INVENTORY

2040 Comprehensive Plan

INTRODUCTION

The starting point for the Shorewood Comprehensive Plan Update is to document existing conditions and trends within the City that influence the City's future growth. The purpose of the Shorewood Inventory is to identify the type, amount, and pattern of growth that has taken place within the City. To this end, an inventory of existing conditions has been conducted. This Inventory encompasses seven general categories of information as highlighted below:

Socio-Economic Profile – This profile provides demographic information on population, households, age characteristics, income, and employment.

Natural Resources Profile – This profile identifies the characteristics of Shorewood's natural environment that influence land use development including topography, soils, watersheds, lakes, streams, and wetlands.

Land Use Profile – This profile describes, locates, and quantifies the various land uses within the City of Shorewood.

Housing Profile – This profile describes Shorewood's housing stock by age, tenure, value, and type.

Transportation Profile – This profile describes the transportation infrastructure available in Shorewood. The transportation profile includes functional classification of roadways, traffic volumes, aviation, and transit opportunities.

Utilities Profile – This profile provides insight on public utilities (waste water and municipal water

Community Facilities Profile – This profile provides insight on parks, schools, other utilities and public safety.

The sources of Inventory data have been gathered from a wide range of agencies, printed documents, and interviews. All the maps and tables have been provided with a source. Additional information regarding the source of any of the Inventory data can be obtained by contacting the City.

Together, these categories that make up the Shorewood Inventory provide an informational base which will be used to identify issues and set up a hierarchy of planning policies. These policies will help the community address a broad base of land use and development issues. With the help of a solid information base, decision-makers can evaluate and guide proposals in the short term to benefit the residents Shorewood and the surrounding area, while fulfilling the City's long-term goals and objectives.

POPULATION AND HOUSEHOLD GROWTH TRENDS

The statistics in the following table illustrate the trends in population within Shorewood, surrounding cities, and Hennepin County. Between 2010 and 2020, the City is expected to grow at a rate of 1.3 percent, while Hennepin County is expected to grow at an 8.9 percent rate. From 2020 to 2040, Shorewood is expected to grow at a rate of 1.3 percent, while Hennepin County is expected to grow at a rate of 12.1 percent. The faster growth rate in Hennepin County is due to the amount of undeveloped and vacant land and the amount of redevelopment projects in the County.

The population of Shorewood is projected to stay relatively stable due to the following:

1. With the recent redevelopment of the Minnetonka Country Club property, the City has no large tracts of available vacant land for development and few clustered properties that may be suitable for redevelopment with higher residential densities.

2. An aging population with outmigration of young adults.

3. Impact of the lack of affordable starter homes and ability to "age in place."

4. The impact of shoreland regulations, which restrict development densities within 1,000 feet of a lake.

Population Growth 2000 – 2040

	2000 Census	2010 Census	2020 Met Council Estimate	2000-2020 % Change	2010-2020 % Change	2030 Met Council Estimate	2040 Met Council Estimate	2020-2040 % Change
Shorewood	7,400	7,307	7,600	2.7%	3.9%	7,800	8,000	5.0%
Mound	9,435	9,052	9,000	-4.6%	-0.6%	9,300	9,400	4.4%
Tonka Bay	1,547	1,475	1,520	-1.7%	3.1%	1,550	1,560	2.6%
Minnetonka Beach	614	539	520	-15.3%	-3.5%	490	510	-1.9%
Hennepin County	1,116,200	1,152,425	1,255,220	12.5%	8.9%	1,329,580	1,406,640	12.1%

Source: Metropolitan Council, U.S. Census Bureau

The table below represents the Metropolitan Council's population forecast for Shorewood through 2040. Population is shown to increase by approximately six percent from 2010 to 2040.

Population Projections, 2010 – 2040 City of Shorewood				
	2010 Census	**2020 Forecast**	**2030 Forecast**	**2040 Forecast**
Population	7,307	7,600	7,800	8,000
Households	2,658	2,800	2,910	3,000
Employment	1,113	1,600	1,600	1,600
Source: Metropolitan Council				

The following table indicates that the number of households in Shorewood has increased while the average number of persons per household has slightly decreased (from 2.75 in 2010 to 2.53 persons per household expected in 2040). This is likely reflective of an increase in persons aged 65 and over. It also reflects the natural trend of people having fewer children and the dynamics of the modern family. If this trend is correct, the City will need to encourage additional new housing to accomplish the Metropolitan Council's forecasted population and household growth. However, as the baby boomer generation continues to age and look for alternative housing options, single family homes in Shorewood could be available to younger families, providing more housing options and increasing the average household size. Throughout the next decade, the City of Shorewood should monitor the movement of baby boomers, to help predict future housing needs.

