop a central open space amenity with wetland restoration, stormwater treatment, and central bridge feature

Develop a singular shared or common dock and beach area for the entire development, preserving the natural shoreline of Glen Lake

Develop an integrated trail network, linking internal amenities with surrounding trails and adjacent neighborhoods

An enhanced centralized wetland can be an attractive amenity for future development

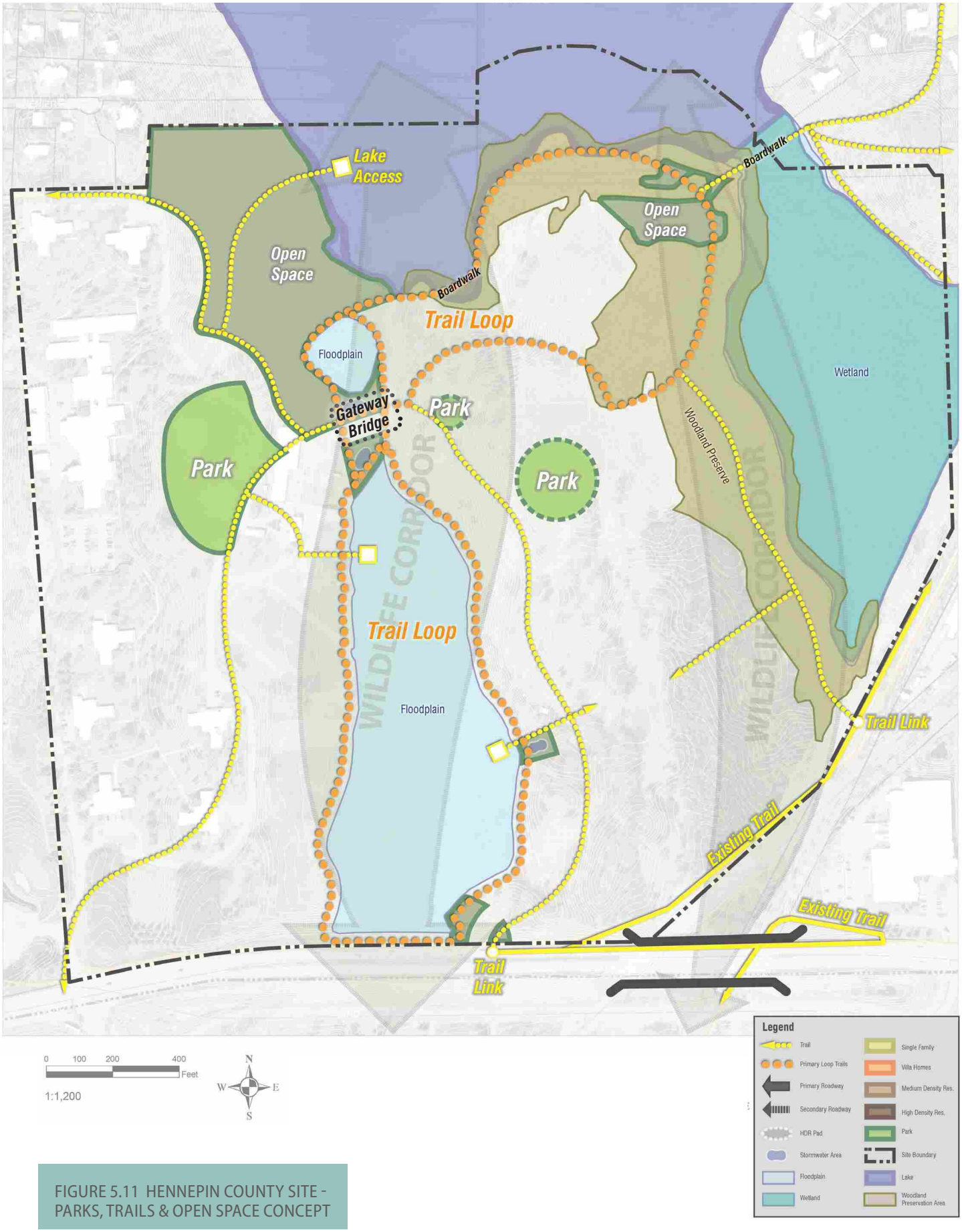


FIGURE 5.11 HENNEPIN COUNTY SITE - PARKS, TRAILS & OPEN SPACE CONCEPT

High density housing is a possibility for this site, either as potential reuse of the existing facility or as redevelopment

CONSIDERATIONS - LAND USE & DEVELOPMENT

- Focus on residential land use on the site ranging from low density detached to high density attached
- Provide a mix of housing types on the site, including single family home sites, villas, townhomes, apartments and condominiums
- Transition from higher density in the southwest portion of the site to lower density in the northern and eastern portions of the site
- Explore options for preserving and reusing portions of the existing campus buildings
- Explore the opportunity for a new southerly access point to Highway 62
- Provide an identifiable loop street network throughout the development

SUGGESTED LAND USES

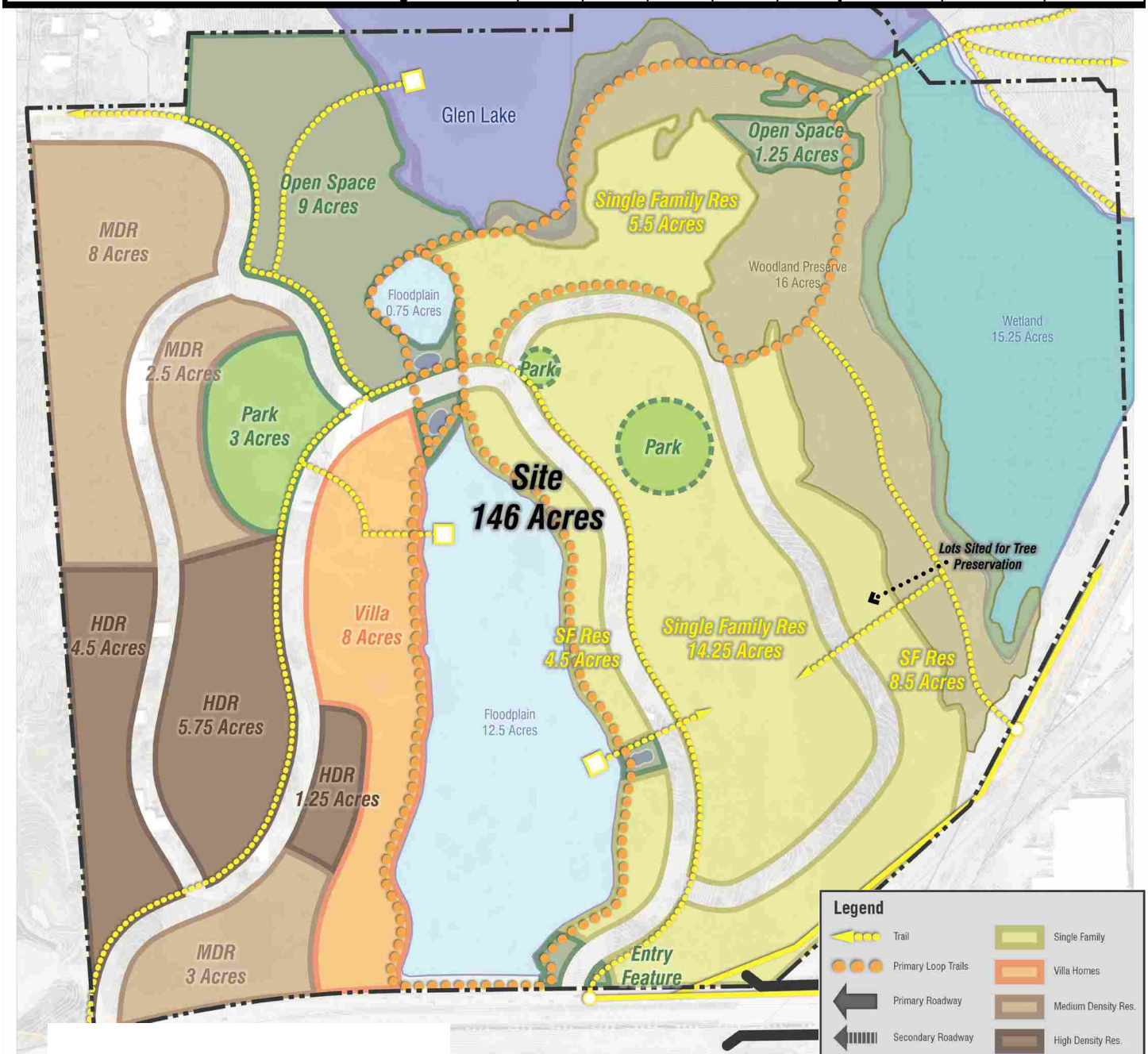
The size of the overall site, and the configuration (East and West sides) allows for a range of residential development on the site. The reuse of portions of the Home School Facility is a possibility as well.

Townhomes or villas are potential products

The eastern portion of the site has the potential for a new single family neighborhood

PARKS AND OPEN SPACE				
Park	Open Space	Woodland	Wetland	Floodplain
3+ Acres	10.25 Acres	16 Acres	15.25 Acres	13.25 Acres
TOTAL 57.75 Acres				

	DEVELOPMENT					TOTALS	Gross Density	Net Density
TYPE	SF Res	Villa	MDR	HDR	ROW			
ACRES	32.75 Acres	8 Acres	13.5 Acres	11.5 Acres	10.25 Acres	76 Acres	4.3 - 5.5 Units/Acres	6.8 - 8.8 Units/Acres
UNITS/ACRES	2.5-3	8-10	10-12	30-40	-	-		
UNITS	82-98	64-80	135-162	345-460	-	626-800 Units		



NOTE: *Concepts do not represent actual development proposals and are for discussion purposes only. They do not imply that development is or will be supported by property owners.*

0 100 200 400 Feet

1:1,200

N W E S

FIGURE 5.12 HENNEPIN COUNTY SITE - POTENTIAL DEVELOPMENT CONCEPT

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06. APPENDIX A

Neighborhood Meeting Summary - July 23, 2015

The following summary is a list of comments submitted by neighborhood residents during a community open house for the Glen Lake Village Center Study.

