

**CITY OF CIRCLE PINES, MINNESOTA
PLANNING COMMISSION MEETING**

**May 13, 2019
7:00 P.M.**

AGENDA

1. Call to Order
2. Roll Call
3. Approval of Minutes – April 15, 2019
4. Public Comments
5. Council Report

6. **COMMISSION BUSINESS**

- a. 2040 Comprehensive Plan (Memo)

Commission Action _____

- b. _____

Commission Action _____

7. **ADJOURNMENT**

**CITY OF CIRCLE PINES, MINNESOTA
PLANNING COMMISSION MEETING**

**April 15, 2019
7:00 p.m.**

1. CALL TO ORDER

Chair Kula called the meeting to order at 7:00 p.m.

2. ROLL CALL

Also present were Commissioners Thompson, Petska, Poppinga and McChesney and Assistant City Administrator for Public Services Peterson.

3. APPROVAL OF MINUTES

MOTION:

McChesney moved, seconded by Petska, to approve the March 18, 2019 minutes as presented. **Motion carried 5-0.**

4. PUBLIC COMMENTS

There were no public comments.

5. COUNCIL REPORT

Assistant City Administrator for Public Services Peterson reported that the Council, at its March 26 meeting, reviewed the 2040 Comprehensive Plan chapters from the March 18, 2019 Planning Commission meeting. She said those chapters were then moved forward in the process.

6. COMMISSION BUSINESS

a. 2040 Comprehensive Plan

Assistant City Administrator for Public Services Peterson noted the two sections of Chapter 4 included tonight are Surface Water and Water Supply, and the Sewer section will be reviewed at the next meeting.

Peterson noted Chapter 5, Parks and Trails, is also included for review tonight.

Chapter 4 Water Resources – Surface Water and Water Supply

Peterson explained that surface water is basically storm water, or any water that falls from the sky and flows through the city's system. She said the plan was previously approved by the City Council, and the city holds a storm water permit granted by the State of Minnesota who reviews and approves the plan.

Peterson commented that the city utilizes the plan most days using the best management practices and communicates the plan through newsletters. She said the city also follows everyday practices such as street sweeping and making sure inputs and outputs are clear. It was noted this chapter is put together by the city engineer.

Chair Kula mentioned the former city administrator's name is on the notification list in Appendix A and that will need to be changed. Peterson said that is in the Water Supply Plan and will be corrected. She added that the Water Supply Plan is put together by staff and is submitted to the DNR and Met Council for comment.

Kula asked what impact, if any, will the Arden Hills project have on communities such as ours as that project will have a great deal of impervious surface. Peterson said she does not know about possible impact, but that project is downstream from Circle Pines.

Commissioner McChesney asked if the demand for water is expected to decrease, according to the report. Peterson said yes, it may decrease. McChesney asked if the water conservation efforts by the city are done electively. Peterson said they are, in addition to the tiered water consumption.

Chapter 4, page 22 of Water Resources references a "volume debit" with Rice Creek Watershed District. Kula asked if that refers to the city not using as much water. Peterson said that formula relates to surface water area when a city builds and the formula that has since changed is currently in flux.

Commissioner Thompson asked if there are plans to reuse the surface water runoff. Peterson reported the city has a reuse system in Baldwin Park and uses it to water the ball fields. She noted there is another reuse system off Stardust Boulevard and the iron-enhanced sand filter project off Lake Drive is a way to take phosphorus out of water before it goes into Golden Lake.

Kula commented the city does a good job of notifying citizens of the need to keep lawn debris out of city streets. Peterson mentioned there is a Boy Scout group that will be doing a project to stencil the storm water inlets to also help with awareness.

Kula asked if there are any known sites in the city that are a threat to the water table. Peterson responded none that the city is aware of. She said anything that has been buried in the past has been documented and contained.

It was noted there is one private well and two private septic systems in the city, both on County Road J.

Kula asked if the unknown funding sources for future plans could come from State Aid or is it the city's General Fund. Peterson said generally, the city applies for grants or partnerships.

Kula noted the Wellhead Protection and Sourcewater Protection Plans on page 51 are identified as "in process" and asked if staff or engineers are working on those.

Peterson said a city engineer was working on the Wellhead Protection Plan that is now completed as is the Sourcewater Protection Plan.

Kula asked if the ongoing restriction every year is the odd/even sprinkling ban. Peterson said it is. Kula asked if there is much violation. Peterson said there is not a lot of violation, just more that residents need to be informed of their set time to water.

Chapter 5 Parks and Trails

Assistant City Administrator for Public Services Peterson gave an overview of the chapter. She mentioned the plan basically identifies what is currently in the system, including trails, condition of parks and structures and projected needs over 10 to 20 years. She said there is also a capital improvement plan related to playgrounds and trails.

Commissioner McChesney asked if the playground equipment fund is different than the General Fund. Peterson replied the General Fund contributes around \$20,000 per year toward the playground equipment fund so the money for equipment is there when needed.

Commissioner Poppinga asked if the canoe launch at the end of East Golden Lake Road is bundled with Golden Lake Park. Peterson responded that it is a separate piece.

Kula asked if the parks are all designed to remain in existence and remain improved as the plan is identifying or is the plan a wish list. Peterson said it's a wish list, or a guide for the city into the future.

Kula complimented the Park Board and city staff for their efforts on presenting this chapter.

Commissioner Thompson asked if the piece of land between Stardust Boulevard and the back of Carl Eck Park will remain free of development. Peterson said there is a reuse system underground at that location that takes water out of the system, treats it, and puts it back into the creek. She added that previous Park Board discussions determined the area was not large enough for park expansion.

7. ADJOURNMENT

MOTION: Poppinga moved, seconded by Petska, to adjourn the meeting. **Motion carried 5-0.**

The meeting was adjourned at 7:30 p.m.

Chair

Clerk



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Agenda Item 6a

TO: Planning Commission Members

FROM: Chandra Peterson *CP*

DATE: May 3, 2019

RE: Comprehensive Plan: Chapter 2 Land Use, Chapter 4 Water Resources-Sewer, Chapter 7 Economic Competitiveness, Chapter 9 Implementation

Attached to this memo are the final four chapters of the 2040 Comprehensive Plan to review.

Chapter 2 Land Use

Metropolitan Council has identified Circle Pines as a Suburban designation. Suburban communities experienced continued growth and expansion during the 1980s and early 1990s, and typically have automobile-oriented development patterns at significantly lower densities than in previous eras. Suburban communities are expected to plan for forecasted population and household growth at average densities of at least 5 units per acre for new developments and redevelopments. Staff has identified roughly 10 areas for possible development/redevelopment which amounts to 15.2 acres of land.

In utilizing the Residential Redevelopment Staging by Decade table and using the minimum amount of units, it comes out to be 88 total residential units. This gives Circle Pines an overall density of 5.78 per acre which is more than the required 5 units per acre expected for suburban communities. While the city has identified areas and lots for redevelopment, additional sites could be added as market conditions change. **Identification as a redevelopment site only indicated potential for development and does not indicate the existence of a proposed development.** The end of the chapter does outline goals and strategies as developers are looking to develop or redevelop in the city.

Chapter 4 Water Resources-Sewer

This chapter states that Circle Pines is a fully built community and the impacts of any development or redevelopment would not have a significant impact on the sewer system itself. Also, the city will continue to work on I/I which is Infiltration and Inflow of clean water intruding into the sewer system through cracks in the sewer pipe or residents discharging sump pump water through the sewer



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system instead of outside onto their lawns. The city has been replacing sewer mains through street reconstruction projects and the city will begin to see a decline in the metered amounts which will cost the city less money.

Chapter 7 Economic Competitiveness

This chapter outlines the economic growth opportunities, goals and tools used to maintain and cultivate Circle Pines as a vibrant business community.

Chapter 9 Implementation

This chapter outlines the official controls and capital improvement program that will be used to schedule financial projections of major projects.

Chapter 2: Land Use

Introduction

Circle Pines' future land use plan identifies the location and intensity of future development within the city and establishes a framework in which future development will occur. This plan is intended to guide future development and growth to achieve the community's objectives for balanced, compatible and efficient growth. A key purpose of a Comprehensive Plan is to incorporate forecasted population growth, housing needs, and development opportunities into future land use decisions. The Future Land Use Map is the primary way to do that.

Circle Pines has a unique pattern of development, with large portions of the city covered by wetlands and parklands. Large-scale development of the community began in the 1950s, with the majority of the city developed by the 1990s. The city has undergone some redevelopment since 2000. As a fully developed community, Circle Pines will focus on small infill development and redevelopment opportunities.



The city has prepared a Future Land Use Plan that guides the use and phasing of development in a manner that allows for flexibility to respond to market conditions and provides for types of development desired in the future, such as a variety of housing densities and mixed-use developments. The Future Land Use Plan utilizes the Metropolitan Council forecasts for potential development and provide methods through land use and density to meet the Metropolitan Council's guidance to develop at a minimum density of 5 units per net acre. As a regional planning organization, the Metropolitan Council's role is to ensure regional infrastructure can accommodate Circle Pines' potential growth and growth within the region. Meeting this minimum density requirement ensures that regional infrastructure is used in a cost-effective and efficient manner.