Population and Household Projections, 2010 – 2040 City of Shorewood			
Year	**Population**	**Households**	**Persons Per Household**
2010	7,307	2,658	2.75
2015	7,458*	2,724*	2.74*
2020	7,600	2,800	2.71
2030	7,800	2,910	2.68
2040	8,000	3,000	2.67
*Metropolitan Council Estimates Source: Metropolitan Council, US Census Bureau			

The following table illustrates 2000 and 2010 household type for the City of Shorewood. As the table indicates, the number of family households has increased from 2000 to 2010. In 2000, 83 percent of households were family households. In 2010, the number of family households decreased to 80 percent. The number of non-family households increased from 2000 to 2010, from 423 to 508. The Census does not provide data for non-family households with children in 2000 or 2010.

Household Type City of Shorewood				
Household Type	**Total Number of Households**		**Households With Children**	
	2000	**2010**	**2000**	**2010**
Family-Married Couple	1,914	2,000	1,035	1,000
Family- Male Householder	69	33	20	24
Family- Female Householder	123	58	79	28
Total Family	2,106	2,091	1,134	1,052
Non-Family Households	423	508	-	-
Total Households	2,529	2,599	1,134	1,052

*The U.S. Census Bureau defines a family as two or more people (not necessarily including a householder) residing together and related by birth, marriage, or adoption.
Source: U.S. Census Bureau, 2000 and 2010

AGE CHARACTERISTICS

The following table illustrates Shorewood's population by age group. School-aged population (under 18) decreased between 2000 and 2010 by 4.5 percent. In both 2000 and 2010, the labor force represented the largest age group, at just over 60 percent in each year. The retired age group represented 7.9 percent of the total population in 2000, and 12.5 percent in 2010, an increase of 4.6 percent. It is expected that the retired age group will become the fastest growing segment of the population in the forthcoming decade. Changes in the City's demographics and surrounding areas will have significant planning implications for the future.

Age Characteristics, 2000 – 2010 City of Shorewood				
	2000		2010	
Age Group	**Number**	**%**	**Number**	**%**
Under 5	526	7.1%	354	4.8%
5 to 9	758	10.2%	525	7.2%
10 to 14	712	9.6%	632	8.6%
15 to 19	475	6.4%	643	8.8%
Total: School Aged Children	**2,339**	**31.6%**	**1,977**	**27.1%**
20 to 24	200	2.7%	241	3.3%
25 to 29	168	2.3%	186	2.5%
30 to 34	340	4.6%	209	2.9%
35 to 39	719	9.7%	300	4.1%
40 to 44	870	11.8%	529	7.2%
45 to 49	764	10.3%	744	10.2%
50 to 54	660	8.9%	881	12.1%
55 to 59	339	4.6%	628	8.6%
60 to 64	283	3.8%	523	7.2%
Total: Labor Force	**4,475**	**60.5%**	**4,418**	**60.5%**
65 to 69	194	2.6%	285	3.9%
70 to 74	199	2.7%	237	3.2%
75 to 79	112	1.5%	168	2.3%
80 to 84	58	.80%	147	2.0%
85 to 89	17	.20%	54	.70%
90 +	6	.10%	21	.30%
Total: Retirement Age	**586**	**7.9%**	**912**	**12.5%**
Total	**7,400**	**100.0%**	**7,307**	**100%**
Source: US Census Bureau 2000, 2010				

As shown in the table below, Shorewood has a lower median age than Spring Park, Tonka Bay, and Minnetonka Beach, and a higher median age than Mound. All adjacent communities also have a much higher median age when compared to Hennepin County. The cost of homes in the referenced communities plays a key role in the age of the populations which reside within them.

Median Age of Population Compared to Surrounding Communities (Years), 2010	
Shorewood	45.3
Spring Park	49.2
Mound	42.6
Tonka Bay	47.8
Minnetonka Beach	46.7
Hennepin County	35.9
Source: U.S. Census Bureau, 2010	

EDUCATION

The following table illustrates education levels for residents ages 25 and over in 2010. An overall comparison of Shorewood to Hennepin County illustrates that Shorewood residents have attained a higher level of education than Hennepin County residents as a whole (according to the U.S. Census 2015 estimates). Shorewood has a high percentage of high school graduates or higher, at over 98 percent, compared to Hennepin County's 92.6 percent. Shorewood also has a higher percentage of residents with a Bachelor's degree or higher.