Opportunities and Areas of Inspiration:

- Creation of large high quality park preferred over development
- Progressive recycling program
- Bicycle connection from trail to Kinsel Park
- Large lot sizes with lots of trees
- Existing hockey rink and track/athletic field(soccer) at Home School
- Retain golf course and ski trails
- Can we repurpose the old hardware store into a new post office to improve access?
- Allow for use of dog grooming building in Glen Lake Park
- Comcast office provides easy access
- Add sidewalks around the Glen Lake Park, bank, and St. Therese
- Alano is a community asset – do they share their parking lot?
- Lots of activity at Optimist Field – skating park
- Love the golf course, retain
- Provide overlook and/or picnic park space at Kinsel Park
- Provide picnic tables for DQ customers and baseball players around NW area
- Love Optimist Park/Kinsel Park
- Retaining grocery store and promoting walkability to other businesses is important
- Need to have a 'shop local' campaign to encourage people shopping in the neighborhood
- Make sure to protect loons and other birds, opportunity to highlight them as a feature
- I like the existing sidewalks and the Gold Nugget
- Keep bank, post office, Gold Nugget, Dragon Jade
- Love/support small businesses in area, would like to see more of them developed in the area Work to attract/establish a program to attract more small businesses
- Need a doctor's office and drug store in the area
- Great play areas for kids. Sidewalks are a great start for improvements
- Fence playground on street side
- Pedestrian crossings and lights would be a step in the right direction
- Retain small town feel
- Proposal to develop Kraemer's, currently not in keeping with neighborhood character, develop at a lower density
- Developed areas are centralized not sprawled out
- Appreciate the lack of fast food and chain style development, still room for café
- Senior housing availability
- Schools – Glenwood, Gatewood, golf course

- Retain cross country skiing in golf course and on Glen Lake
- Support/retain small businesses (DQ, market, liquor, hardware, post office, pet, service)
- Like having sidewalks and park trails and access to bridge over I494
- Lake and Hennepin County land great for outdoor experience
- Improve access to regional trail near LRT, for pedestrians and cyclists
- Preserve trees and open space
- Redevelop the north side
- Eco-friendly green development
- Mixed use with recreational opportunities, single family and multi-family housing connected to lake and golf

Issues and Concerns

- Develop as a park
- With LRT coming close, can there be a loop connection into Glen Lake area?
- If this is developed, keep it as lower density residential (R1) and do not allow more 'high density' like Zvago development
- Is there interest in saving this dying lake? Money needed for project to dredge lake, or at least for weed control
- Shrinking lake, water quality is great but for lower water levels and increase in aquatic weeds
- Water quality has already been tested and studied by watershed and deemed one of cleanest lakes in state
- Miss the old fountain which created more of a gathering place than current water feature
- Traffic congestion is a problem (especially around rush hour) on Excelsior Boulevard at light waiting to make left turn on County Road 5
- Retail and small businesses to create community and foot traffic. Develop the old Kramer's building as soon as possible. Currently being used for bus parking
- There is enough high density housing in the Glen Lake Area?
- Sidewalk to connect Baker Road to Glen Lake. The sidewalks ends at Woodridge, this is very unsafe for pedestrians
- A lot of existing pedestrian and bike traffic without trails
- Difficult to find parking at post office
- Scary walking at night on streets, need more lights
- What exactly brings people to shop in Glen Lake neighborhood?
- Find a solution for green-topped ponds, small lakes, etc
- Need a pharmacy in the area with large numbers of senior residents
- Kraemer building needs aesthetic improvements
- Ball fields are in rough shape. Can we improve these?
- Expanded golf course could ruin water quality
- Don't want to see significant development on the Home School site
- Improve connection to existing bike trails

- Can we improve fishing in the lake?
- Can anything be done to reclaim the lake from weeds?
- Bigger community center with better parking
- Keep post office or relocate to community center site
- Sidewalks on both sides within a ¼ mile of intersection Williston and Eden Prairie Road and Woodhill and Beacon Hill
- Concerned about multi-family homes
- Glen Lake, retain public access
- There is no active public space
- Water level going down in lake
- No community gathering attractions (concerts, etc.) Use of ball field?
- Dock access to water?
- Confusing Excelsior Boulevard crossing
- Parking at post office an issue
- Retain hardware store
- Parking, trees, street congestion and safety
- Glen Lake activity center, what can be done?
- Concerned about health of lake due to development of Zvago
- Safety of auto traffic on Stewart Lane very poor site distance
- More child and family friendly park near ball park, neighborhood gathering place
- Avoid high density shift in housing
- Keep the Glen Lake neighborhood a 'neighborhood' meaning mix of residential, retail, educational, recreation with a small town like feel
- Traffic concern with development behind Kraemer's on Williston
- Schools need connectivity to businesses and lake
- Lack of parking at post office, Gold Nugget, Optimist Park, Glen Lake Activity Center
- Glen Lake and businesses, improve access and connectivity to it
- Reconnect to the lake, can't see or access the lake because of vegetation growth
- Would like easier canoe access to the lake
- What is the Home School site development impact potential on the area?
- Need transportation between Glen Lake and nearby LRT station
- Optimist field to DQ connection improvement
- Woodhill and Beacon Hill intersections with Excelsior are dangerous for pedestrians

Neighborhood Meeting Summary - August 18, 2015

The following summary is a list of comments offered by neighborhood residents during two community open houses held on August 18, 2015.

LAND USE

Pending Development:

Kraemer Site

- Quality restaurants are needed in the area, they would be a good fit on the Kraemer Site
- 4-5 story mixed use on Kraemer's site, transitioning to lower scale retail moving east along Excelsior Boulevard would be good

Williston West Site

- Quality restaurants are needed in the area, they would be a good fit on the Williston West Site

Zvago

- None

Near-term Development Potential:

East(South)

- Potential for townhomes similar to the Water's Edge development on the property
- A mix of single family residential homes and townhomes on the site, with townhomes closer to Stewart Lane
- Potential small park location near Stewart Lane
- A mix of single family residential homes and townhomes on the site, with townhomes closer to Stewart Lane
- Apartments on un-named parcel if they fit

Central Site

- Property has potential for a new retail restaurant
- Townhomes on entire site
- Townhomes on northwest area of the site, transitioning to single family residential (2)
- Single family residential on south and east area of the site, transitioning to townhomes to west and north (2)

Areas That May See Change:

Hennepin County Home School Site

- Large park at the site, potential for consolidated sports fields (baseball, softball, soccer) and passive recreation (lake access, wetlands, trails, interpretative activities)
- 9 hole golf expansion into site (likely not financially viable)
- Site as regional park and open space, provide active and passive uses, Arboretum like setting/program a possibility, could also play host to large outdoor events

- A mixed development with single family residential in the core of the site and along Eden Prairie Road and apartments along Highway 62 with integrated park space along Glen Lake shoreline, potential PUD style development
- Single family homes at north end and in core of site, leaving space for park/natural area on east and north end along Glen Lake
- Trails on site, especially along lake, as part of large housing development
- Create trails within a large park located in the site, particularly to provide access to the south shoreline of Glen Lake (2)
- Townhomes near southern end of the site against Highway 62

West Site

Note: In the early stages of the Glen Lake Neighborhood Study, future development options were explored for the West Site. At the conclusion of the study, no future development options were advanced for the site given the property owner's strong desire to retain the property in its current form. Accordingly, the following comments are included since they were voiced in a community meeting but they are no longer applicable given the decision to exclude the property from further development consideration.

- Property has potential for new retail, including pet hospital and bike related shop if commercial area to the north is expanded down into the site
- Townhomes on the eastern half of the west site
- Small park space in northeast corner of west site
- Single family residential on the west/south side of the west site
- Could west site incorporate commercial project to north for larger redevelopment opportunity with commercial/residential density towards Excelsior Boulevard
- Better connect west property to Excelsior Boulevard through commercial site to north if it redevelops.

East(South) Site

- Retail on the site
- Site as potential location for restaurant
- Potential park use on the property
- Mixed use building on site as extension of mixed use to the west

Northwestern Glen Lake Properties

- Retail in the middle and east end of the properties
- Bank could be an optional retail use at the eastern corner of the properties
- Restaurants could be an optional use on the properties (2)
- Quality restaurants are needed in the area, they would be a good fit on the properties

Other Sites

- Existing Dairy Queen corner site(s) would be a great location for a restaurant
- Quality restaurants are needed in the area, they would be a good fit on the commercial properties across Excelsior Boulevard from the Kraemer Site

- Improve existing parks along Excelsior Boulevard, better use of space, safer playground, improved programming
- Repurpose existing private business/property within the park to a public park use
- Provide more public access points to Glen Lake
- Provide a fence around Glen Lake Park playground along Excelsior Boulevard
- Kinsel Park would be an ideal spot for a lake overlook or boardwalk
- Potential consolidation of parcels between East(south) site and Central site(excluding existing townhomes) into a more viable single family residential site, with townhomes near Stewart Lane
- Develop the commercial/retail site southwest of Excelsior Boulevard and Eden Prairie Road into mixed use with parking on lower level to bring retail to eye/road level of Excelsior Boulevard, potential to expand southward into West Sites.
- Incorporate existing local businesses (incl. post office) into new mixed use structures

SAFETY & AESTHETIC IMPROVEMENTS

Kinsel Park

- Safety/lighting issues especially in winter where Kinsel Park trails exit park on east side onto Mayview Road
- The trails through Kinsel Park are difficult to use for older adults because of poor surface conditions
- Benches and tables are needed in Kinsel Park, perhaps in conjunction with a small/simple shelter (2)
- Kinsel park needs better planting to create more interest, perhaps gardens, rain gardens, orchard, or other unique plantings/trees

Glen Lake Park

- Unsafe to cross from Glen Lake Park to Kinsel Park across Excelsior Boulevard at Kinsel Road, could a better crossing or bridge be provided? (2)
- Gateway opportunity near Glen Lake Park along Woodhill Road

Stewart Lane

- Stewart Lane has traffic volume issues, small road with increasing levels of traffic coming from recent (and pending) development
- Can access to Stewart Lane onto Excelsior Boulevard be shifted west to align with Woodhill Road intersection?
- Traffic safety issues (access and turning) at intersection of Stewart Lane and Excelsior Boulevard

Excelsior Boulevard

- Water feature at northeast corner of Williston Road and Excelsior Boulevard
- Improve the crossing at Excelsior Boulevard and Woodhill Road, intersection still feels less than safe despite recent improvements (3)
- Traffic along Excelsior Boulevard (Beacon Hill Road to Glenview Drive) is fast/unsafe, would like to see traffic calming in this area

- Improve the biking conditions along Excelsior Boulevard through the Glen Lake commercial area, west of Glen Oak Road and east of Glenview Drive are ok, but in between feels unsafe for bikes…share the road signs, narrower lanes, stripping, or other options?
- Better lighting east of Kinsel Park is needed along Excelsior Boulevard
- Lighting needs to be improved along Excelsior Boulevard between Williston Road and Beacon Hill Road
- More seating along Excelsior Boulevard, benches and tables in conjunction with restaurants
- Potential public art opportunity on the NE corner of Beacon Hill Road and Excelsior Boulevard
- Potential place making/neighborhood identity opportunity on the NE corner of Beacon Hill Road and Excelsior Boulevard
- Both ends of Excelsior Boulevard need some kind of gateway or place making element to announce arrival into Glen Lake area
- Gateway opportunity at intersection of Williston Ave and Excelsior Boulevard
- Gateway opportunity at intersection of Eden Prairie Road and Glendale Street

Woodhill Road

- Woodhill Road needs improved lighting, too dark

Hennepin County Home School Site

- Passive water feature in Home School site, perhaps as part of wetland or lake areas
- Home School site could have enhanced wetland areas, with potential for interpretive/interactive plant centric programming
- Outdoor seating (benches and picnic tables) needs to be provided in the Home School site, if it becomes park space

Kraemer Site

- Enhanced plantings/garden feature at northeast corner of Williston Road and Excelsior Boulevard (Kraemer site)
- Could Kraemer, Williston West, and NW Glen Lake properties be developed together with underground parking?

Glen Lake

- Parking (related to The Glen bldg.) along Tree Street causes issues with access and the passing of two way traffic (too narrow)
- Post office is impossible to use/get into and out of, improve traffic access/follow or relocate to better/bigger location
- Create a loop trail that goes around Glen Lake (2)
- Provide a connecting trail along the eastern and southern edges of Glen Lake to connect north trails (Kinsel Park) to eastern and southern trail system

East(South) Site

- Enhanced planting of the East(South) property along Excelsior Boulevard

Other Sites

- Screening vegetation/planting on vacant land west of power station, and for the station on Excelsior Boulevard boundary
- Art as a temporary installation on vacant land near power station site (2)

- Art could be part of the neighborhood identity making

General Notes

- Improved bus service and facilities to and from the area, provide a senior, dial a ride service that is more reliable the Metro Mobility

Neighborhood Meeting Summary - January 20, 2016

PUBLIC REALM IMPROVEMENTS

- More public art locations to provide neighborhood identity
- Pedestrian and bike improvements needed on Woodhill Road
- Punching Woodhill Road across Excelsior Boulevard is a bad idea
- Pedestrian and bike improvements needed on Eden Prairie Road
- Need a new restaurant in the south strip mall (containing Kraemer's)
- Placing public art on the old Kraemer's Hardware site not needed
- Impossible to make left hand turns onto Eden Prairie Road during rush hour, need better traffic signal coordination
- Currently an overabundance of large senior only buildings (7 listed)
- Need bike lanes up both sides of Excelsior Boulevard as well as up Williston Road
- Like sidewalks on the south side of Excelsior Boulevard, need more like it on neighborhood streets
- There is a need for more upscale retail and appropriate retail adjacent to daycare
- Need restaurants in current retail buildings
- Would like to see clean, passive water features, potentially those that support wildlife
- Hard to access Kraemer shopping area by foot/bike
- Improve the neighborhood aesthetic to create a destination
- Improve access to shopping
- More parking needed everywhere
- Consider the impact to wildlife that adding lighting to Kinsel Park would have
- Parking on curve of Beacon Hill Road, can that be shared with The Glen
- Is there going to be too much light pollution from new lighting if added to Kinsel Park?
- Would Stewart be a one-way street?