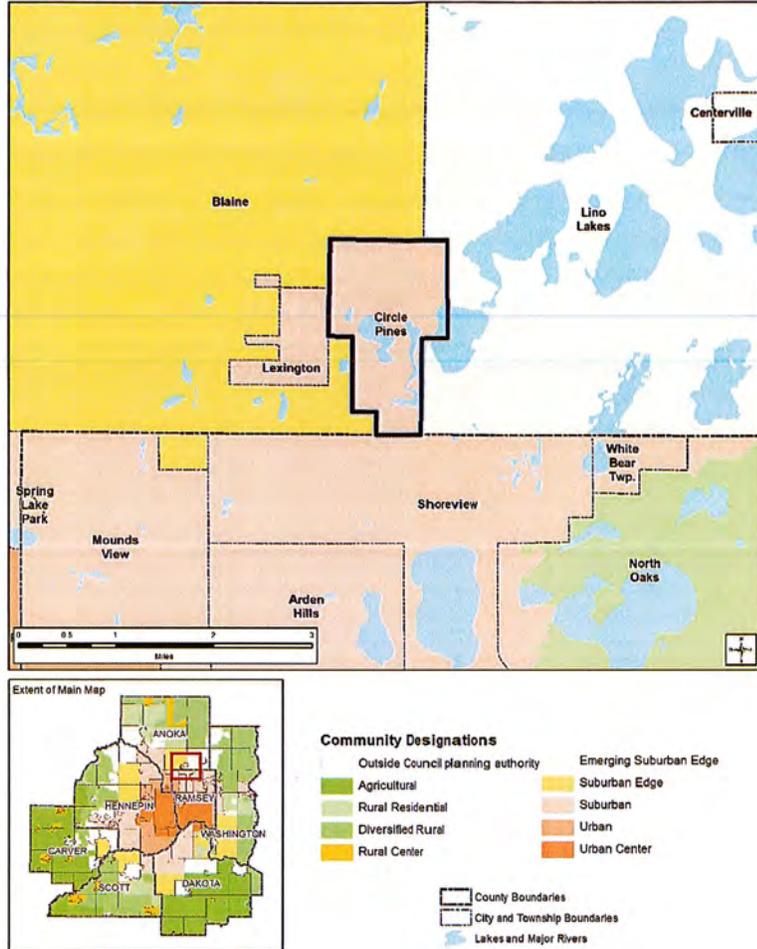
The purpose of the land use inventory is to identify existing development in the city. From this inventory, and the other background information that is compiled, areas of potential development or redevelopment can be analyzed. The inventory can also help classify areas, revealing development patterns, densities, and trends that can provide direction for future development and redevelopment.

Metropolitan Council Community Designation

The City of Circle Pines acknowledges the Metropolitan Council’s community designation for Circle Pines as Suburban. Suburban communities experienced continued growth and expansion during the 1980s and early 1990s and have automobile-oriented development patterns at significantly lower densities than in previous eras. The Community Designation Map graphically indicates the designation.

Suburban communities are expected to plan for forecasted population and household growth at average densities of at least 5 units per acre for new development and redevelopment.

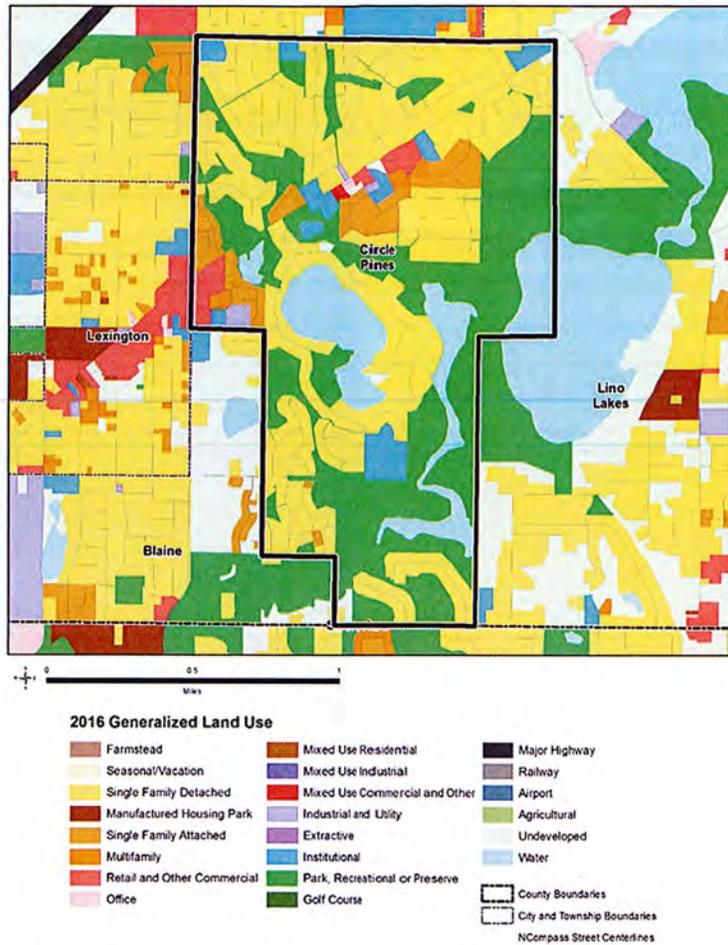
**Community Designations
City of Circle Pines, Anoka County**



Existing Land Use

The Existing Land Use Map graphically indicates the location, intensity and type of development in the city. As shown in the map the City of Circle Pines is a fully developed community. The Existing Land Uses and Acreage Table below illustrates that one-third of Circle Pines consists of open space or park space and that much of Eastern Circle Pines is occupied by open space, Anoka County Rice Creek-North Regional Park Lands. Currently the City has commercial areas located South of Lake Drive along Lexington Avenue. There is also a cluster of businesses in the heart of the city along Lake Drive at Pine Drive. The rest of Circle Pines consists of residential dwellings.

2016 Generalized Land Use
City of Circle Pines, Anoka County



Generalized Existing Land Uses and the Acreage

Land Use Category	Acres	Percent of Total
Industrial and Utility	6	0%
Institutional	49	4%
Mixed Use Commercial and Other	1	0%
Mixed Use Residential	0	0%
Multifamily	7	1%
Office	1	0%
Open Water	139	11%
Park, Recreation or Preserve	405	33%
Retail and Other Commercial	21	2%
Single Family Attached	68	5%
Single Family Detached	537	43%
Undeveloped	8	1%

Future Land Use

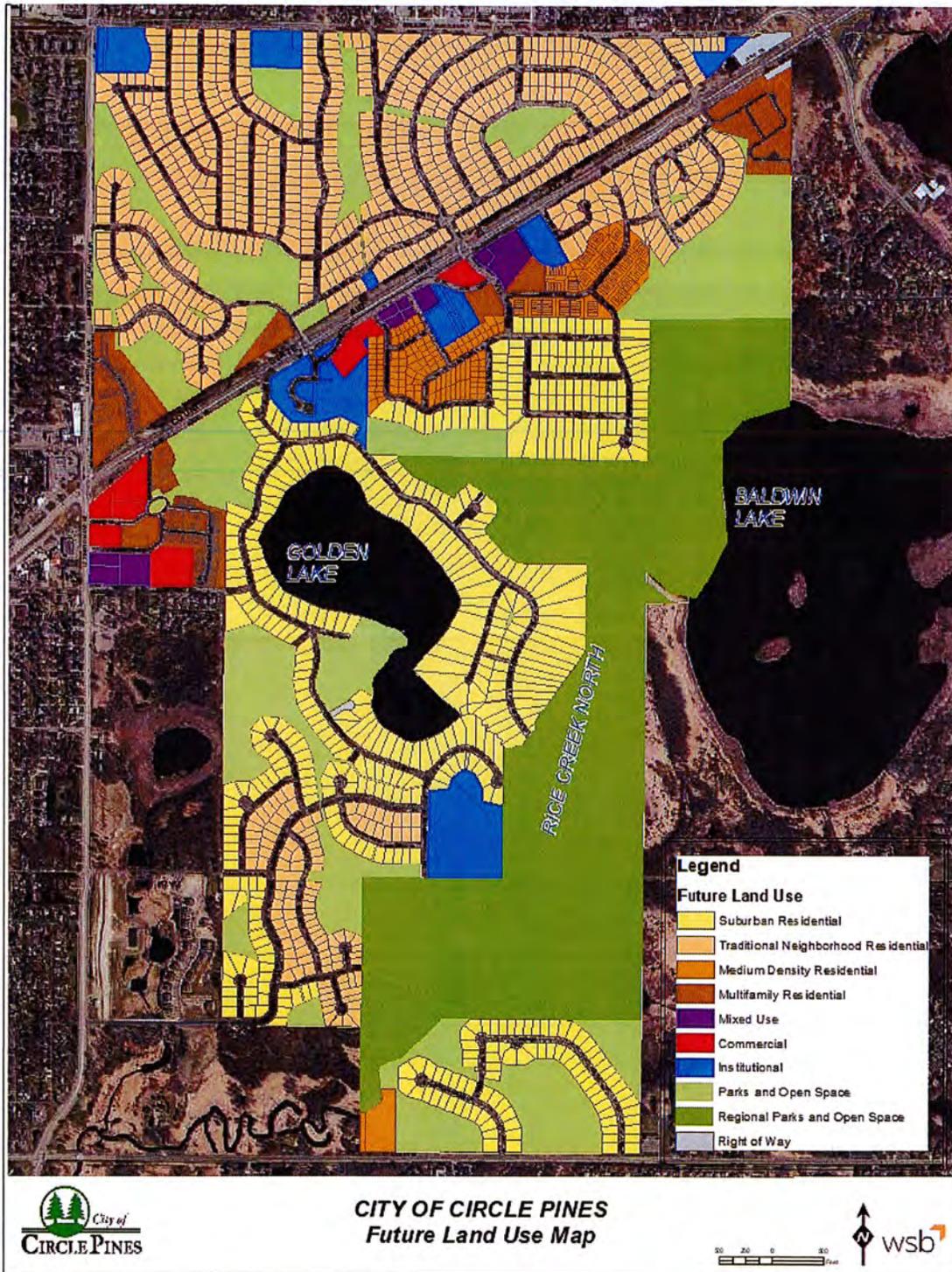
The city has updated its future land use map to accommodate and encourage scattered redevelopment, to be a more accurate reflection of existing and future uses, and to provide additional guidance to elected and appointed officials, city staff, property owners, the development community, and the general public.