2015 Educational Attainment for Ages 25 and Over
Shorewood and Hennepin County

	Shorewood		Hennepin County	
	2015	**Percent**	**2015**	**Percent**
<9th Grade	1	0%	28,166	3.5%
9th to 12th Grade (no diploma)	71	1.4%	32,337	3.9%
High School Graduate	504	10.1%	146,311	17.8%
Some College (no degree)	926	18.5%	160,152	19.5%
Associate Degree	359	7.2%	68,370	8.3%
Bachelor's Degree	2,087	41.7%	249,057	30.3%
Graduate Degree	1,060	21.2%	136,969	16.7%
Total	5,008	100%	821,362	100%
% of High School Graduate (or higher)	98.6%		92.6%	
% of Bachelor's Degree (or higher)	62.8%		47.0%	
Source: U.S. Census Bureau American Community Survey				

EMPLOYMENT

The following table represents the 2010 employment demographics for Hennepin County and the City of Shorewood. The table shows that in 2010, Shorewood had a similar breakdown of jobs as compared to Hennepin County. The biggest occupational sectors in both Hennepin County and Shorewood in 2010 were professional and business services and education/health services. The smallest sectors in both Hennepin County and Shorewood were natural resources and mining occupations.

Occupation by Industry Breakdown, 2010
Shorewood and Hennepin County

	Shorewood		Hennepin County	
	Number	**Percent**	**Number**	**Percent**
Natural Resources and Mining	-	-	823	0.1%
Construction	51	6.2%	18,201	2.4%
Manufacturing	16	1.9%	70,933	9.2%
Trade, Transportation and Utilities, Wholesale Trade	39	4.7%	69,774	9.0%
Information and Retail	70	8.4%	90.752	11.8%
Financial Activities	80	9.7%	86,861	11.3%
Professional and Business Services	155	18.7%	170,201	22.0%
Education and Health Services	199	24.1%	164,310	21.3%
Leisure, Arts, and Hospitality	105	12.7%	59,905	7.8%
Other Services	90	10.9%	23,591	3.1%
Government	22	2.7%	17,235	2.2%
Total	827	100.0%	772,586	100.0%
Source: U.S. Census Bureau 2010, On the Map – QCEW data				

As illustrated in the table below, the Metropolitan Council is predicting that Shorewood will have expanding employment opportunities within the community, increasing almost 70 percent from 2010 to 2040. These estimates appear unrealistic recognizing that Shorewood has limited commercial and industrial land uses within the City. Further, the City of Shorewood is considered fully developed with very few vacant parcels which have the potential to generate new jobs.

Employment Projections
City of Shorewood

	2010 Estimate	**2020 Forecast**	**2030 Forecast**	**2040 Forecast**
Shorewood	827	1,600	1,600	1,600
Source: Metropolitan Council				

TRAVEL TIME TO WORK

As shown in the table below, approximately 36 percent of Shorewood residents have a commute time of 30 minutes or longer. The average (median) travel time to work for Shorewood residents is 26 minutes.

Travel Time to Work, 2015 City of Shorewood		
	Number of Residents	**Percent**
Less than 10 minutes	331	9.7%
10 to 14 minutes	423	12.4%
15 to 19 minutes	468	13.7%
20 to 24 minutes	539	15.8%
25 to 29 minutes	423	12.4%
30 to 34 minutes	509	14.9%
35 to 44 minutes	253	7.4%
45 to 59 minutes	352	10.3%
60 or more	116	3.4%
Total	3,414	100%
Worked at home	321	
Average travel time to work	26.1 minutes	
Source: U.S. Census Bureau, 2015		

HOUSEHOLD INCOME

The U.S Census data regarding median family income for Shorewood and Hennepin County is illustrated in the following tables. The household income table indicates household income ranges for Shorewood. The per capita income and median family income for the City is significantly greater than that of Hennepin County.

Per Capita, Family, and Household Incomes Shorewood and Hennepin County				
	Per Capita Income	**Median Family Income**	**Median Household Income**	**Percent in Poverty**
2000				
Shorewood	$44,425	$104,100	$96,589	1.7%
Hennepin County	$28,789	$65,985	$51,711	8.3%
2010				
Shorewood	$59,861	$134,698	$118,495	2.0%
Hennepin County	$35,902	$81,043	$61,328	12.1%
Source: US Census, ACS 2000, 2010, and 2015 Five-Year Estimates				

Household Income City of Shorewood				
	2000		**2010**	
	Number of Households	**Percent of Households**	**Number of Households**	**Percent of Households**
Less than $10,000	33	1.3%	28	1.1%
$10,000 to $14,999	24	.9%	24	.9%
$15,000 to $24,999	126	5.0%	86	3.3%
$25,000 to $34,999	151	6.0%	96	3.7%
$35,000 to $49,999	168	6.6%	157	6.0%
$50,000 to $74,999	427	16.9%	302	11.6%
$75,000 to $99,999	377	14.9%	424	16.3%
$100,000 to $149,999	555	22.0%	492	18.9%
$150,000 to $199,999	204	8.1%	393	12.4%
$200,000 or more	463	18.3%	597	23.0%
Total	2,528	100.0%	2,599	100.0%
Source: US Census Bureau, 2000, 2010				

LAKES

Lake Minnetonka is the largest natural resource within the City of Shorewood. As a large recreational lake, it is of prime importance to the citizens of the community and their lifestyle. Shorewood has six named lakes (as classified by the Department of Natural Resources, including Christmas Lake, Silver Lake, Lake Como, Lake Virginia, Lake William, and Galpin Lake, which provide recreational opportunities for residents.