WEST SITE

Note: In the early stages of the Glen Lake Neighborhood Study, future development options were explored for the West Site. At the conclusion of the study, no future development options were advanced for the site given the property owner's strong desire to retain the property in its current form. Accordingly, the following comments are included since they were voiced in a community meeting but they are no longer applicable given the decision to exclude the property from further development consideration.

Concept A

- Worried townhomes are going to add more senior only housing
- Are the wetland setbacks enough in the scenarios?
- Prefer the townhome option (2)
- Need townhomes in the $250,000-450,000 range for balance
- Where does guest parking occur in both scenarios?
- Would like to see a high density of housing in this option
- More walking paths around wetland area
- Prefer the access intersection in this option
- Prefer the option that preserves the most green space
- Trail access and density are ok

Concept B

- Scenarios may require additional traffic control for Glendale Street
- Planning needs to be compatible on both sides of the street
- Add community gardens to this concept
- Are urban size lots appropriate for Minnetonka?

CENTRAL SITE

Concept A

- Need a larger buffer on Eden Prairie Road
- 50-60' Lots small/close for the neighborhood, market needs larger lots
- Development intensity may create too much lighting, worried about wildlife impacts
- Access to the private drives is problematic on both concepts

Concept B

- Trail or sidewalk connection to Eden Prairie Road from the end of the cul-de-sac
- Worried about the displacement of neighborhood wildlife (turkey, deer, woodpecker, eagles, waterfowl etc.) Where will they go when their habitat is removed?
- Density is too high in either concept, the lots in both are too small for the area
- Density of the 'Compact Residential' is too high
- All of these pieces don't fit together, don't see an overall grand vision

EAST SITE

Concept A

- Eliminate 5 SF Lots and replace with a small park to provide access and views of Glen Lake
- Concern about buffering the wetland, examine 'buildable' lots as appropriate (3)
- Flip building footprint to the east away from townhomes
- Stop light would be needed at new intersection
- Improve walkability and add landscaping along Excelsior Boulevard. More greening needed along Kraemer strip mall
- Would like to see a small boardwalk into the lake off the trail connection in between lots 4 and 5
- Lot 5 is too close to lake
- Worried about water quality impacts development will have on lake
- Concerned about the increased traffic development would create
- Concerned about traffic at the new proposed intersection of Stewart Lane and Excelsior Boulevard
- Too much hard surface, but do like the opportunity to share parking with the Gold Nugget
- Would like to see a comprehensive picture of all the potential trail connections with private property barriers indicated
- Trails in this option runs through private property

Concept B

- Some of these units would be a tough sell with no views of the lake
- Units 1-4 might make a good location for townhomes
- Restaurant visible from Excelsior is needed, prefer the more attractive parking configuration compared to the Gold Nugget
- Potential for housing and restaurant/retail underneath?
- Crossing safety concern at new intersection
- Too much grading needed to make this work

- Gold Nugget has loud fan noise on east side of building
- Lots 9-10 are too wet to develop, would prefer a park or trail connection
- Would like to see a small boardwalk into the lake off the trail connection in between lots 4 and 5
- To many units in this option
- Restaurant will need to have adequate parking
- Is the wetland disruption caused by the boardwalk worth the public benefit?

HENNEPIN COUNTY SITE

- Try to find a balance between development and park and open space, need to preserve the existing habitat, as its already limited
- Remember what happened to Wing Lake
- Must have a walking trail around the lake
- The economy, market, and environmental impacts of the proposed development will determine the final development scenario
- More trails connect with limited development
- City needs to develop a plan to purchase the land
- Relocate Optimist Field / Gilliam Ball Field here, redevelop Optimist Fields to commercial
- Is there an option to put retail on this site?
- Trail system needs to be connected to parks
- Add a small zoo to one of the parks
- Like Centennial Lakes, develop recreational options
- 800 units seems very high, but the proximity to Gatewood Elementary School and access to transportation are good elements
- This much development will kill the lake
- Avoid doing another grass lawn choked development and make it a focus on intentional green living and planting
- Remember what happened to Birch Lake
- Way too many units, with all the other proposed housing we should keep this area wild, save the trees
- Maybe too much density
- Could this be a site for a college or university expansion
- How much of this land could the city buy from the compiled park dedication fees from recent development?

07. APPENDIX B

Throughout the course of the study, the community has expressed concerns about the water quality of Glen Lake. Over the past three decades, a number of water related studies have been conducted specifically for Glen Lake and the city. Appendix B includes previous lake studies and information specifically for Glen Lake for reference and information purposes. They include:

- The presentation information about lake issues from the August 13, 2015 Neighborhood Group Session.
- A link to a study of water quality control measures conducted by the University of Minnesota Resilient Communities Project.
- The 1992 joint study of Shady Oak, Glen and Birch Island Lake levels by the cities of Eden Prairie and Minnetonka and the Nine Mile Creek Watershed District prepared by Barr Engineering.

Glen Lake Neighborhood Visioning Group Presentation

Lake History - 1946 to 2012

Water Resources - Fisheries

Fish Sampled up to the 2005 Survey Year

Species	Gear Used	Number of fish per net		Average Fish Weight (lbs)	Normal Range (lbs)
		Caught	Normal Range		
Black Bullhead	Gill net	17.0	7.7 - 104.7	0.14	0.2 - 0.5
	Trap net	0.2	1.5 - 58.0	0.16	0.2 - 0.5
Black Crappie	Gill net	0.5	1.7 - 17.5	0.11	0.1 - 0.3
	Trap net	1.0	2.1 - 24.1	0.16	0.2 - 0.4
Bluegill	Gill net	1.0	N/A - N/A	0.09	N/A - N/A
	Trap net	57.2	3.5 - 57.1	0.09	0.1 - 0.3
Brown Bullhead	Gill net	0.5	0.8 - 7.0	0.71	0.3 - 0.8
	Trap net	0.7	0.4 - 5.1	0.61	0.4 - 0.9
Green Sunfish	Trap net	0.2	0.3 - 2.8	0.03	0.1 - 0.2
Hybrid Sunfish	Trap net	0.5	N/A - N/A	0.16	N/A - N/A
Largemouth Bass	Gill net	0.5	0.3 - 0.6	1.74	0.5 - 1.5
	Trap net	0.3	0.2 - 0.8	1.15	0.3 - 1.5
Northern Pike	Gill net	7.0	2.0 - 10.8	2.07	1.7 - 3.1
	Trap net	0.2	N/A - N/A	2.07	N/A - N/A
Painted Turtle	Trap net	10.8	N/A - N/A	ND	N/A - N/A
Snapping Turtle	Trap net	2.3	N/A - N/A	ND	N/A - N/A

Normal Ranges represent typical catches for lakes with similar physical and chemical characteristics.

Water Resources - Fisheries

- Compared to similar lakes:
  - Heavily influenced by occasional winterkill events
  - Small panfish dominate the community; mostly bluegills
  - Northern pike were present above median levels
  - http://www.dnr.state.mn.us/lakefind/index.html

Water Resources – Aquatic Plants

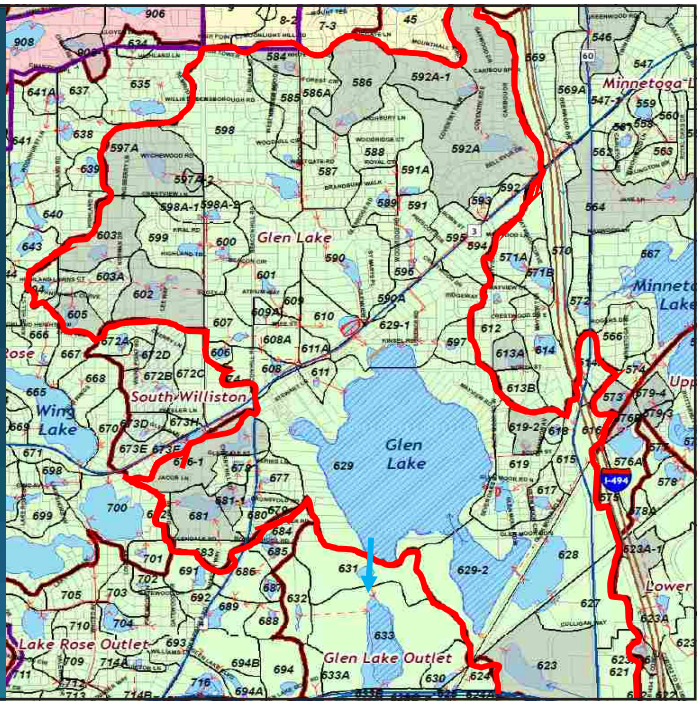
- Diverse NATIVE aquatic plant community

  Floating Leaf Vegetation:
  white waterlily, yellow waterlilly, and watershield

  Submerged Vegetation
  Coontail, Canada waterweed, flat stem pondweed, and northern water milfoil

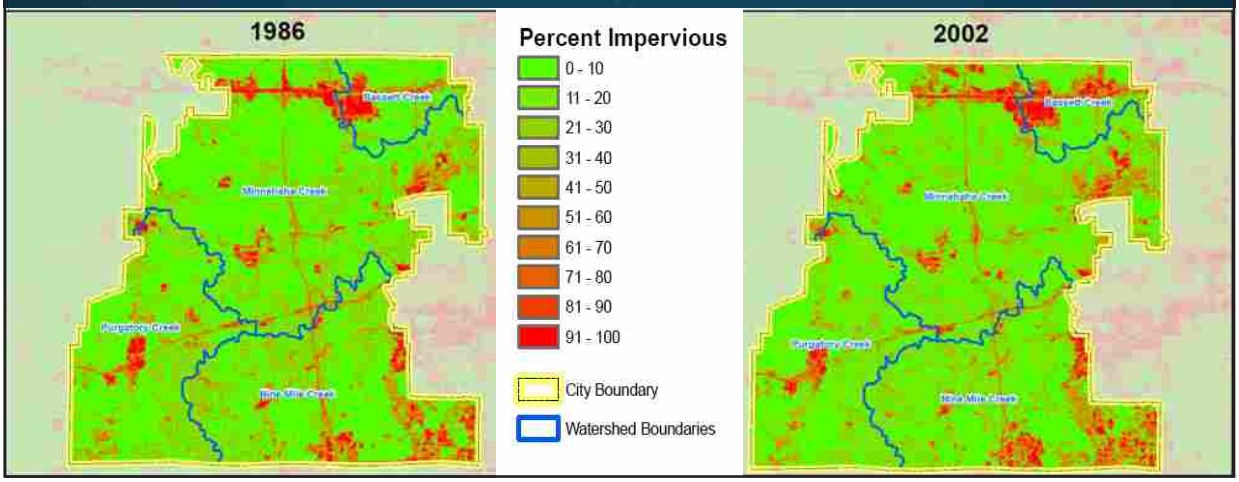
Lake Characteristics

- Total Watershed:
  - 1,100 Acres
- Lake Area:
  - 98 Acres
- Mean Depth
  - 8 feet
- Maximum Depth:
  - 25 feet