2040 Land Use Categories

Land Use District	Description	Density
Suburban Residential	Low-density single family detached housing on larger lots	2-3 units / acre
Traditional Neighborhood Residential	Low-density single family detached housing	3-6 units / acre
Medium Density Residential	Single family detached housing	6-10 units / acre
Multifamily Residential	Single family attached housing, multifamily housing	10-30 units / acre
Commercial	Businesses, service establishments, retail and industrial uses	NA
Mixed Use	Multifamily residential and commercial uses in vertical or horizontal mixed development	10-30 units / acre 50% residential 25% retail 25% office
Water	Open water including lakes and creeks	NA
Parks and Open Space	City and county park and open space	NA
Institutional	Government facilities, schools, and places of worship	NA
Regional Parks and Open Space	Regional parks and open space	NA
Right of Way	Transportation and public right of way	NA

2040 Future Land Uses and the Acreage

Land Use	Acreage	Percent of Total
Suburban Residential	198.12	15.9%
Traditional Neighborhood Residential	226.46	18.2%
Medium Density Residential	31.37	2.5%
Multifamily Residential	36.46	2.9%
Commercial	13.13	1.1%
Mixed Use	10.22	0.8%
Parks and Open Space	182.05	14.7%
Institutional	42.37	3.4%
Regional Parks and Open Space	246.91	19.9%
Right of Way	255.13	20.5%
Total	1,242.22	100%



Land Use Designation Changes

The 2040 Comprehensive Plan renames a number of land use categories to better reflect existing characteristics and provide more flexibility. Additionally, a number of parcels have been regraded to better reflect existing and future land uses. Changes include:

- 2-3 Housing Units/Acre renamed Suburban Residential
- 4 Housing Units/Acre renamed Traditional Neighborhood Residential

- 4-8 Housing Units/Acre renamed Medium Density Residential
- 10+ Housing Units/Acre renamed Multifamily Residential
- Schools, Churches, and Nonpark renamed Institutional
- City and County Parks renamed Parks and Open Space
- Regional Open Space renamed Regional Parks and Open Space
- Mixed Use district added
- A number of parcels reguided from Commercial to Mixed Use
- A number of parcels reguided from City and County Parks to Suburban Residential and Traditional Neighborhood Residential
- A number of parcels reguided from Schools, Churches, and Nonpark and 4-8 Housing Units/Acre to City and County Parks



Redevelopment

The city has identified a number of potential redevelopment sites throughout the community. While the city intends to allow the private market to drive redevelopment, the city would consider providing assistance and resources to projects on a case-by-case basis and for those projects that meet the goals of this plan. While these sites have been identified for redevelopment additional sites could be added as market conditions change. Identification as a redevelopment site only indicates the potential for redevelopment and does not indicate the existence of a proposed redevelopment.

Expected Growth and Population Forecasts

Future land use planning begins with incorporating forecasts of community growth and anticipating the needs that will arise because of this growth and change. The Metropolitan Council has developed growth forecasts for Circle Pines by decade, addressing the projected population, number of households, and number of jobs. Meeting expected growth projections requires intentional land use planning. Metropolitan Council forecasts indicate that Circle will experience a slow rate of growth, supported through scattered site redevelopment efforts.

Forecasted Population, Households and Employment

	2016	2020	2030	2040
Population	5,023	5,030	5,120	5,275
Household	2,035	2,045	2,090	2,180
Employment	727	750	750	800

The tables below outline anticipated growth of 59 households during the 2021-2030 decade and 92 households during the 2031-2040 decade. This meets the forecasted growth models put forth by the Metropolitan Council.

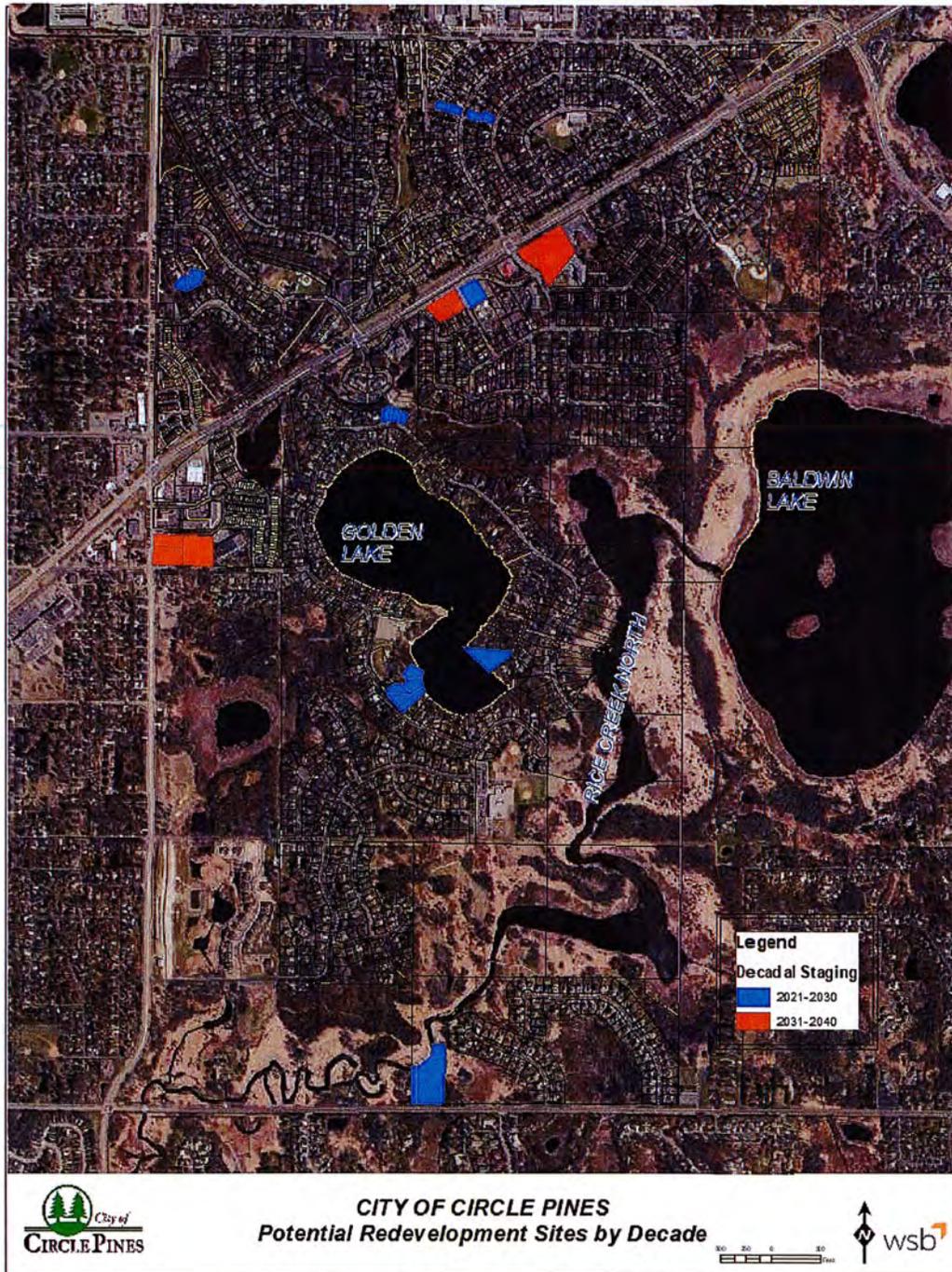
Residential Redevelopment Staging by Decade

Residential Land Use Districts	Land Yield	Total Acres	Acres by Decade		Density Range			Minimum Units		Midpoint Units	
			2030	2040	Min	Mid	Max	2030	2040	2030	2040
Suburban Residential	100%	4.5	4.50		2	2.5	3	9		11	
Traditional Neighborhood Residential	100%	1.9	1.90		3	4.5	6	6		9	
Medium Density Residential	100%	3.7	3.70		6	8	10	22		30	
Mixed Use	50%	10.2	1.00	9.2	10	20	30	5	46	10	92
Total Units								42	46	59	92

Affordable Housing by Decade

Affordability Band	Density Minimum	Minimum Units		Midpoint Units	
		2030	2040	2030	2040
51-80% AMI	6 units/acre	22		30	
50% AMI and Below	12 units/acre	5	46	10	92
Total Units		27	46	40	92

Redevelopment Potential by Decade



Overall Density

The lands guided for potential redevelopment exceed the required density for communities designated as Suburban. The Metropolitan Council outlines a density of 5 units per acre.