All areas of Lake Minnetonka have been classified as impaired by the Minnesota Pollution Control Agency. This classification is a result of development which surrounds the lake and the amount of direct stormwater runoff channeled into the waters.

There are many government agencies that have jurisdiction, in one form or another, over the City's lakes, including: individual municipalities, the Army Corps of Engineers, the Riley Purgatory Bluff Creek Watershed District, the Lake Minnetonka Conservation District, The Minnehaha Creek Watershed District, and the Minnesota Department of Natural Resources. Historically, the City manages its shoreland development while stormwater drainage is reviewed and approved by the Watershed Districts.

TOPOGRAPHY

There are several areas within Shorewood which exhibit slopes in excess of 18 percent. In these areas, there is a cause for concern because disruption of the existing ground cover or unauthorized grading may result in destabilization of the slope and result in erosion and sedimentation into lakes and/or adjacent wetlands. Those areas classified as bluffs within shoreland districts have additional protection.

SOILS

Many areas of Shorewood have been built upon soils that have questionable to moderate limitation in terms of building site suitability. Since Shorewood is fully serviced by sanitary sewer, the primary consideration regarding the soils is their suitability for new and existing building sites. Factors such as slope, depth to water table, bearing capacity, volume change (shrink-swell potential and potential for frost heave have definite influence on the development capability of a given site. In areas of questionable soils, soil testing and special construction techniques will be necessary to overcome the construction limitations.

TREE PRESERVATION

The City of Shorewood contains significant numbers of oak, elm and other deciduous trees which contribute to the aesthetic quality of the community. In addition, these trees play an important role in the function of the City's natural systems. The City Code includes a tree preservation ordinance which is intended to preserve or replace trees in new developments or redevelopments.

WETLANDS

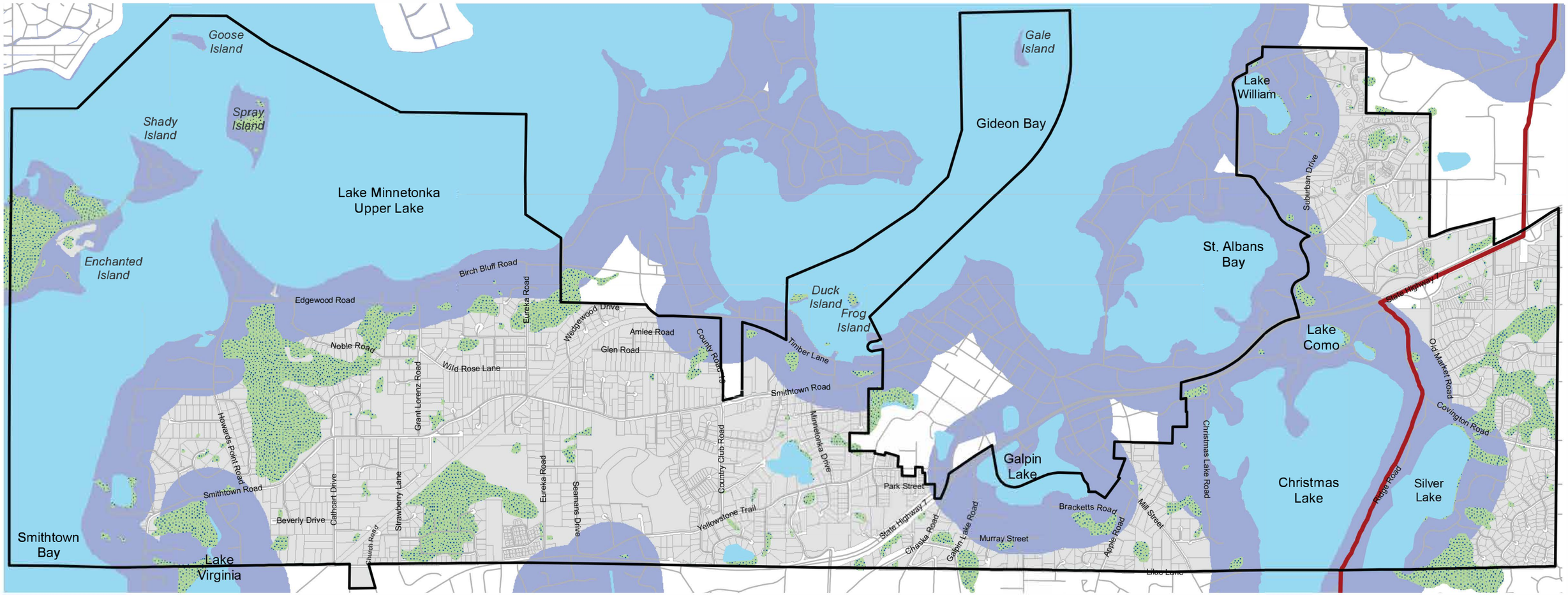
The Water Resources Map on the following page illustrates wetlands and natural buffer areas throughout the City. The wetlands serve an important buffer to the lakes which helps with water quality and preserve the natural environment in the City.