Lake Characteristics

- Impervious surface



Impervious Surface

- Why this matters:
  - More impervious surfaces means more stormwater runoff
  - More impervious surface means less groundwater recharge
  - More stormwater runoff means greater flows into our lakes and creeks which can lead to flooding

  - AND more stormwater runoff means more pollutants into our waters

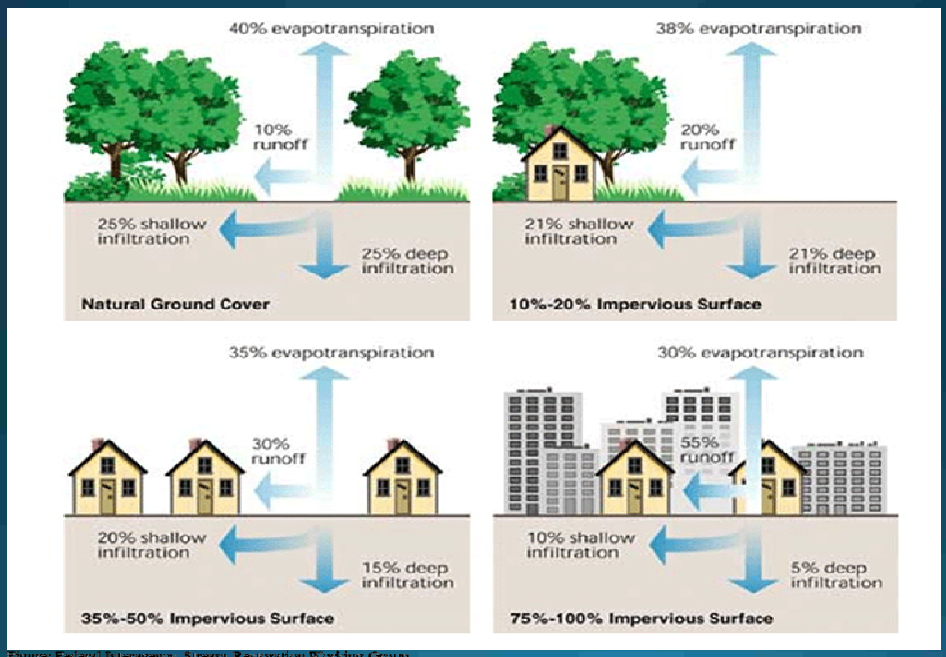
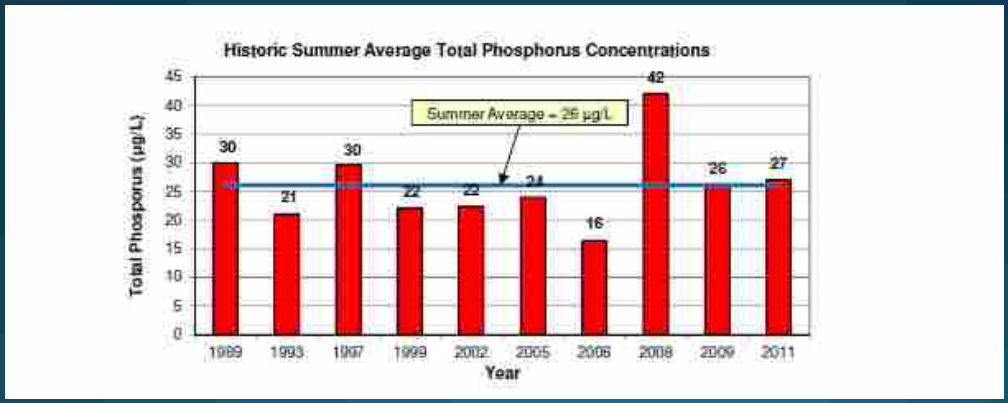


Figure: Federal Interagency Stream Restoration Working Group

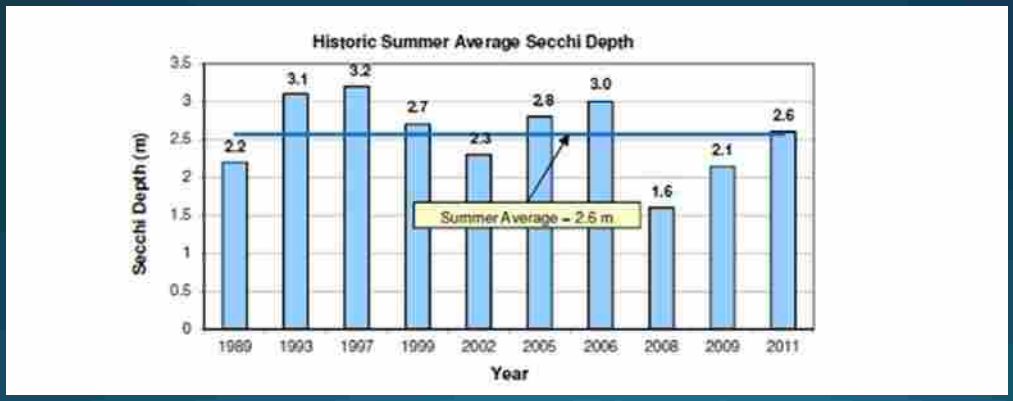
Water Quality – Glen Lake

- Total Phosphorus



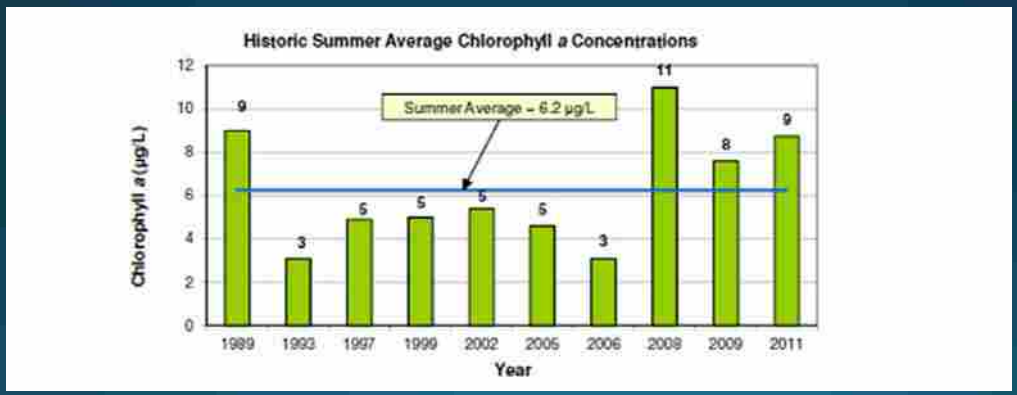
Water Quality – Glen Lake

- Clarity – Secchi Depth



Water Quality – Glen Lake

- Algae Content – Chlorophyll *a*



Water Quality

For Comparison:

- Lake Minnetonka –Libb's Lake/Gray's Bay
  - TP – 26 ug/L
  - Clarity – 1.7 meters
  - Chlorophyll *a* – 6.4 ug/L
- Shady Oak Lake
  - TP - 17 ug/L
  - Clarity – 3.1 meters
  - Chlorophyll *a* – 4.1 ug/L
- MPCA Lake Criteria
  - TP – 40 ug/L
  - Clarity – 1.4 meters
  - Chlorophyll *a* – 14 ug/L

Water Quality

- Completed Studies
  - 1989-2011 – Surface Water Quality Study (city of Minnetonka)
  - 1999 – Glen Lake Use Attainability Analysis (Barr, NMCWD)
  - 1999 – City of Minnetonka Water Resources Management Plan
  - 2008 – Impervious Surface Study
  - 2010 – City of Minnetonka Water Resources Management Plan
- Upcoming Studies
  - 2015 – Surface Water Quality Study and Watershed Assessment
    - New program

Water Quality

- Completed Projects:
  - 2005 – NMCWD Water Quality Improvements
    - Lorence Road Pond
    - Kinsel Park Pond
    - Dickson Road Pond
  - 2008 - Glen Lake Station Water Reuse project
  - Glen Lake Redevelopment – provided new stormwater treatment

Roles and Responsibilities

The Players

- **Department of Natural Resources (DNR)**
  - Aquatic Plants and Fisheries
  - Really anything that happens within the lake itself
- **Mn Pollution Control Agency (MPCA)**
  - Regulates upland areas that run into the lake
- **Nine Mile Creek Watershed District (NMCWD)**
  - Regulations – floodplain, stormwater, wetlands, dredging, sand blankets, etc
  - Capital Improvement – Projects like the 2005 Water Quality Improvements
  - Grant opportunities

Roles and Responsibilities

- The Players (con't)
  - **The City**
    - Land Use Authority – development and redevelopment
    - Regulations: Floodplain, Wetland, Tree preservation, Shoreland
    - Stormwater Design Guidelines and Standards
    - Capital Improvement Projects
    - Storm Sewer Maintenance – including pond dredging
    - Road Salt Management
    - Sediment and Erosion Control

What Can You Do To Help?

- Water Conservation
  - Rain Barrels
  - Watch for irrigation overspray
  - Moisture sensors for irrigation systems
- Lawn Care practices
  - Don't overuse chemicals (pesticides, herbicides, fertilizer)
- Rain Gardens
  - Native plants
  - Infiltrates stormwater
  - Collects pollutants before they get to the lake

What Can You Do To Help?

- Lakeshore Buffers
  - Keep lawn chemicals from the lake
  - Stabilizes shoreline
- Salt Management
  - Shovel first
  - Less salt is better – sweep up excess

Resources:

- http://www.dnr.state.mn.us/lakefind/index.html
- http://www.ninemilecreek.org/
- http://www.bluethumb.org/
- http://masterwaterstewards.org/
- http://www.eminnetonka.com/departments/engineering-department/surface-water-quality

Questions?

Liz Stout, P.E.
Water Resources Engineer
lstout@eminnetonka.com
952-939-8233

Glen Lake Watershed Water Quality Control Measures

http://rcp.umn.edu/wp-content/uploads/2015/07/CE-5511-Glen-Lake-Watershed-BMP-Analysis.pdf

GLEN LAKE, SHADY OAK LAKE, AND BIRCH ISLAND LAKE WATER LEVEL INVESTIGATION

Prepared for the City of Eden Prairie, City of Minnetonka and the Nine Mile Creek Watershed District

December 1992

Barr
Engineering Company
8300 Norman Center Drive
Minneapolis, MN 55437
Phone (612) 832-2600
Fax: (612) 835-0186

GLEN LAKE, SHADY OAK LAKE, AND BIRCH ISLAND LAKE

WATER LEVEL INVESTIGATION

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GLEN LAKE, SHADY OAK LAKE, AND BIRCH ISLAND LAKE
WATER LEVEL INVESTIGATION

The water surface elevations of Glen Lake, Shady Oak Lake and Birch Island Lake have experienced a decline in recent years which has diminishing the value of these water resources. The cities of Eden Prairie, Minnetonka, and Hopkins have requested the Nine Mile Creek Watershed District investigate the cause of the decline in the current elevation of these lakes. The Nine Mile Creek Watershed District prepared a work plan dated September 27, 1991, for a Phase One investigation in response to this request. This report summarizes this investigation and its conclusions.