Community Density Table	
Acres Guided for Redevelopment	15.2
Minimum Expected Residential Units	88
Overall Density	5.78

- **Overall Average Density:** Applying the *minimum* end of the density range to each residential land use category, the overall density is the total number of expected minimum units divided by the total number of acres in the likely redevelopment areas. The overall expected average density of the potential growth areas of Circle Pines is about 5.78 units per acre, which exceeds the minimum of 5 units per acre range expected of Suburban communities.
- **Overall Forecasted Growth:** Applying the *midpoint* of the density range to each residential land use category, the net number of expected units from this calculation is 151 units added by 2040.

It is important to note that it is difficult to provide an accurate forecast at the individual land use category level and individual category growth rates could vary significantly. However, the city will monitor the growth in aggregate to ensure that it remains within forecasted ranges or that the Metropolitan Council is alerted if aggregate growth begins to appear that might significantly vary from what is forecasted.

Employment Forecast

The city has identified a number of sites for mixed use redevelopment. Assuming an even split of office and retail uses it is anticipated the city will add approximately 78 jobs through the year 2040. Given the reality of changes to the office and retail markets, automation, online shopping, and remote work, these figures are only to be used for planning purposes.

Expected Employment Growth

Land Use	Acres	Square Feet	Yield	Floor Area Ratio	Square Foot Yield	Square Feet/Employee	Employees
Mixed Use - Retail	10.2	444,312	25%	0.28	31,102	1200	26
Mixed Use - Office	10.2	444,312	25%	0.28	31,102	600	52

MUSA

The city of Circle Pines is entirely located within the MUSA.

Airport

Circle Pines has no existing structures of 200 feet or more in height to impact regional airspace safety and has no plans to permit such structures in the future. Any sponsor proposing any construction or alteration that would exceed a height of 200 feet above ground level at the site shall notify the Commissioner of the Minnesota Department of Transportation at least 30 days in advance as required under Minnesota Statutes 360, the state regulates the height of structures; they are defined and enforced under Aeronautics Rules and Regulations 8800.1200 and shall present a certified copy of such notification to the city at least 10 days before the proposal is considered by the city.

Special Resource Protection

Historic Preservation

Most construction in Circle Pines took place after 1950 and at this time it does not have historical impact. The City Council and Planning Commission will take actions to preserve structures that contribute to the history and heritage of the community.

Goals, Strategies and Tactics

Goal 1: Align Land Use and Development Mechanism with 2040 Comprehensive Plan

1. Update Development Code for alignment with the goals of 2040 Comprehensive Plan
 - a. Update Zoning Ordinance for alignment with the goals of 2040 Comprehensive Plan in a fashion that is accessible and user-friendly
 - b. Update Subdivision Ordinance for alignment with the goals of 2040 Comprehensive Plan in a fashion that is accessible and user-friendly
2. Institutionalize regular review of Zoning and Subdivision Ordinances and related sections of the city code
 - a. Review code annually and update as needed to reflect new or revised planning studies, new or revised state or federal laws, experiences in the field or with development processes, technological and/or cultural advances, new or emerging land use categories, and/or updates for areas or districts that have become obsolete.
3. Regularly study and address new issues, trends, and technologies related to land use
 - a. Explore regulations and procedures related to short-term rentals
 - b. Explore regulations and procedures related to accessory dwelling units

Goal 2: Support maintenance of aging neighborhoods

1. Support the rehabilitation and revitalization of residential and commercial districts
 - a. Provide information about remodeling and rehabilitation of residential structures on the city's website
 - b. Continue to enforce and address building code issues to improve and protect the overall appearance of the city's neighborhoods and protect property values
2. Simplify and streamline the development review and building permit processes to be customer-oriented
 - a. Review building and planning review policies and practices to identify opportunities to reduce unnecessary regulatory barriers
 - b. Update the city's building and planning information, handouts, and website

Goal 3: Grow Strategically

1. Support the redevelopment of aging and underutilized sites
 - a. Facilitate and support the redevelopment process between property owners, real estate developers, neighbors, and elected and appointed officials
 - b. Support in-fill development of scattered single-family sites
 - c. Study the retrofitting or redevelopment of existing shopping centers and underutilized commercial sites
2. Encourage high quality design for all redevelopment projects

- a. Protect the community's character by adopting development and design standards that require high-quality and unique architectural and site design site.
- b. Encourage efficient use of land and infrastructure through compact development standards

Chapter 4: Water Resources

Chapter 4 contains information regarding the Sanitary Sewer, Surface Water Management and Water Supply Plan.

Sanitary Sewer

1. INTRODUCTION

Purpose

The Sanitary Sewer Plan describes the existing sanitary sewer system, projects future wastewater flows, and proposes improvements to satisfy future conditions. The City is responsible for local wastewater collection, while the Metropolitan Council provides regional collection and treatment. Accordingly, the City uses this Plan to evaluate its local collection facilities, and the Metropolitan Council uses it to evaluate its regional collection and treatment facilities.

Community Forecasts

As shown in the table below, the Circle Pines population will not exceed 5,280, households will not exceed 2,180, and employment will not exceed 800 by the year 2040. Circle Pines is a fully developed community and will not require significant changes to the sanitary sewer system in the next 20 years.

Table 1. Community Forecasts

	2020	2030	2040
Sewered Population	5,030	5,120	5,280
Sewered Households	2,040	2,090	2,180
Sewered Employment	750	750	800
Unsewered Household	1	1	1

Because the City is not expecting significant increase in the projected population, households, or employment, the projected increase in wastewater flow is not significant enough to require changes to the existing sanitary sewer system. Any new development is anticipated to occur as redevelopment of areas that are already served by the sanitary sewer system.

2. EXISTING SANITARY SEWER SYSTEM

Summary

The City of Circle Pines sanitary sewer system includes 18 miles of gravity sewer, 501 manholes, 3 lift stations, and 0.6 miles of forcemain. The system has been divided into four districts, and further into sixteen sub-districts, for the purposes of capacity analysis. The existing sanitary sewer system and the sanitary sewer districts are shown in **Figures 4-1** and **4-2**.

The system collects and conveys the City’s wastewater to Metropolitan Council Environmental Services (MCES) Meter M205. From there, the wastewater flows through the MCES regional system to the MCES Metropolitan Wastewater Treatment Plant (WWTP) located southeast of St. Paul on the Mississippi River. The Metropolitan WWTP has a capacity of 251 MGD, provides advanced secondary treatment with chlorination/dechlorination, and discharges treated effluent to the Mississippi River. It also generates energy from the residual biosolids for in-plant use.

Gravity Sewer

The City’s gravity sewers consist of 8-inch to 15-inch diameter polyvinyl chloride (PVC) pipe, vitrified clay pipe (VCP), and cured-in-place pipe (CIPP). A summary of the trunk gravity sewers (greater than 8-inch diameter) is provided below.

Table 2. Trunk Sewers

District	Sub-District	Trunk Location	Diameter	Capacity (gpm)
North	1	Stardust Blvd	12"	750
	5	East Rd	15"	1,120
Central	7	Lake Dr	10"	520
	8	Tamarack Park	10"	570
	9	Golden Lake Rd	15"	1,120
	12	Woodland Rd	10"	520
South	13	Flowerfield Rd	12"	750

Lift Stations

The City’s sanitary sewer system includes three (3) lift stations, as summarized below.

Table 3. Lift Stations

No.	Name	Year Constructed	Firm Pumping Capacity (gpm)
1	E Golden Lake LS	2016	110
2	Hillcrest LS	1983	175
3	Indian Hills LS	1987	220