AGGREGATE RESOURCES

According to the Metropolitan Council's aggregate resources inventory contained in Minnesota Geographical Survey Information Circular 46, there are no known viable aggregate resource deposits available for extraction within the City of Shorewood.

Water Resources

City of Shorewood
2040 Comprehensive Plan



Legend

- Shorewood Boundary
- Watershed Boundaries
- Wetlands (National Wetland Inventory)
- Shoreland Protection Zone (1000' from Lake)
- Lakes

Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council

0 0.25 0.5 1
Miles

N

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

LAND USE

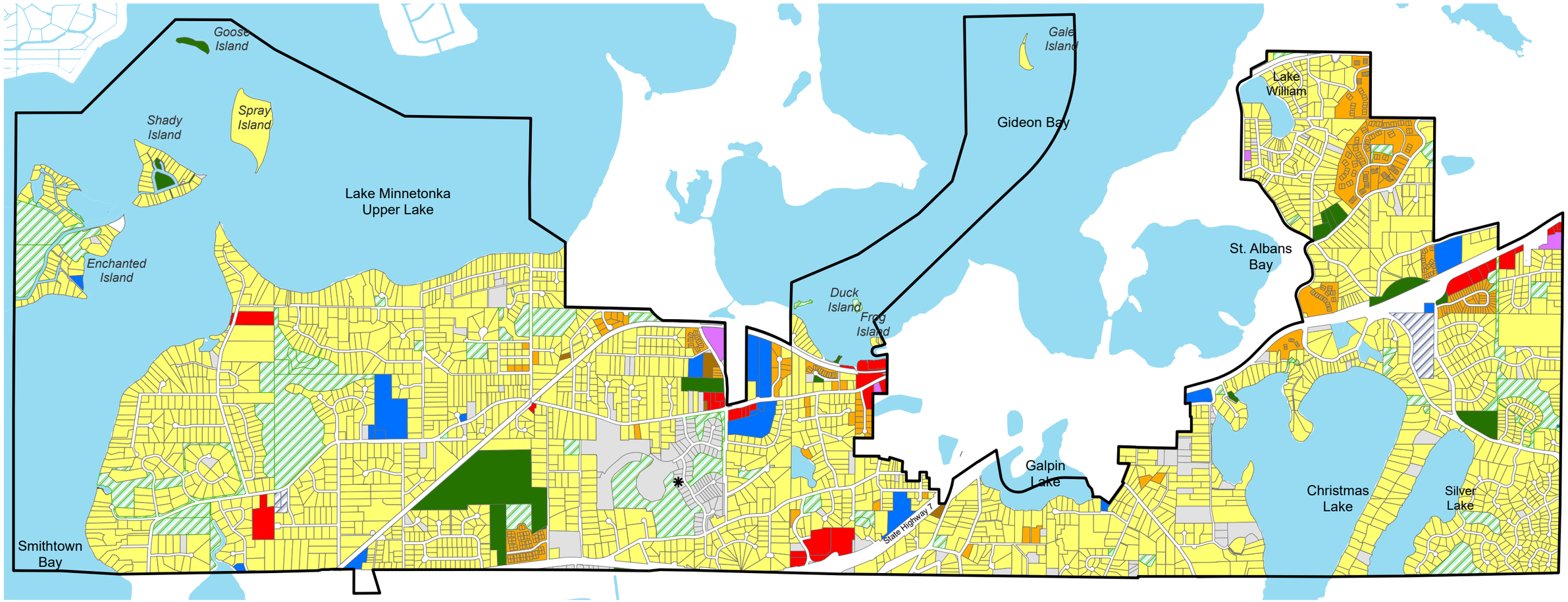
Shorewood is a fully developed City with 100 percent of the land within its municipal boundaries lying within the Metropolitan Urban Service Area (MUSA). The 3,000 acres of City land has an unusual boundary due to numerous abutting cities and lakes. The City boundary touches the cities of Chanhassen, Orono, Mound, Minnetrista, Victoria, Minnetonka, Greenwood, Deephaven, Tonka Bay and Excelsior. Most land use is classified as residential or commercial. There is a very limited amount of vacant land available for development in Shorewood. Most of the residential land is comprised of single-family homes with few other alternatives. A summary of 2017 land uses is provided in the table below.