The three lakes investigated are located near the common borders of the three municipalities listed above and are shown on Figure 1. The lakes have several similarities which can result in significant fluctuations in levels. The two most significant similarities are the small watershed drainage area tributary to the lakes, in relation to the surface area of the lake, and the fact that the lakes do not have low level outlets establishing a normal elevation for the lake. Lakes of this type, that do not have low level outlets, are referred to as landlocked basins. Figure 2 shows the lakes and their watershed boundaries. The figure also shows upstream areas that are currently landlocked or do not overflow except on rare occasions. The analysis to determine the hydrologic system for lakes with these characteristics is referred to as a water balance. A water balance will show the relationship between precipitation, surface water runoff, groundwater flow, evaporation, and transpiration for each of the lakes. This analysis will determine if the elevations are a result of climatic conditions or a change in the hydrologic system to the lake. The following will summarize the analysis of the hydrologic system completed for each of the lakes.

DATA COLLECTION

The initial stage of the investigation was to collect information relating to the lakes and activities that have occurred within the tributary drainage area of the lake. This information included air photographs, construction plans

for development and utilities in the general area of the lakes, precipitation data, soils information for the area, and lake and groundwater data for the area. The data collected and its relationship to the analysis completed is discussed in the following paragraphs.

Lake Levels

The Nine Mile Creek Watershed District has obtained lake elevations for lakes within the District from 1964 to the present. These levels are obtained on a monthly basis, with additional measurements taken after intense rainfall events. The lake level information from the District was obtained for the three study lakes and also for comparative purposes for Lone Lake; a lake directly south of Shady Oak Lake that is also a landlocked lake and has similar characteristics to the lakes being analyzed. The range of recorded lake levels are listed in Table 1.

Weather Records

Rainfall records have been obtained by the Nine Mile Creek Watershed District since 1964 at two locations in the general area of the lakes. These continuous recording gages are currently located at the Hennepin County Maintenance facility in Hopkins and in Eden Prairie at the Minnesota Department of Transportation Maintenance facility. Yearly precipitation totals range from 39.1 inches in 1965 to 14.5 inches in 1976. The average precipitation over the watershed during this time period is 26.9 inches.

Additional precipitation records were obtained from the Minneapolis-St. Paul Airport Weather Bureau. The Weather Bureau records included monthly rainfall and the average monthly temperature, relative humidity, and wind speed. These factors are used in the estimate of the relation of the water levels to historical meteorologic conditions.

Impacts of Urbanization

As an area urbanizes, several factors can influence the total volume of surface water runoff generated within a watershed thereby affecting the level

of a landlocked lake. The affects of urbanization can either increase or decrease the amount of water reaching a water body.

Sanitary Sewer

When an area first develops, on-site septic systems are often used for sanitary sewer treatment. As the discharge of water from these system infiltrates through the subsoil, a source of water is provided for the surficial (drift) groundwater. As municipal improvements are made within these areas, the installation of sanitary sewer systems replaces these on-site septic systems thereby removing a source of the water to the lakes. The installation of sanitary sewer can result in a general lowering of the groundwater level.

Water Supply

The installation of domestic supply wells in a shallow aquifer removes water from the groundwater system resulting in a general lowering of the groundwater elevation. In this instance, as municipal improvements are made and private supply wells are abandoned, a general increase can result in the level of the groundwater aquifer.

Storm Sewer

The development of an area increases the percentage of hard surface area resulting in an increase in the rate and volume of surface water runoff. However, the total area available for groundwater recharge and transpiration (the transmission of infiltrated water to the atmosphere by vegetation) is reduced as an area urbanizes. Storm sewer systems installed to convey runoff from urbanizing areas will expedite the time taken for surface water runoff to reach a receiving water body. The levels of lakes where the watersheds are served by storm sewer will generally respond (rise) much quicker than areas not served by storm sewer.

Construction Activities

An additional item which may have an affect on the level of a lake is the construction and installation of utilities in an area below the groundwater table. If proper construction techniques are not employed, the potential exists to intercept groundwater from reaching a water body by providing an underground conduit for the water to flow. Examples of this would include: (1) a storm sewer with joints that do not seal completely. The open joints allow water to leak into the pipe and the storm sewer would provide an outlet; and (2) a sanitary sewer or other utility installed without impermeable cutoffs constructed perpendicular to the pipe alignment. This condition would also provide a conduit for the conveyance of groundwater along the pipe system.

Construction activities can result in increased or decreased upstream storage areas. These, in turn, affect the groundwater recharge as well as the potential for evaporation. The watershed characteristics will determine the net effect that construction activities will have on the level of the lakes in the area.

ANALYSIS

Several approaches were pursued in the investigation of the levels of the study lakes. These included: (1) a comparison of the lake levels with each other, a comparison with other lakes within the general area (Lake Minnetonka, Lake Minnetoga, Lone Lake, and Lake Pulaski); (2) the computation of a water balance for each lake; and (3) the potential impacts that urbanization and construction activities would have on the lake levels.

Lake Level Comparison

The comparison of the levels of the study lakes with other nearby lakes was intended to determine if the lakes are behaving in a similar manner. The lakes previously listed were used for comparative purposes, however, Lone Lake, a landlocked lake in the vicinity of the study area, was used for direct comparison. Figure 3 is a graphical plotting of the levels of the study lakes. The lakes should be expected to respond in a similar manner based on the

characteristics of the watersheds. The figure shows that the lakes generally exhibit similar behavior for the available lake level record, however, the significant exception is the abrupt drop of Birch Island Lake in the late 1980s to the present.

Development Records

In an attempt to further identify any aberrations in the lake levels, aerial photographs taken at approximately 5-year intervals from 1965 to the present were reviewed to determine the timing of significant development in the watersheds. The Shady Oak Lake watershed experienced a significant amount of residential development in the early 1970s. The watersheds of the other lakes did not appear to have any significant development for the period investigated.

Utility Installation

The municipal utility information indicates that the installation of the trunk utility systems within this area, sanitary sewer, water, and storm sewer were generally installed in the early 1970s. A comparison of the historic levels and with the predicted levels using the water balance computations indicated no significant impact attributable to these installations.

Water Balance

In an attempt to determine any changes in the hydrologic systems of the study lakes, a computer model was created to compute the predicted lake levels based on the weather records from 1965 to 1992. The computer model used was the Meyer Model and is discussed in detail in Appendix A. This model computes the long term watershed yield based on hydrologic and watershed factors.

The results of the water balance for Glen Lake and Shady Oak Lake is shown on Figures 4 and 5, respectively. The historic levels and the computed levels show a good comparison for the period of record. This indicates that the lake hydrology has not been significantly altered in the recent past resulting in levels lower than expected.

The results of the water balance for Birch Island Lake, however, gave different results. Figure 6 shows comparison of the historic levels and the computed levels. The computed and recorded levels compared fairly well until the late 1980s. The historic levels have dropped significantly below the predicted levels and have remained well below the predicted levels to the present time. This is an indication that a change has occurred in the watershed altering the hydrologic system of the lake.

Review of Construction Activities

The development records of the Nine Mile Creek Watershed District in the area of Birch Island Lake were reviewed to determine the potential impact of construction activities on the lake level. The areas where utilities have been installed, sanitary sewer and storm sewer, the utilities have been installed at an elevation above lake level. Therefore, there are little if any impacts expected due to the utility installation.

In 1985, Hennepin County began filling the wetland north of the Birch Island Lake for the future extension of C.S.A.H. 62. Because of poor foundation material in the area, granular fill was placed along the proposed roadway alignment to surcharge (compact) the existing organic material. Surcharging would provide a stable subbase for the roadway. The construction information indicates that approximately 35 feet of granular surcharge was placed in this area. The soils information obtained from Hennepin County indicates that the existing organic material is underlain by a sand layer. It is possible that with the placement of the granular material a connection was made with this sand layer which could prevent (intercept) surface and groundwater from reaching the lake and/or provide a seepage outlet for the lake. However, the groundwater elevation on both sides of the roadbed appears to be significantly higher, approximately 9 feet, than the lake level. This would indicate the foundation material for the roadway does not connect with the sand stratum and effect the lake level.

CONCLUSIONS

Glen Lake and Shady Oak Lake

The levels on these lakes appear to be the result of long-term climatic trends. There is the potential for adding additional drainage area to these lakes as storm sewers are installed in the upstream watersheds. For Shady Oak Lake, the potential exists for adding additional watershed to the lake by rerouting the pumped outlet from Goose Pond in Hopkins. Further review would be required to assess the potential benefits of such a project.

Birch Island Lake

The current level of Birch Island Lake ranges from 6 to 8 feet below the levels computed, water balance, with the recent climatic conditions. The construction of C.S.A.H. 62 in the area north of the lake has the potential to be the problem with the lowering of the lake level. However, because of conflicting data, a conclusion and recommendation cannot be made without further study and analysis. This would include a detailed assessment of groundwater and surface water conditions in relationship to the construction activities that have been completed and are on going in the general area of Birch Island Lake.

Water Quality

In addition to the decline in the water surface elevation of Glen Lake, the area residents indicated that there is an apparent decline in the water quality of the lake. As the Glen Lake water level has declined, an increase in aquatic weed growth infringing within the open water area of the lake has occurred. A preliminary investigation of this increase in aquatic vegetation in relationship to a possible decline in the water quality of the lake was requested to be made as part of this report.

Three core samples of the bottom sediments of Glen Lake were taken to determine in lake nutrient loading, phosphorus, available for weed/algae growth within the lake. The core samples were taken to a depth of approximately 1 foot and analyzed at the surface, approximately the mid-point and at the bottom of

the sample. An average of the phosphorus content ranged from 1,007 mg/kg at the surface to 690 mg/kg at a depth of 1 foot. These numbers appear to be typical of a lake receiving inflow from an urbanizing watershed. Generally, in eutrophic lakes, sediment accumulates at a rate of approximately 1 inch per 10 years. Therefore, a 12-inch core represents approximately the last 120 years of accumulated sediments, corresponding with the time period that settlement/ urbanization has occurred. The bottom sediments at the surface are fairly fertile, however, the increase in the fringe vegetation is the result of the decline in the elevation of the lake. The root structure of aquatic vegetation has been able to establish itself in areas that now have water depths less than 4 feet but were previously much deeper.

Appendix

TABLE 1

LAKE DATA

Lake	Local Tributary Drainage Area Acres	Landlocked Upstream Drainage Area Acres	Recorded High Water Elevation M.S.L.	Recorded Low Water Elevation M.S.L.
Shady Oak Lake	502	-----	904.4	897.8
Birch Island Lake	442	451	892.0	877.3
Glen Lake	693	414	905.0	898.6