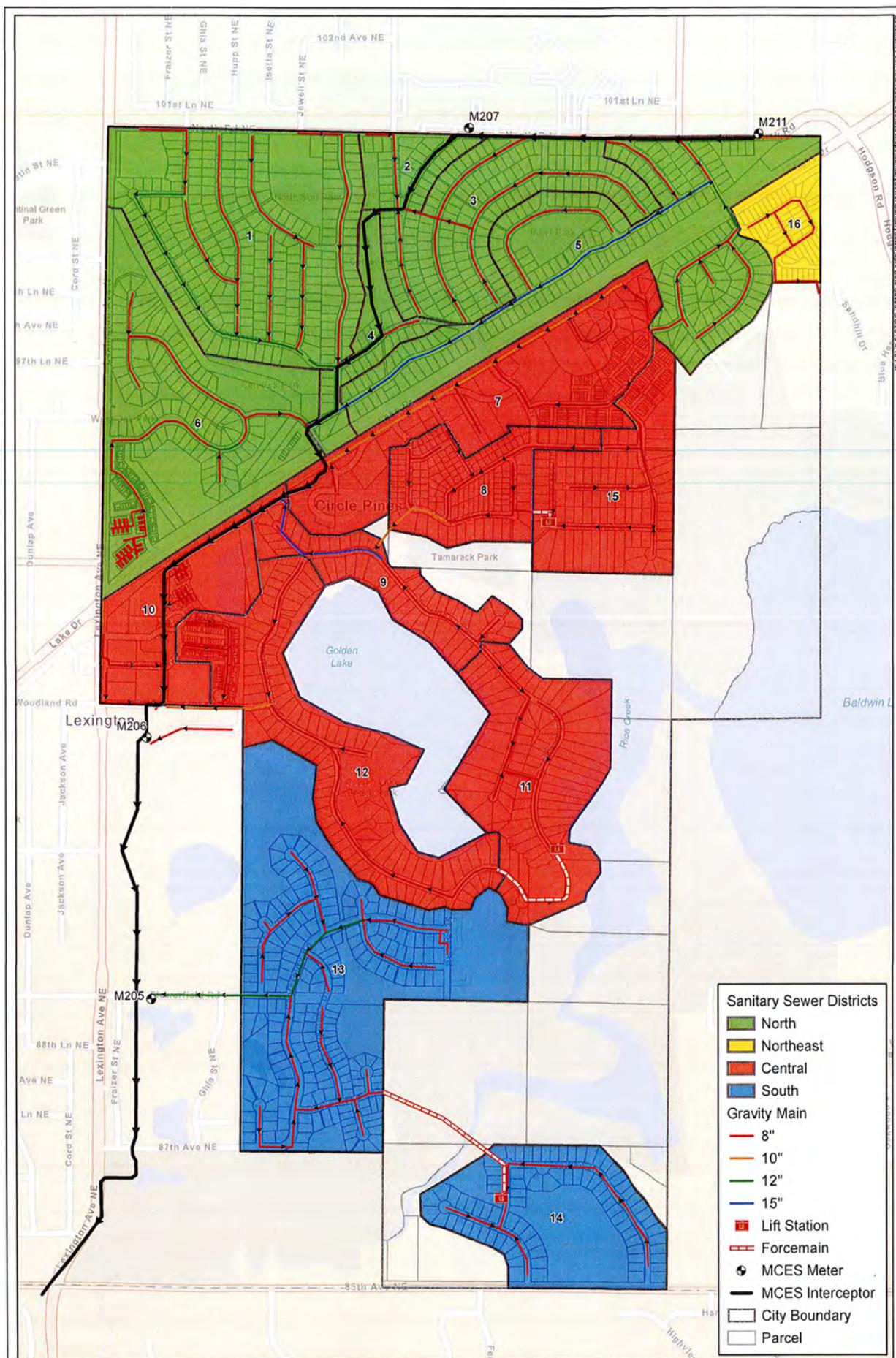
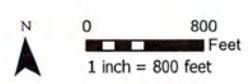


Figure 4-2. Sanitary Sewer Districts
 Comprehensive Sanitary Sewer Plan
 City of Circle Pines, MN



Historical Wastewater Flows

The total per capita wastewater flow was calculated from MCES flow meter data from 2014-2018 and from populations interpolated based on the Metropolitan Council 2015 System Statement Forecasts for the City. The average total per capita wastewater flow from 2014-2018 was 65 gallons per capita per day.

Table 5. Historical Wastewater Flows

Year	Annual Flow (MG)	Average Daily Flow (MGD)	Total Per Capita Flow (gpcd)
2014	132	0.361	72
2015	119	0.327	65
2016	128	0.349	69
2017	109	0.298	59
2018	113	0.309	62

MG = million gallons; MGD = million gallons per day; gpcd = gallons per capita per day

Individual Sewage Treatment Systems

There is one individual sewage treatment system (ISTS) within the City of Circle Pines which serves a private residence and has no known issues. The location of this system is shown in **Figure 4-3**. The City Code requiring filling of existing ISTS and connection to the public collection system is excerpted below.

610.10 Existing Septic Tanks to be Filled.

Upon applying for a permit to connect to the municipal sanitary sewer system, the applicant shall agree when applicable to pump out the contents of any cesspool or septic tank then located on this property and to refill same with noncombustible and non-deteriorating fill to the lot level. The owner or his/her agent shall have such septic tank and/or cesspool pumped and filled within one year from the time that said sewer connection is completed.

620.02 Use of Public Sewers Required.

Subd. 3 Construction of Sewage Disposal Facilities. Except as herein and under this Section of any municipality, it is unlawful to construct or maintain any privy, privy vault, septic tank, cesspool or other facilities intended or used for the disposal of sewage, or the disposal of any other type waste which pollute any waters of the state within the District.

Intercommunity Flows

The service areas for the intercommunity sanitary sewer connections between the City of Circle Pines and neighboring communities are as follows:

Table 4. Intercommunity Flows

City	INTO Circle Pines	FROM Circle Pines
Lino Lakes	6 services	57 services
Blaine	70 services	-
Total	76 services	57 services

Community Treatment Systems

There are no public or private community treatment system within the City of Circle Pines. All properties within the City are served by the public collection system or by individual sewage treatment systems.

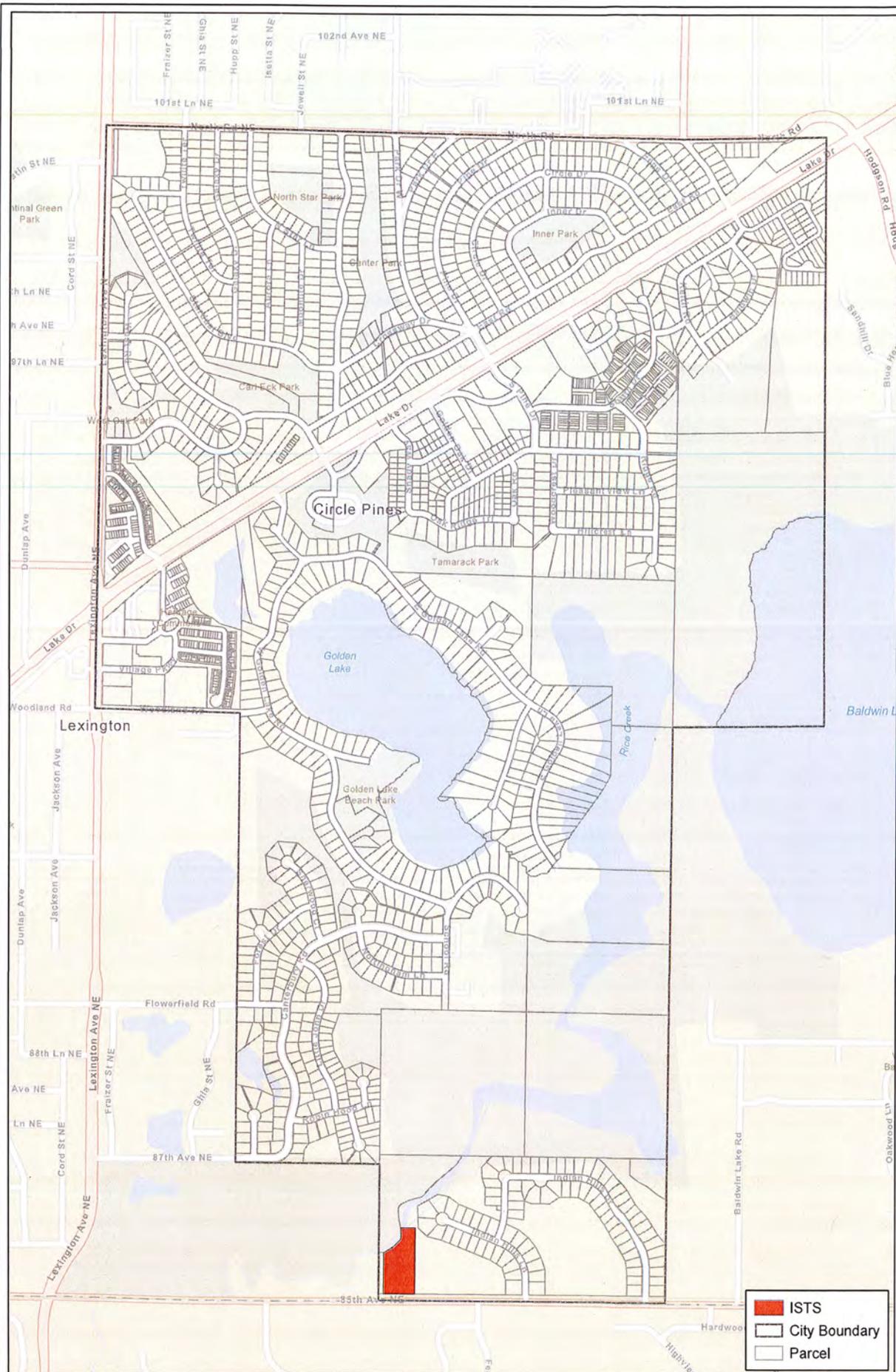
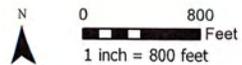


Figure 4-3. Individual Sewage Treatment Systems
 Comprehensive Sanitary Sewer Plan
 City of Circle Pines, MN



3. FORECASTS AND CAPACITY ANALYSIS

Forecasts

The community forecasts for the City of Circle Pines are provided above in **Table 1**. The entire City is sewered and served by MCES Meter M205 and Interceptor 4-NS-523, with the exception of one ISTS. All projected growth will be served by the same MCES facilities.

Methodology

The City’s existing land use designations were used to estimate existing wastewater flows. These flows were then calibrated to equal the average community-wide metered flow from 2014-2018. Future flows were estimated based on areas within the City that are expected to develop or redevelop and the wastewater flow assumptions in **Table 6**. Standard MCES peak hourly flow factors for sanitary sewer design were applied to calculate future peak hourly flows.