Existing Land Use - 2017			
Land Use	**Acres**	**Percent of Total**	**Percent of Total without Open Water**
Minimum Density Residential	-	-	
Low Density Residential	2,128	41%	64%
Low to Medium Density Residential	-	-	
Medium Density Residential	137	3%	4%
High Density Residential	5	<1%	<1%
Commercial	55	1%	2%
Industrial	9	<1%	<1%
Public/Semi-Public	67	1%	2%
Parks	95	2%	3%
Cemetery	18	<1%	<1%
Open Space	238	7%	11%
Right of Way	384	7%	11%
Vacant	202	2%	4%
Open Water	1,874	36%	NA
Total	5,212	100.0%	100%
Source: City of Shorewood, Metropolitan Council, analyzed via GIS			

Parks: Public parks only.
Open Space: Land not suitable for development, including ponds, conservation easements, etc.
Vacant land: Includes lands that may be developed in the future or lots within developments that have no structure as of June, 2018.

Existing Land Use

City of Shorewood
2040 Comprehensive Plan



✱ Platting and construction for the Minnetonka Country Club Development has begun, which inlcudes 142 units of low density residential

Existing Land Use

- Single-Family Residential
- Two-Family Residential
- Multiple-Family Residential
- Commercial
- Industrial
- Public/Institutional
- Parks
- Open Space
- Cemetary
- ROW
- Vacant
- Open Water

Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council & Hennepin County

0 0.25 0.5 1
Miles

N

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

ZONING DISTRICTS

The following summarizes the various districts of the Zoning Ordinance and how they are applied in the City. The zoning map follows these descriptions.

R-1A, Single-Family Residential District. The R-1A District is intended to provide a district which will allow suitable areas of the City to be retained and utilized for low density residential, open space and/or agricultural uses.

R-1B, Single-Family Residential District. The R-1B District is intended to provide a district which will retain a low density residential character, yet enable greater flexibility in design and provide economy in public expenditures for public utilities and service.

R-1C, Single-Family Residential District. The R-1C District is intended to allow a greater concentration of single-family dwellings in areas served by municipal utilities and where appropriate reservations for open space have been established by means other than individual lot areas.

R-1D, Single-Family Residential District. The R-1D District is intended to allow a greater concentration of single-family dwellings in areas served by municipal utilities and where appropriate reservations for open space have been established by means other than individual lot areas. The District also recognizes the existence of older areas of the community in which smaller lots exist.

R-2A, Single and Two-Family Residential District. The R-2A District is intended to provide suitable areas of the City which will allow construction of single-family and two-family homes, yet maintain the character and amenities of low density single-family residential areas.

R-2B, Single and Two-Family Residential District. The R-2B District is intended to provide suitable areas of the community which will allow construction of single-family and two-family homes of a more compact nature, while maintaining the character and amenities of low density single-family residential areas.

R-2C, Single and Two-Family Residential District. The R-2C District is intended to provide suitable areas of the community which will allow construction of single-family and two-family homes of a very compact nature while retaining a low to medium density of approximately five units per acre.

R-3A, Multiple-Family Residential District. The R-3A District is intended to provide a greater variety in the type of housing units available within the community, while retaining the

environment and character of less intensive residential areas through carefully established bulk and lot area requirements.

R-3B, Multiple-Family Residential District. The R-3B District is intended to provide a greater variety in the type of housing units available within the community by allowing construction of two-family, townhouse, quadraminium and apartment dwellings at a density ranging up to ten units per acre.

R-C, Residential/Commercial District. The R-C District is intended for a gradual transition between commercial and residential uses. More specifically, the R-C District is established to buffer residential uses from adjacent high intensity use areas by permitting residentially compatible service- oriented commercial uses and controlling those uses which can be compatible with residential areas given adequate control.

C-1, General Commercial District. The purpose of the C-1, General Commercial District is to provide for low to moderately intense retail or service outlets that deal directly with the customer to whom the goods or services are furnished. The uses allowed in this district are to provide goods and services on a limited community market scale and located in areas that are well served by collector or arterial street facilities.

C-2, Commercial Service District. The C-2 District is intended to recognize areas containing preexisting businesses that provide services primarily for the community and surrounding area. It is further intended that the location of the C-2 District may take advantage of transportation routes with existing high traffic volumes; however, activities allowed in the District will not create additional traffic.

L-R, Lakeshore Recreational District. The L-R District is intended to recognize the desirability for areas to serve the lakeshore recreational needs of the City which of their very nature are by geographic necessity located in proximity and adjacent to residential areas of this community.