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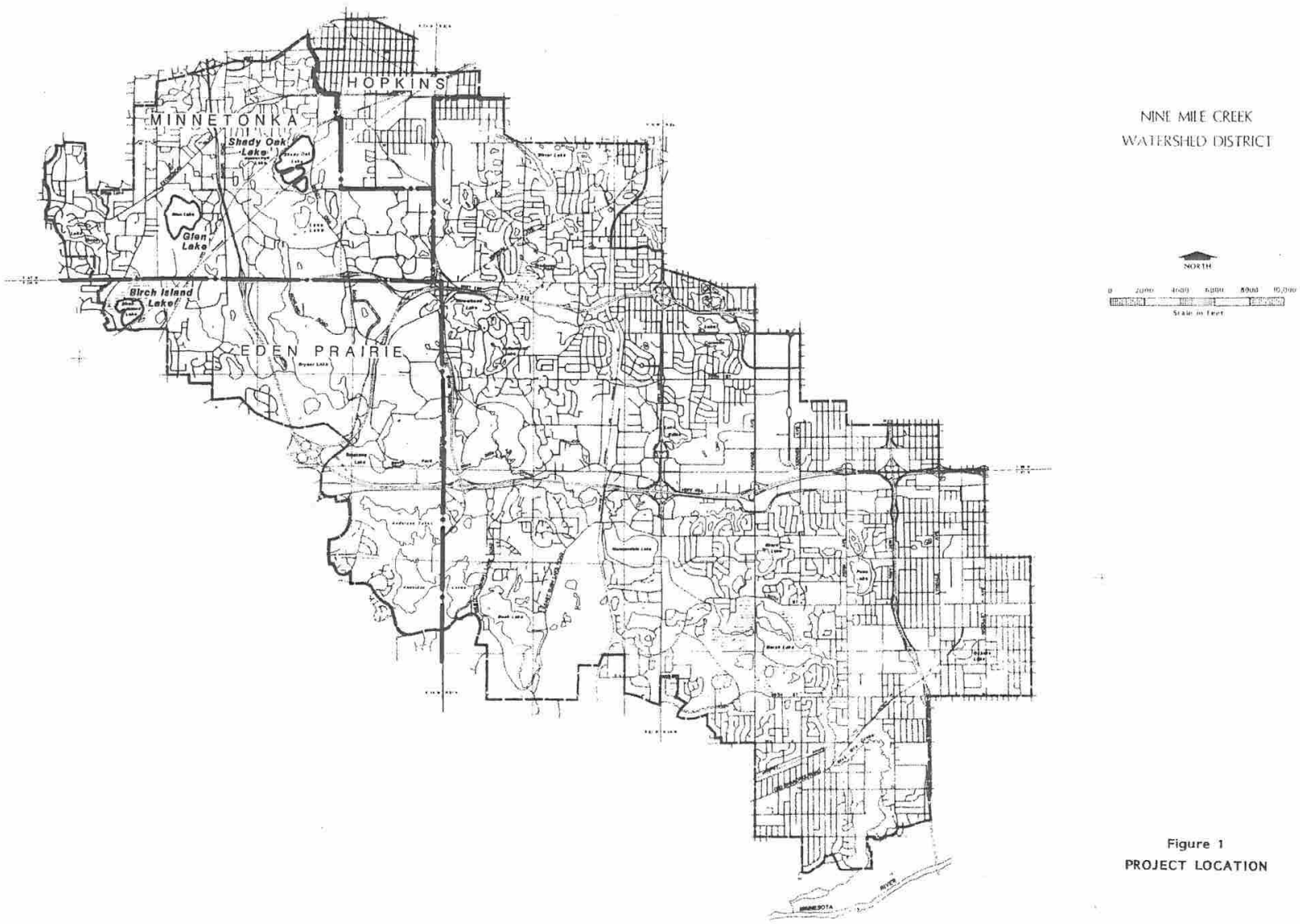