Table 6. Assumed Wastewater Flow by Land Use Type

Land Use	Average Daily Flow
Single Family Residential	180 gpd/unit
Medium Density Residential	1,440 gpd/acre
Multifamily Residential	3,600 gpd/acre
Mixed Use (50% Multifamily, 50% Commercial)	2,200 gpd/acre
Commercial, Industrial	800 gpd/acre
Institutional	600 gpd/acre
Parks, Open Space, ROW, Water	None

Trunk Sewer Capacity

The projected peak hourly flow and residual capacities in the City’s trunk gravity sewers are listed below. The peak hourly flows listed include the flow from upstream sub-districts and lift stations. All trunk gravity sewers are projected to have adequate capacity through the year 2040.

Table 7. Trunk Sewers

Trunk Location	Diameter	Capacity (gpm)	2040 Peak Hourly Flow (gpm)	Residual Capacity (gpm)
Stardust Blvd	12"	750	107	643
East Rd	15"	1,120	80	1,040
Lake Dr	10"	520	139	381
Tamarack Park	10"	570	233	337
Golden Lake Rd	15"	1,120	256	864
Woodland Rd	10"	520	178	342
Flowerfield Rd	12"	750	315	435

Lift Station Capacity

The projected peak hourly flow and residual capacities in the City’s lift stations are listed below. All lift stations are projected to have adequate capacity through the year 2040.

Table 8. Lift Stations

No.	Name	Firm Pumping Capacity (gpm)	2040 Peak Hourly Flow (gpm)	Residual Capacity (gpm)
1	E Golden Lake LS	110	29	81
2	Hillcrest LS	175	50	125
3	Indian Hills LS	220	39	181

Proposed Improvements

The proposed sanitary sewer system improvements are shown in **Figure 4-4**. Because the City is fully built out, few significant sanitary sewer system improvements are needed to serve forecasted growth and redevelopment.

The Land Use Plan identifies an opportunity for development of two parcels on the southern boundary of the City along County Road J. These parcels are partially isolated from the existing system by wetlands, and there are a few options for extending sanitary sewer service to this area. They can be served by (1) a gravity extension from Indian Hills Lane in Sanitary Sewer District 14 with insulation or fill, (2) a new lift station discharging to Sanitary Sewer District 14, or (3) a gravity extension from the City of Shoreview sanitary sewer system in Fernwood Street. Prior to development of this site, it is recommended that a feasibility study be completed to determine the most practical and cost-effective solution for extending service to that location.

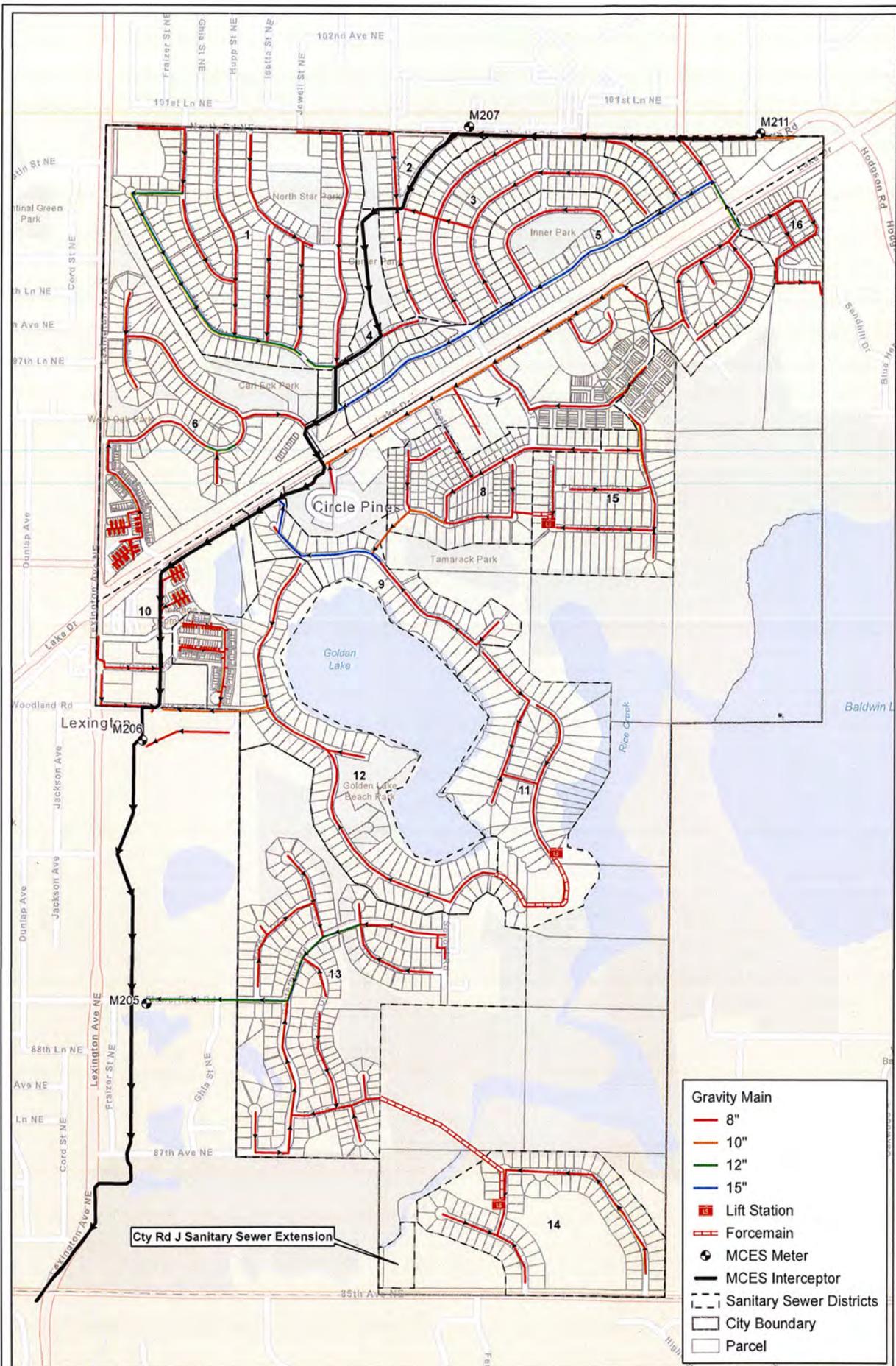
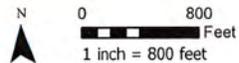


Figure 4-4. Proposed Sanitary Sewer System

Comprehensive Sanitary Sewer Plan
City of Circle Pines, MN



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4. INFLOW AND INFILTRATION

Introduction

Inflow and Infiltration (I/I) refers to water entering the sanitary sewer system from unintended sources. The water is typically clear, that is, not requiring treatment at the same level as wastewater. Inflow is runoff from rain events that drains directly into the sanitary sewer from such sources as storm sewer cross connections, foundation drains, sump pumps, and open manholes. Infiltration refers to groundwater that enters the sewer system through open pipe joints, leaking manhole walls, and cracked or broken pipe.

Inflow generally appears as a dramatic spike in the sewer flow during and immediately after a rain or snow melt event. The duration is generally short and the peak flow high. Oftentimes, inflow will result in short-term system backups that can flood basements and occasionally rise out of manholes.

Infiltration is also highlighted during rain and snow melt events, however, the rise in flow is delayed and flow rates can remain elevated for quite some time. The delay in rising flow rates is due to the time required for rainwater to filter through the ground to the sanitary sewer. This filtering both reduces the peaks and prolongs the duration of the high flows.

If left unchecked, I/I create additional cost for communities for a number of reasons. First, treating water that is already clean creates unnecessary chemical and electrical costs. Second, the dilution of the wastewater reduces the efficiency of the treatment process, making it more difficult to meet pollutant elimination regulations. Third, treatment plants and sanitary sewers must be made larger to handle the peak flows that can surge to the treatment plant after runoff events. It is more cost effective to eliminate sources of I/I than it is to expand infrastructure to collect and treat it.

MCES establishes annual I/I goals for each community discharging wastewater to its regional collection system based on average flows, adjustments for community growth, and I/I mitigation peaking factors.

I/I Reduction Strategy

Removing I/I from the sanitary sewer system requires a continuing program of replacement, inspections, maintenance, and repairs. The sanitary sewer system is no different than other infrastructure types. As with streets, every year the condition of the sewer system degrades. Cracks form, joints leak, and infiltration increases. If the existing system is left alone, it will only continue to deteriorate and become worse.

The I/I Reduction Program will consist of televising each main line every ten years, on a rotating schedule, to determine the repairs needed to eliminate the I/I from the area. Typical inspections will be manhole inspections. Typical repairs will include pressure grouting of pipe and manholes, slip lining of pipe, structural lining of manholes, and installation of chimney seals on manhole adjusting rings.

Of particular importance is the last item, installation of chimney seals. Because of the freeze thaw cycles in Minnesota, the adjusting rings (the area between the cast iron frame and the precast manhole wall) are especially susceptible to cracks and I/I. Typically, the joints between the rings, frame and manhole wall are made of mortar which does not have a great deal of flexibility. During freeze/thaw cycles, the castings move up and down with the roadway, cracking the mortar joints and opening an I/I pathway. "Chimney seals" are one type of flexible rubber gasket that can be installed around the inside or outside of the manhole. They flex with the ground during freeze/thaw cycles and remain watertight. There are several types of these flexible products available to address the variable conditions and uses in a collection system.