Lake Minnetonka is the largest single park and recreational facility available for use by Shorewood's citizens, providing of an opportunity for access to that facility is, in the opinion of the City, an adjunct of zoning by the City. Recognizing the primary residential nature of Shorewood, it behooves the City to subject the possible areas available for access to the lake to close scrutiny and limitation so as to insure that use of the land does not unduly infringe upon property rights and public health, safety and welfare of others residing on nearby residential sites.

PUD, Planned Unit Development District. This District is established to provide comprehensive procedures and standards designed for district planned unit development to allow the development of neighborhoods or portions thereof incorporating a variety of residential types and nonresidential uses. Recognizing that traditional density, bulk, setbacks, use and subdivision regulations which may be useful in protecting the character of substantially developed areas may not be appropriate to control development in less developed areas. Specifically, PUD is intended to encourage:

a. Innovations in residential development to the end that the growing demands for housing at all economic levels may be met by greater variety in tenure, type, design and siting of dwellings and by the conservation and more efficient use of land in the developments;

b. Higher standards of site and building design through the use of trained and experienced land planners, architects and landscape architects;

c. More convenience in location of commercial and service areas within a given project or area, allowing more efficient and desirable transitions between residential and nonresidential land uses;

d. The preservation and enhancement of desirable site characteristics such as natural topography and geologic features and the prevention of soil erosion;

e. A creative use of land and related physical development which allows a phased and orderly transition of land from rural to urban uses;

f. An efficient use of land resulting in smaller networks of utilities and streets thereby lowering housing costs and public investments;

g. A development pattern in harmony with the objectives of the City Comprehensive Plan;

h. A more desirable environment than would be possible through the strict application of zoning and subdivision regulations of the City;

i. To give the landowner and developer reasonable assurance of ultimate approval before expending complete design monies while providing city officials with assurances that the project will retain the character envisioned at the time of concurrence;

j. To allow variation from the provisions of this chapter, including setbacks, height, lot area, width and depth, yards and the like internally within the project. Provisions of this chapter shall generally be maintained at the periphery of the project area.

S, Shoreland District. Shorelands within the City are designated as shoreland districts and the requirements set forth in this chapter shall govern development and other activities within these districts. The classification of the shoreland areas shall govern the use, alteration and development of these areas according to the classification as per M.S., Chapter 105, and Minnesota Regulations parts 6120.2500 - 6120.3900.

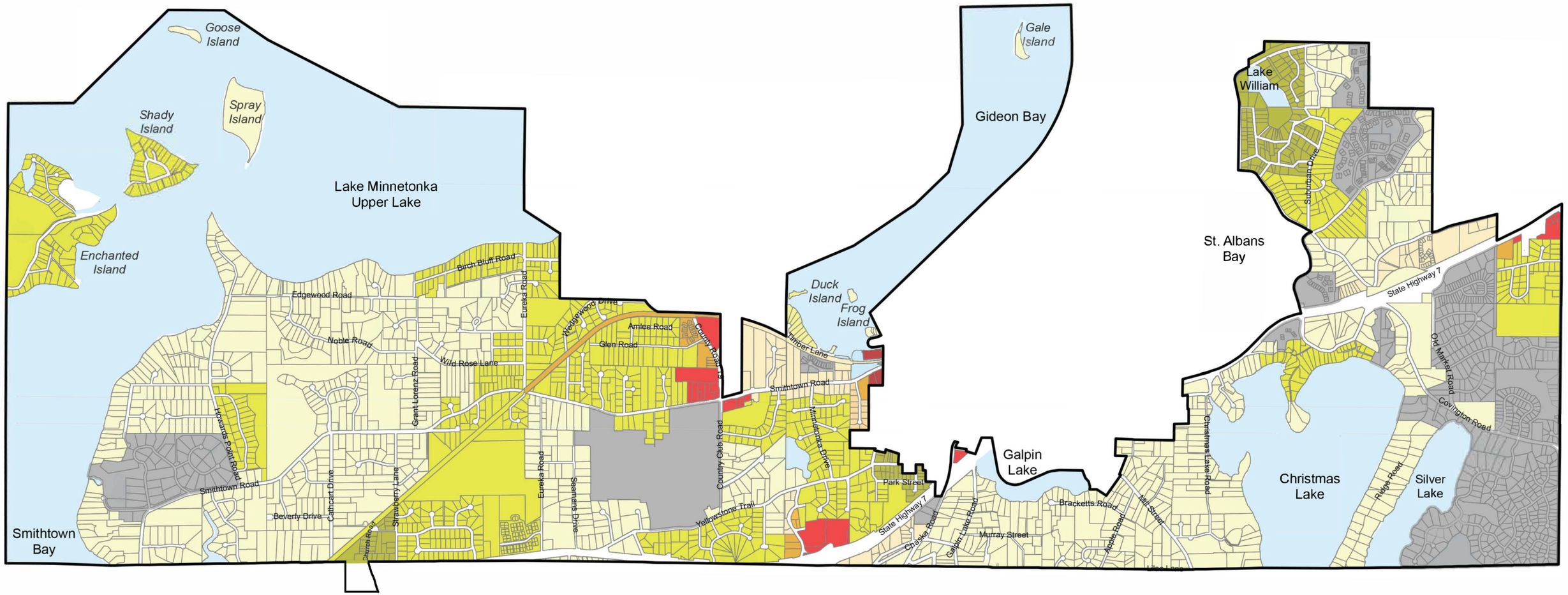
The S District is applied to and superimposed upon all zoning districts as contained herein as existing or amended by the text and map of this chapter. The regulations and requirements imposed by the S District shall be in addition to those established for districts which jointly apply. Under the joint application of districts, the more restrictive requirements shall apply.