Figure 1
PROJECT LOCATION

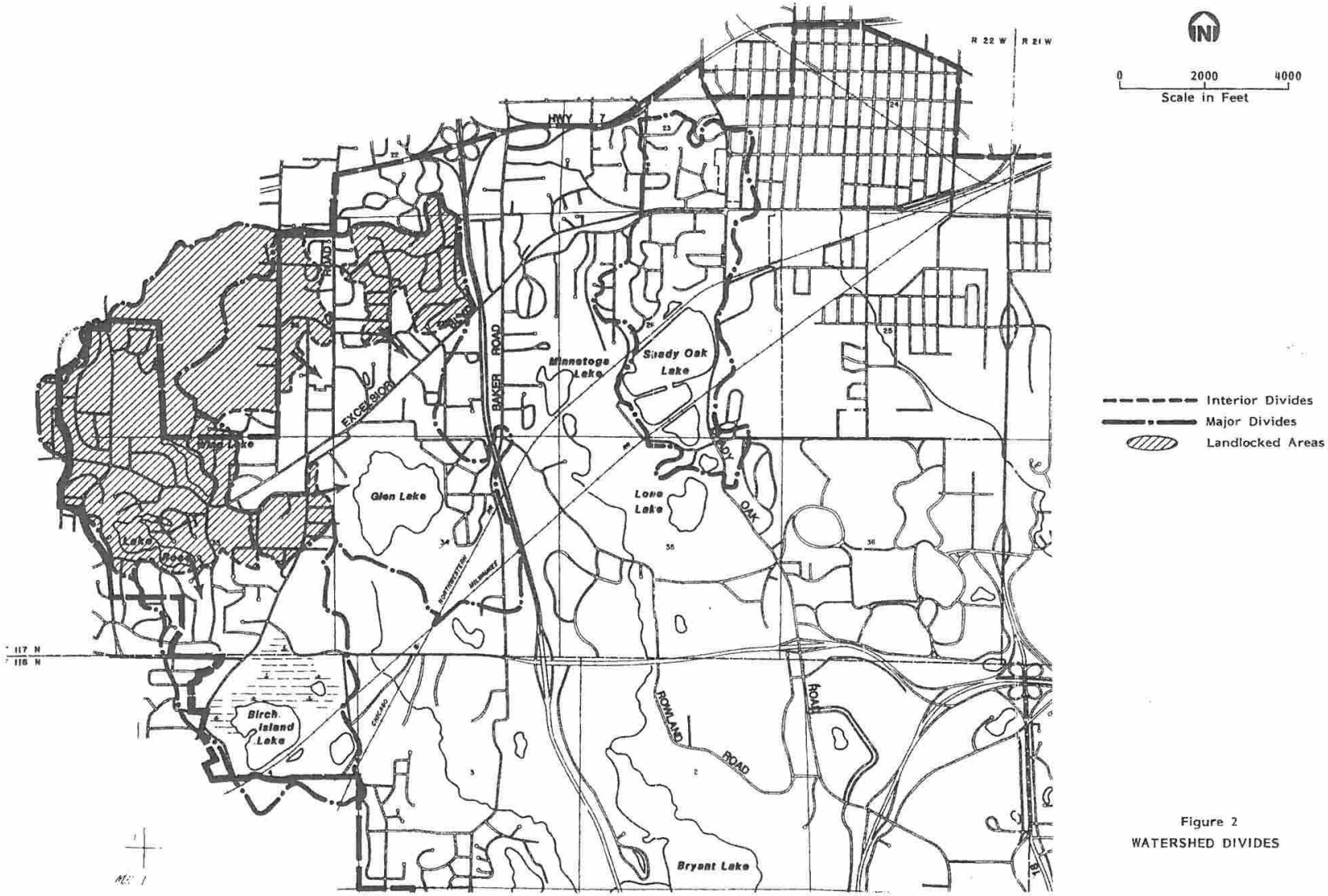


Figure 2
WATERSHED DIVIDES

Figure 3
LAKE ELEVATIONS

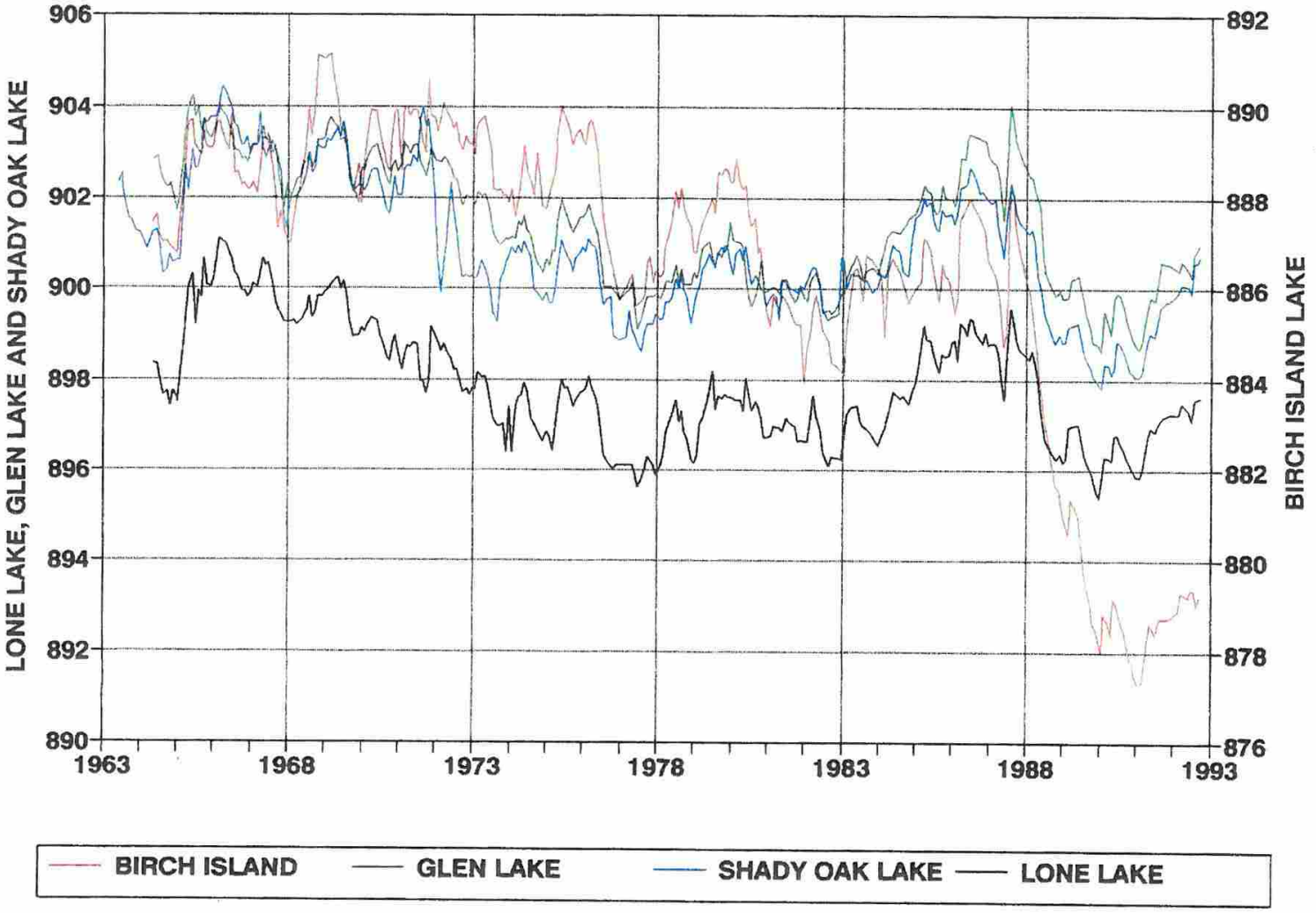


Figure 4
GLEN LAKE CALIBRATION

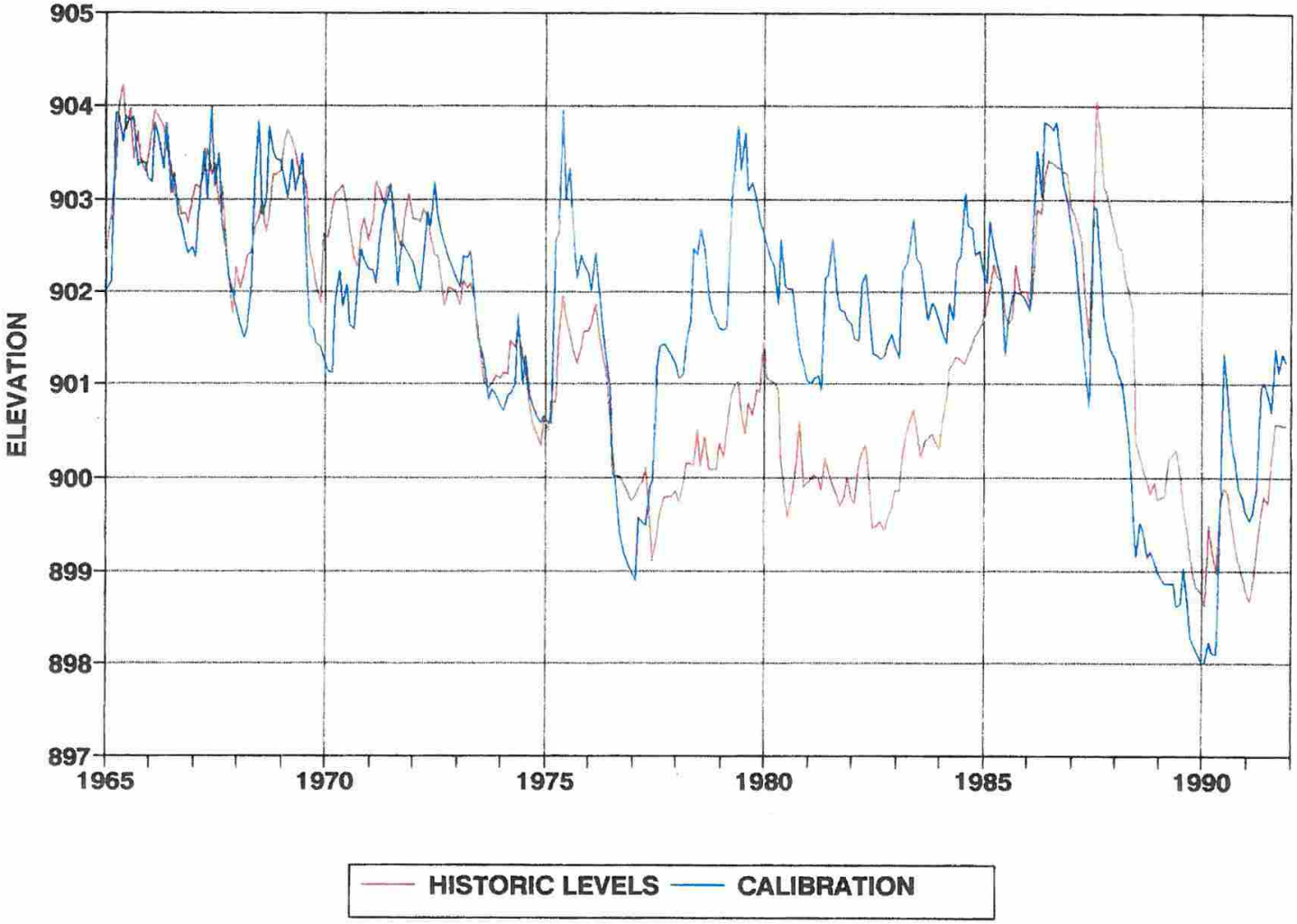


Figure 5
SHADY OAK LAKE

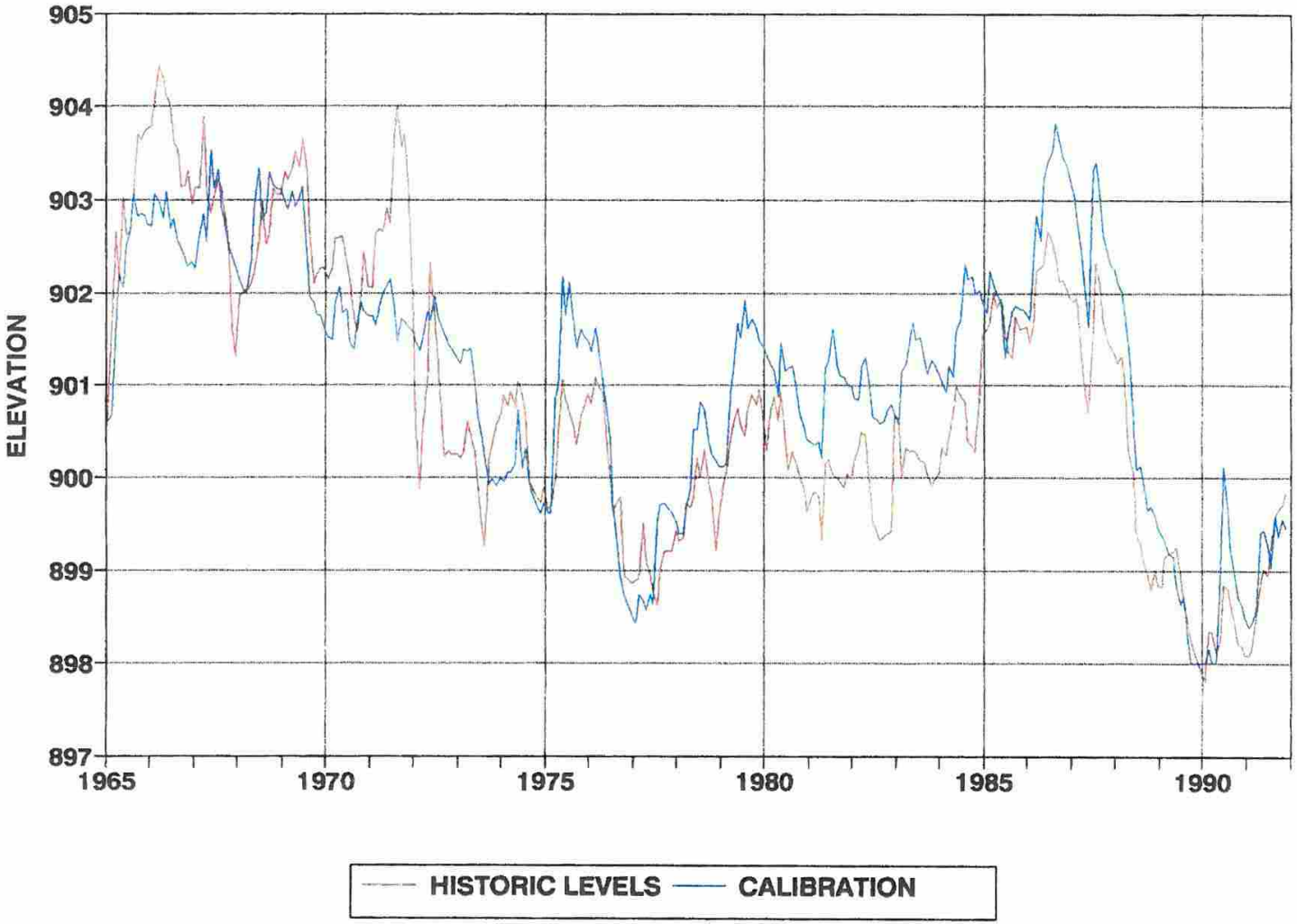
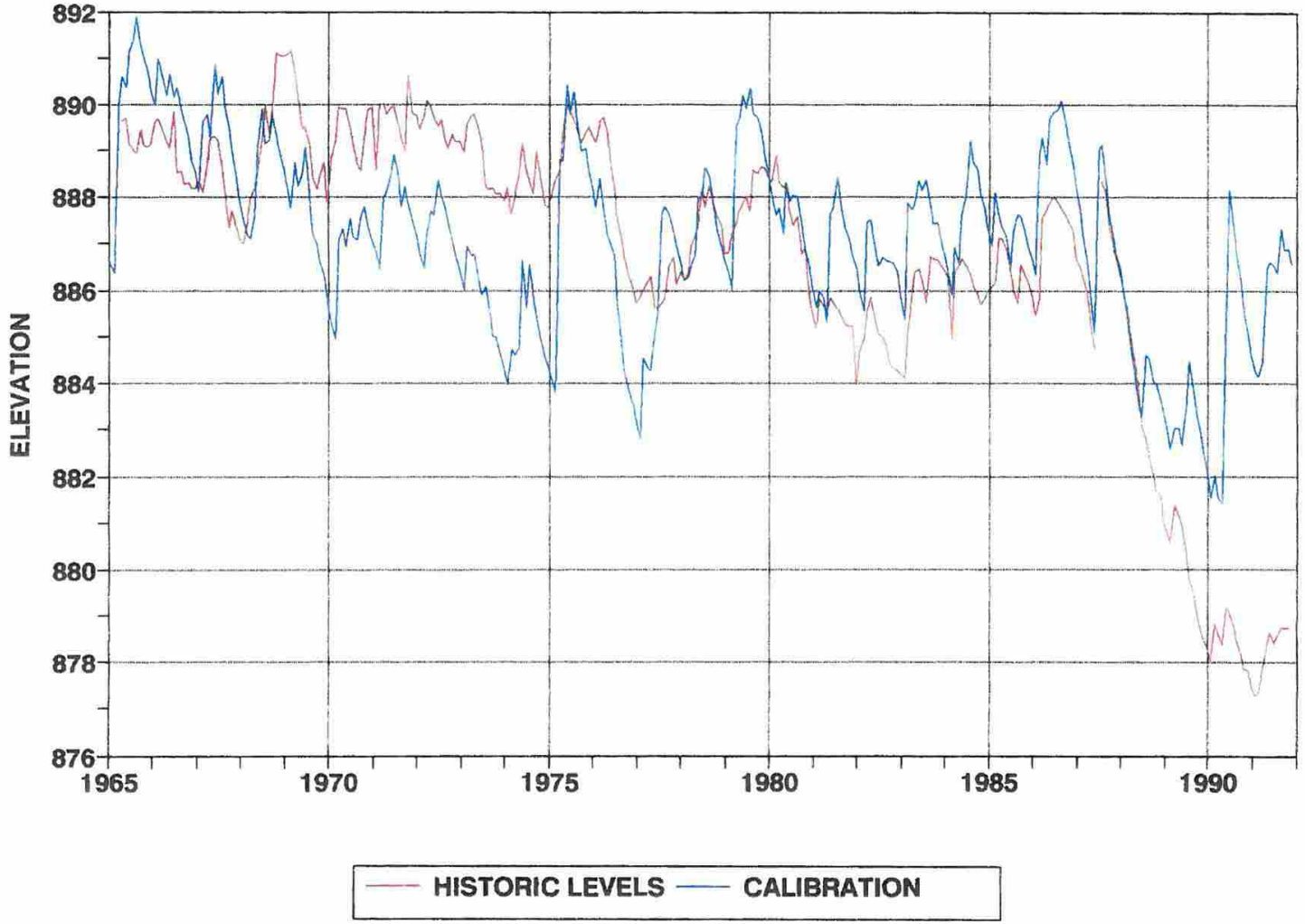


Figure 6
BIRCH ISLAND LAKE



Meyer Model Description

MEYER MODEL DESCRIPTION

The surface water inflow from the watershed was modeled by means of the Meyer Model (Molsather, et al., 1977). The Meyer Model provides an estimate of the hydrologic budget for the lake on a long-term average basis. The model estimates long-term watershed water yield based on the hydrologic and watershed factors illustrated in Figure A-1. The model can be applied to any watershed to synthesize yields based on meteorological and watershed parameters. Meteorological input includes temperature, relative humidity, precipitation and wind velocity. Watershed parameters such as groundwater characteristics, storage relationships, area, soil types, well pumping and intra-watershed diversions can also be input to the model.

The model handles the input data in two basic steps: (1) calculation of total yield and (2) routing of the yield through groundwater and surface storage. However, the groundwater storage application was not used in this study. The model concept is shown in Figure A-1. The model has the capability to consider several types of water surface and upland to account for various types of terrain, vegetative cover, and land use including marshes, shallow lakes and deep lakes. Watershed losses are calculated and subtracted from precipitation. Incremental yields from each type of upland or water surface are added to determine the total watershed yield. In the routing portion of the program, the model simulates the storage and routing features of the watershed to provide an accounting system for water remaining after the losses have been removed. Water entering the ground is added to soil moisture and routed to groundwater storage after land evaporation and transpiration demand are satisfied.