Reducing I/I also includes eliminating clearwater sources from private properties. The City Code prohibiting the discharge of clearwater to the sanitary sewer system is excerpted below. The City will pursue an ordinance requiring the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system within six months of the adoption of this plan.

620.03 Public Sewers; Unpolluted Waters Prohibited.

Subd. 1 Prohibited Discharges. No person shall discharge or cause to be discharged, directly or indirectly, to any sanitary sewer any of the following: storm water, surface water, groundwater, roof runoff, subsurface drainage, cooling water, or unpolluted industrial process waters.

Existing I/I Analysis

The existing sanitary sewer system is made up of approximately 18 miles of gravity sewer, 501 manholes, 3 lift stations, and 0.6 miles of forcemain. There are also approximately 1.9 miles of MCES trunk sewer within the City. Approximately 40% of the housing in the City was constructed before 1970. The only I/I evaluation of the pre-1970 era housing has been the televising of the lateral connection to the main.

The amount of clearwater flow generated within the City was estimated by calculating the average annual and peak month I/I rates, equal to the average wastewater flow minus the base wastewater flow, using data from 2014-2018. The average flow, both annual and monthly, was calculated from MCES meter data. The peak month flow was determined for each year from 2014-2018, and then those peak month flows were averaged to give the value listed in **Table 9**. The base flow was approximated as the minimum daily flow within each year.

The City's metered flow is calculated using data from four meters: M205 – (M206 + M207 + M211). Because the City's meter formula is based on data from three other meters in other communities (Lexington, Blaine, and Lino Lakes), its data is susceptible to errors and irregularities from all of these metersheds and the intermediary regional collection system. Therefore, the data presented below should be considered qualitative in nature, rather than an exact quantification of I/I within Circle Pines.

Table 9. Estimated I/I Rate

Average Flow	0.33 MGD
Peak Month Flow	0.40 MGD
Base Flow	0.18 MGD
Average Annual I/I Rate	0.15 MGD (45%)
Peak Month I/I Rate	0.22 MGD (55%)

MGD = million gallons per day

It is also important to note that the City began a Street Reconstruction Program in 2008 that incorporated the replacement of all utilities, including sanitary sewer mains. The projects occur every other year and will continue until 2020. As shown in **Table 10**, significant investment has been made in the sanitary sewer system from 2014-2018, when this flow data was collected. Therefore, the full impact of these improvements has not yet been metered and is not reflected in the I/I rates listed in **Table 9**. In other words, it is expected that actual current I/I rates are lower than those above given the improvements made in recent years.

I/I Work Completed

The City completes regular street and utility improvement projects, typically every other year. These projects include pipe replacement, manhole replacement, casting adjustments, chimney seals, lining, and televising. The sanitary sewer costs for the projects completed in the last ten years are listed in **Table 10**. The City invests approximately \$300,000 dollars each year in sanitary sewer improvements, which will lead to a long-term reduction of I/I.

Table 10. I/I Reduction Work

Year	Project	Cost
2008	West Golden Lake Rd Improvements	\$389,371
2010	2010 Street Reconstruction	\$332,103
2012	2012 Street Reconstruction	\$341,572
2014	2014 Street Reconstruction	\$687,403
2015	2015 Mill and Overlay Improvements	\$59,780
2016	2016 Street and Utility Improvements	\$521,394
2018	2018 Street and Utility Improvements	\$837,862
2018	2018 Partial Street Reconstruction	\$15,969

With the televising completed during the street and utility improvement projects, the City is able to view the condition of the private service lateral connections to the public sewer mains and identify any issues. The City will explore additional activities for I/I reduction from private sources, such as sump pump inspections, smoke testing, and service lateral televising.

I/I Cost Effectiveness

It is important to consider the cost effectiveness of the annual program described above. I/I reduction programs have varied effectiveness in reducing I/I rates. Some very successful programs have significantly reduced the amount of I/I in the sewer systems. However, it is also common for there to be very little actual reduction in I/I flow. That is not to say that these programs were not successful, just that all of the potential I/I sources could not be immediately identified and rehabilitated. The I/I defects that are rehabilitated will reduce treatment costs, but additional previously-unidentified sources may become active, suggesting that the removal was not completely effective.

Infiltration, as opposed to inflow, is very difficult to remove because the groundwater can enter any crack in manholes, sewer pipes, joints, and service lines. When one crack is repaired, the water may enter through another one further upstream. Each repair makes it more difficult for water to enter, but it is impossible to completely eliminate all infiltration.

On the other hand, if nothing is done in terms of maintenance and repair, pipes and manholes will continue to deteriorate, increasing the amount of groundwater entering the system. So, while the volume of I/I may or may not decrease with annual maintenance, I/I certainly will not increase as quickly as it would if nothing had been done.

Therefore, while a definitive answer to the question of how much I/I will be removed from the sewer system cannot be answered, the cost effectiveness of both the annual maintenance and sump pump removal programs are inherent. The annual maintenance program is needed as much for future I/I prevention as it is for current I/I reduction. No programs for I/I reduction will ever eliminate all of the clearwater from the sanitary sewer system.

5. CAPITAL IMPROVEMENTS

The City is fully built out, so the sanitary sewer capital improvements primarily consist of maintaining the existing infrastructure. As mentioned previously, the City will televise all sanitary sewer pipes once every ten (10) years on a rotating schedule. At a televising cost of \$1.30 per linear foot, with a 10% contingency and 25% indirect costs, this equates to an annual investment of approximately \$18,000.

Table 11. Sanitary Sewer Capital Improvements

Year	Project	Estimated Cost
2019	SCADA System Upgrades	\$12,000
	Sewer Service Truck	\$58,000
	I/I Reduction	\$10,000
2020	Sewer Jetter Truck	\$300,000
2023	I/I Reduction	\$10,000
TBD	Cty Rd J Sanitary Sewer Extension	TBD*

**Pending feasibility study.*

6. SUMMARY AND RECOMMENDATIONS

In summary:

1. The City of Circle Pines has an existing sanitary sewer system made up of approximately 18 miles of gravity sewer, 501 manholes, 3 lift stations, and 0.6 miles of forcemain. There are also approximately 1.9 miles of MCES trunk sewer within the City.
2. The City has made significant investments to replace and rehabilitate the sanitary sewer system in the last ten years, which is expected to result in a reduction of I/I.
3. The City will continue I/I reduction efforts with an annual program to identify and reduce I/I sources. It is recommended that the annual I/I Reduction Program include televising, inspection, and repair of approximately 10% of the sanitary sewer system each year.
4. The City will continue to maintain the existing sanitary sewer system via the improvements listed in **Table 11**. Because the City is fully built out, no major improvements to the sanitary sewer system are required.

Chapter 7: Economic Competitiveness

Circle Pines Strives to Maintain and Cultivate a Vibrant Business Community

Successful businesses are important to our community because they provide goods and services, as well as job opportunities, for our citizens. We want our businesses to be profitable, well-served by the city services they receive for their tax dollars, and active members of the community.

Goals:

1. Identify redevelopment opportunity areas and set a vision for what these areas are.
2. Encourage environmental remediation of redevelopment areas
3. Target older commercial areas for high quality redevelopment which will improve the tax base and employment opportunities in the City
4. Redevelopment should be done in consultation with the City's capital improvements plan
5. Promote pedestrian and transit-friendly developments to are interconnected to the current parks and trail system
6. Evaluate the use of TIF and other programs that might provide assistance for commercial areas.

Policy

Explore the costs of economic development and housing redevelopment and their benefits. This policy could utilize TIF and Tax Abatement along with other grant programs such as CDBG to accomplish the goals set out below. The City could also potentially benefit from utilizing the economic development or housing redevelopment authority (EDA/HRA).

City Bond Rating

The City of Circle Pines is very cautious to maintain and strengthen the City's bond rating. The City holds an "AA+" bond rating with the S & P and is on track to become a "AAA" rated. The excellent bond rating helps to ensure the City's debt will be issued at the lower possible interest rate which in turn is a cost savings to the tax payers.

Economic Tools:

1. TIF – Tax Increment Financing – The City is granted the power to establish a tax increment finance districts (TIF Districts). The City has used TIF districts to redevelop blighted areas in the past and it has been a very effective tool.
2. Tax Abatement – The City has the power to use Tax Abatement by the State of Minnesota. The purpose of Tax Abatement is to encourage desirable redevelopment that would not otherwise occur without the assistance provided by the Tax Abatement.

Economic Growth Opportunities / Redevelopment

The properties listed below are possible redevelopment sites that have been identified by the city. While the city intends to allow the private market to drive the redevelopment, the city would consider providing assistance and resources to projects on a case-by-case basis and for those projects that meet the goals of this plan. While these sites have been identified for redevelopment additional sites could be added as market conditions change. Identification as a redevelopment site only indicates the potential for redevelopment and does not indicate the existence of the proposed redevelopment.

1. 10100 Lake Drive

This property is located at 10100 Lake Drive directly beneath the City's water tower. This property closed in 2009 and has remained vacant since that time. April 2019 the building on this property was demolished and the site will soon be ready for redevelopment. This property is zoned C-2 Commercial/Shopping Center District, therefore it could be redeveloped into a restaurant.