The model output is in the form of calculated runoff or yield which simulates the actual quantity and time sequence of water released from the watershed to a stream, a lake or groundwater. Where records of runoff, lake levels or other watershed data are available, the output data are compared to verify the accuracy or the simulation. Necessary adjustments are made to various functions to fine tune the model, enabling a refinement in predicted yield results. Where such verification is not possible due to a lack of hydrologic information, the model may still be used because the simulation

depends only upon the input of climatological and watershed data. Figure A-2 is a generalized model schematic to illustrate the manner in which hydrologic factors and land use parameters are handled. Calculations of yield within the model are based upon methods derived by Adolph P. Meyer in his book Elements of Hydrology. The Meyer Evaporation Formula and methods for determining land evaporation and transpiration are basically empirical methods which are found to give good results when used in water balance calculations.

Water yield from open water surfaces is determined by deducting the losses to evaporation from the precipitation. By varying the coefficients for evaporation, different water surface types can be represented, i.e. deep lakes, shallow lakes and marshes with varying types of cover. Upland yield is the sum of upland runoff and percolation to the water table. Percolation is water that infiltrates into the soil less evapotranspiration losses and soil moisture storage. The evapotranspiration losses are a function of the soil moisture which is available to support those losses; thus, the model includes an accounting system for soil moisture. When soil moisture is limited, evapotranspiration is reduced, but full evapotranspiration loss is realized when adequate soil moisture is available. The remaining water becomes yield as percolation to the groundwater table. The sum of open water yield and upland yield becomes the total yield for the watershed. Use of the model permits the objective consideration of climatologic and land use factors which affect yield without confusing their effect with the effect of watershed parameters.

Figure A-1 illustrates that the upland yield and the open water yield are routed to account for surface storage, groundwater storage, and the effect of landlocked areas, well pumping and losses to seepage beyond the watershed boundaries. The final output is in the form of a daily or monthly hydrograph of runoff or volume over the period of record. As in the case of the yield calculations, the runoff can be compared with observed hydrologic data, where available, and the routing program logically modified to reflect the influence of identified watershed parameters.

The routing portion of the Meyer Model provides a summary of the average monthly surface water inflows, direct precipitation, evaporation, groundwater seepage, surface water outflow from the lake, and the resulting average lake level for the period of available meteorological data.

REFERENCES

Meyer, Adolf F. 1947. Elements of Hydrology. John Wiley and Sons, Inc.

Molsather, L.R., L.J. Kremer, and D.E. Palmer. 1977. Hydrologic Impacts of Land Use Decisions. Paper presented at American Society of Civil Engineers Convention. Preprint #2999, p. 27.

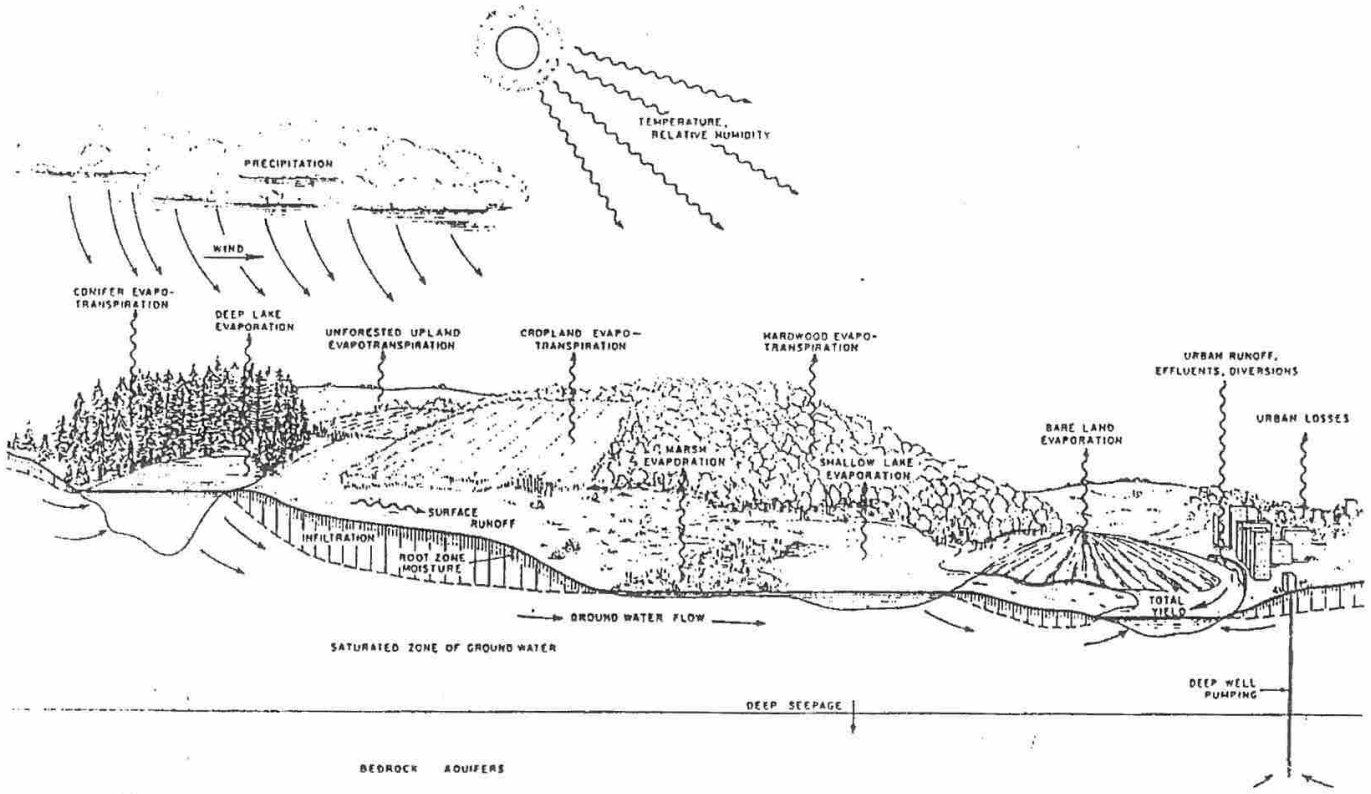


Figure 1

HYDROLOGIC FACTORS CONSIDERED BY THE MEYER MODEL

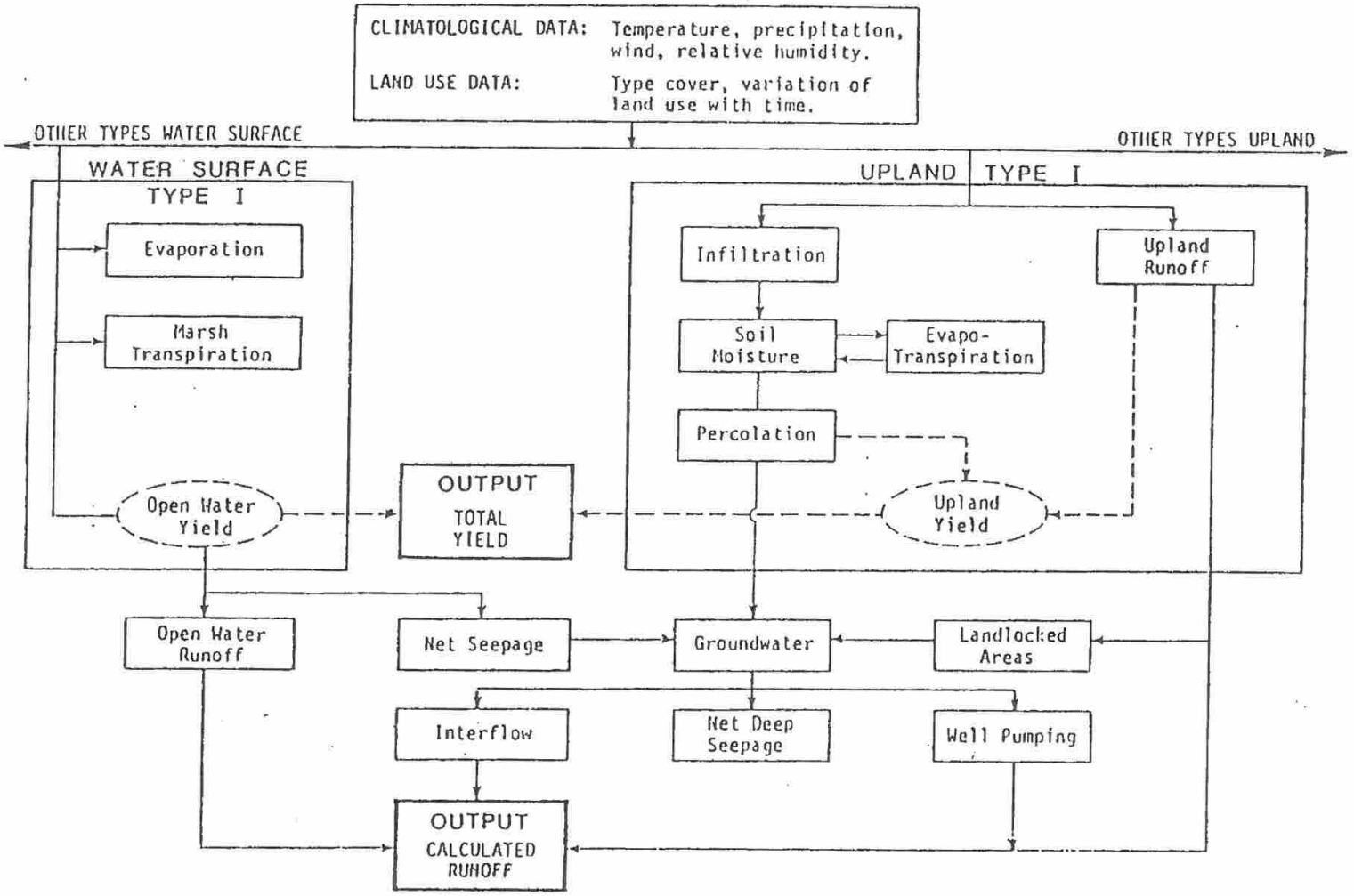


Figure 2

GENERALIZED MEYER MODEL SCHEMATIC

Resolution No. 2016-xx

A Resolution Endorsing the Glen Lake Neighborhood Study

Be it resolved by the City Council of the City of Minnetonka, Minnesota as follows:

Section 1. Background.

1.01. The Glen Lake neighborhood area has been a long established hub of community activity, commerce and life.

1.02. Minnetonka's 2030 Comprehensive Plan identifies the Glen Lake Station village center as a community village center. Community village centers are places with generally strong market demand for commercial activity and the ability to support higher residential densities in appropriate locations.

1.03. Glen Lake has undergone a number of redevelopment efforts and studies since the first Glen Lake Study was completed in the late 1970s. Redevelopment efforts have generally occurred in the commercial area since that time.

1.04. In concert with the Comprehensive Plan implementation efforts, a study of the Glen Lake neighborhood commenced in 2015. The effort was informed by a scoping study that involved a neighborhood working group in 2014.

1.05. The study was guided by a neighborhood working group, public input and a consultant team. The group identified a number of areas, generally on the periphery of the Glen Lake commercial area where change could occur.

1.06. The study represents a framework for future change in the area. It is a collection of conversation, inventory of previous efforts and conceptual designs from residents, property owners, businesses and other interested parties. The outcome of the Glen Lake Neighborhood study is a document to guide future discussions about change in the neighborhood.

Section 2. Council Action.

2.01. Be it resolved, the council of the city of Minnetonka adopts this Resolution endorsing the Glen Lake Neighborhood Study.

Adopted by the City Council of the City of Minnetonka, Minnesota, on November 14, 2016.

_____

Terry Schneider, Mayor

Attest:

_____
David E. Maeda, City Clerk

Action on this resolution:

Motion for adoption:
Seconded by:
Voted in favor of:
Voted against:
Abstained:
Absent:
Resolution adopted.

I hereby certify that the foregoing is a true and correct copy of a resolution adopted by the City Council of the City of Minnetonka, Minnesota, at a duly authorized meeting held on November 14, 2016.

_____
David E. Maeda, City Clerk