2. 9201 Lexington Avenue-Strip Mall

This property was built in 1964 and contains all commercial businesses and is zoned C-2 Commercial/Shopping Center District. This is the oldest commercial property in Circle Pines and therefore could be a candidate for redevelopment.

3. 2 Pines Drive-Glen Oaks Center-Strip Mall

This property was built in 1988 and contains a mixture of commercial businesses. This property is zoned C-2 Commercial/Shopping Center District.

4. 4203 Woodland Road-Alternative Learning Center

This commercial property is currently leased by the Centennial School District and is used as the alternative high school. The school district plans on consolidating the alternate school onto school owned property in the next few years. This property was built in 1974 and sits on about 2 acres. This property is zoned C-3 Commercial/Industrial.

5. 9 Golden Oak, 640 Civic Heights Drive & 2 Vacant lot behind these properties

640 Civic Heights Drive and 9 Golden Oak are zoned commercial and the vacant properties are zoned residential. The current properties were built in the 1980's and 1990's and could serve as a site for possible redevelopment.

Chapter 9: Implementation

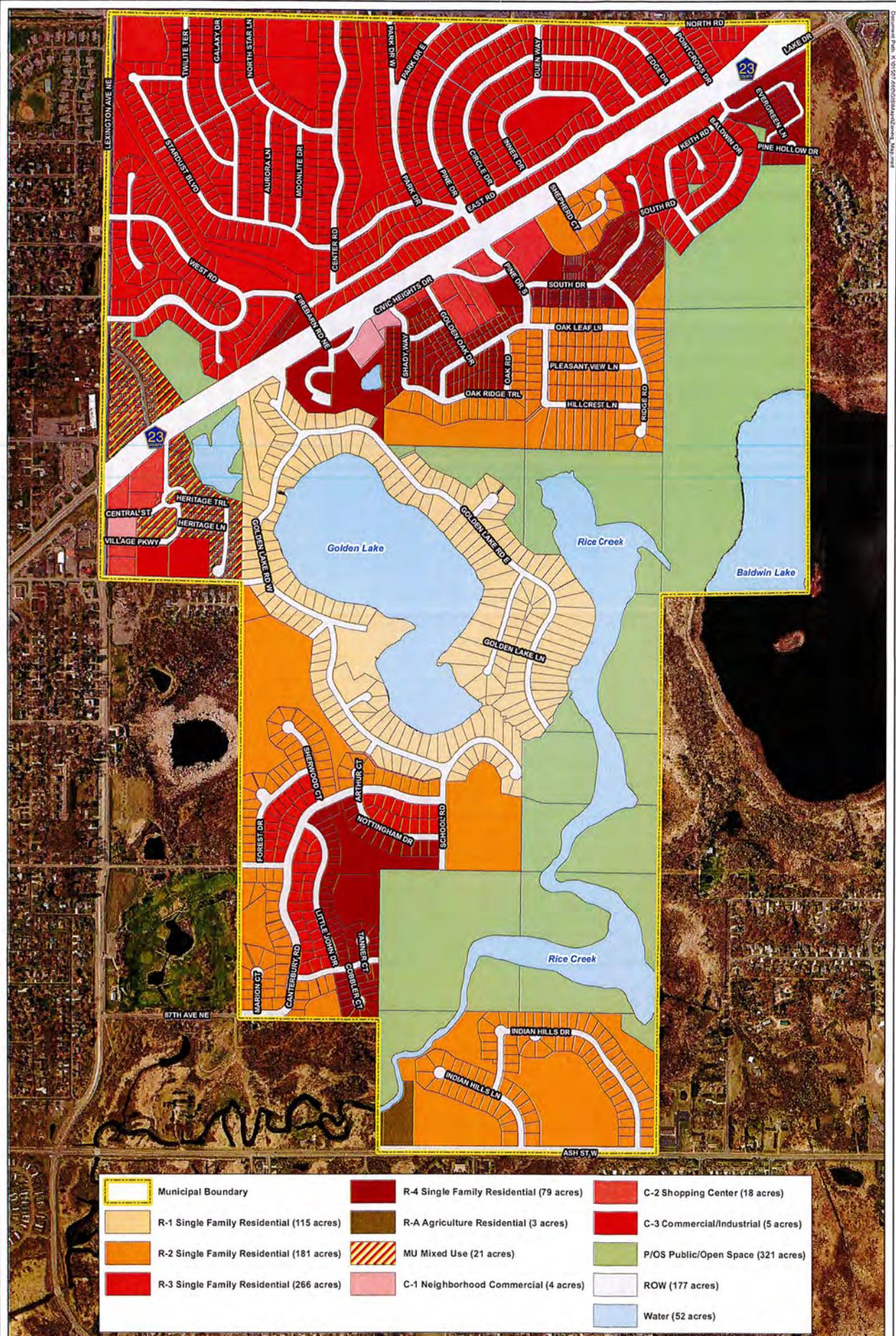
The implementation of the 2020-2040 Comprehensive Plan will utilize official controls such as the zoning code and subdivision regulations to assist in making decisions. The Capital Improvement Plan identifies projects to be implemented and the source of funding. Through these local controls the city will remain proactive in replacing public facilities through maintenance programs to avoid unforeseen costly repairs and projects.

Official Controls

Zoning Code

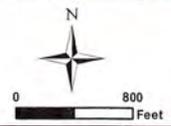
The City of Circle Pines Zoning Ordinance, Chapter 13 in the City Code, contains the following district provisions. The location of these districts is indicated on the Zoning map. The zoning ordinance directly reflects the type, location and intensity of uses described in the land use plan. The City will also make changes to the code that would pertain specifically to the unique circumstances of Circle Pines. The City will review and make changes to the zoning code as needed.

District	Principle Permitted Uses
R1, R2, R3,	Single Family Dwellings
R4	Multi-family Dwellings
C1	Neighborhood Commercial
C2	Shopping Center Commercial
C3	Commercial Industrial
MU	Mixed Use



Zoning Map Circle Pines, MN

Revision Date: November 2015



Water Resource Management

The City of Circle Pines recently adopted the Water Supply Plan which forecasts future use of water and outlines intent to reduce demand for water, improve the efficiency of use and reduce losses and waste of water. Since 2008, every other year, the city has taken on a full street reconstruction project which includes replacement of all city utilities including water and sewer mains.

Protect Natural Resources

The City of Circle Pines will continue to work with Anoka County, Rice Creek Watershed and the DNR to protect the natural resources within the City of Circle Pines. The City Council has included this work within the city's vision statement as follows.

Inviting outdoor places created as stewards of our natural resources

Our parks, trails and outdoor spaces are highly valued assets of our community. We intend to leverage this strength by protecting our natural areas in ways that are both inviting and environmentally sound. We take our responsibility as stewards of these resources very seriously

Housing Implementation Program

The City of Circle Pines goal will provide housing opportunities, which meets the needs of all generations and income levels, particularly varying type of independent and accessible senior housing.

The City supports the development of well-designed and appropriately located multi-family housing projects when these developments improve access to affordable housing and transit, creative positive community impacts, and preserve natural resources.

As housing preferences change, the city supports taking actions that improve the quality of the existing housing stock and supports the development of housing meets the needs of the population today.

Chapter 6, Housing, pages 12-13 outline the tools that will be used to achieve the housing goals.

The City of Circle Pines has also established a housing maintenance standard program (Chapter 16 in the City Code details the program). This program was designed to protect the public health, safety, and the general welfare of the citizens of Circle Pines. Further, the purposes of this ordinance is to protect the character and stability of residential areas within the City and to correct and prevent housing conditions that adversely affect the life, safety, general welfare, and health of citizens. The City will review and make changes to the Housing Maintenance Standards as needed.

Capital Improvements Program

The Capital Improvements Program is a flexible plan based on long-range physical planning financial projections which schedules the major public improvements and equipment purchases that may occur within the City over the next five years. The Capital Improvement Program serves as a tool for implementing certain aspects of the City's comprehensive plan, therefore, the program describes the overall objectives of the City development and redevelopment, the

relationship between projects with the respect to timing and need, and the City’s fiscal capabilities.

Parks & Trails

Project	2020	2021	2022	2023	2024	Funding Source
Trail Improvements	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	General Fund

Projects projected beyond 2024 can be found in Chapter 5 of this Plan.

Storm Water

Project	2020	2021	2022	2023	2024	Funding Source
Excavate Ponds					\$120,000	Storm Water Utility
Center, Moonlite & Aurora Replacement	\$500,000					Storm Water Utility
Stardust, Twinkle & Twilite Replacement			\$500,000			Storm Water Utility

Transportation/Streets

Project	2020	2021	2022	2023	2024	Funding Source
Street Recon Center, Moonlite, Aurora	\$2,500,000					Street Improv/Assessments
Street Recon Stardust, Twinkle & Twilite			\$2,500,000			Street Improv/Assessments

Sewer

Project	2020	2021	2022	2023	2024	Funding Source
Correct I/I				\$10,000		Utility Revenue

Sewer Jetter	\$300,000					Utility Revenue
Center, Moonlite & Aurora Replacement	\$1,000,000					Sewer Fund
Stardust, Twinkle & Twilite Replacement			\$1,000,000			Sewer Fund

Water

Project	2020	2021	2022	2023	2024	Funding Source
Center, Moonlite & Aurora Replacement	\$1,000,000					Water Fund
Stardust, Twinkle & Twilite Replacement			\$1,000,000			Water Fund