HISTORIC PRESERVATION

The City of Shorewood does not contain any buildings or structures which are listed on the National Register of Historic Places or that have been identified by the Minnesota Historical Society as being eligible for the National Register. The City is, however, committed to preservation of its history. As opportunities arise and funding is available, the City will evaluate appropriate steps toward preservation.

Zoning

City of Shorewood
2040 Comprehensive Plan



Legend

- C-1
- C-2
- L-R
- PUD
- R-1A
- R-1B
- R-1C
- R-1D
- R-2A
- R-2B
- R-3A
- R-C
- Shorewood Boundary

Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council

0 0.25 0.5 1
Miles

N

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

HOUSING TYPES

As seen in the following table, the City of Shorewood is largely single-family residential, with 94 percent of the total housing units either detached or attached single family homes. Multi-family (medium and high-density units) account for less than 5 percent of the total housing in Shorewood.

Housing Units by Type City of Shorewood			
Type	**Number of Units**	**Percent of Total**	
1 unit, detached	2,373	81.9%	93.9%
1 unit, attached	349	12.0%	
2, 3 or 4 units	81	2.8%	2.8%
5 to 9 units	0	0.0%	3.3%
10 to 19 units	43	1.5%	
20 units or more*	53	1.8%	
Total	2,899	100.0%	
Source: U.S. Census Bureau 2015 ACS estimates			

*The above table represents 2015 estimates from the U.S. Census Bureau. It does not include units from Shorewood Landing, a senior housing development built in 2017 on 3.67 acres with 28 independent living units, 52 assisted living units and 25 memory care units. This will add 105 total units, increasing the total units in buildings with 20 or more units to 158.

As is true in most cities, the majority of the single-family homes in Shorewood are owner occupied and the majority of the multiple family dwellings are renter occupied. Of the existing housing units which exist within the City, 84 percent are owner-occupied, 10 percent are renter-occupied, and 6 percent are vacant. The average rent in 2015 was $978.

Housing Tenure, 2015 City of Shorewood		
	Number	**Percent**
Owner-Occupied	2,455	84.2%
Renter-Occupied	293	10.0%
Total Occupied Housing Units	2,748	94.2%
Vacant Housing Units	168	5.8%
Total Housing Units	2,916	100.0%
Average Household Size of Owner-Occupied Unit	2.79	
Average Household Size of Renter-Occupied Unit	2.25	
Source: U.S. Census Bureau, 2015		

HOUSING COST

The table below illustrates rent rates within the City in 2015.

Gross Rent, 2015 City of Shorewood		
Gross Rent Per Month	**Number of Units**	**Percent of Total**
Less than $500	24	9.8%
$500 to $999	110	44.9%
$1000 to $1,499	52	21.2%
$1,500 to $1,999	29	11.8%
$2,000 to $2,499	10	4.1%
$2,500 to $2,999	8	3.3%
More than $3,000	12	4.9%
Total	245	100.0%
Median Rent	$978	
Source: U.S. Census Bureau, 2015		

The following table illustrates the estimated market value for owner-occupied housing units within Shorewood. The vast majority of these homes are above $300,000 with the median value of homes being $401,400. The City of Shorewood has few options for existing single-family homes to be considered low income housing.

Estimated Market Value of Owner Occupied Housing Units, 2015 City of Shorewood		
Value	**Properties**	**Percent**
Less than $50,000*	18	.7%
$50,000 to $99,999*	7	.3%
$100,000 to $149,999	15	.6%
$150,000 to $199,999	73	3.0%
$200,000 to $299,999	558	22.7%
$300,000 to $499,999	943	38.4%
$500,000 to $999,999	678	27.6%
$1,000,000 or more	163	6.6%
Total	2,455	100.0%
Median Value	$401,400	

Source: U.S. Census Bureau, 2015 ACS

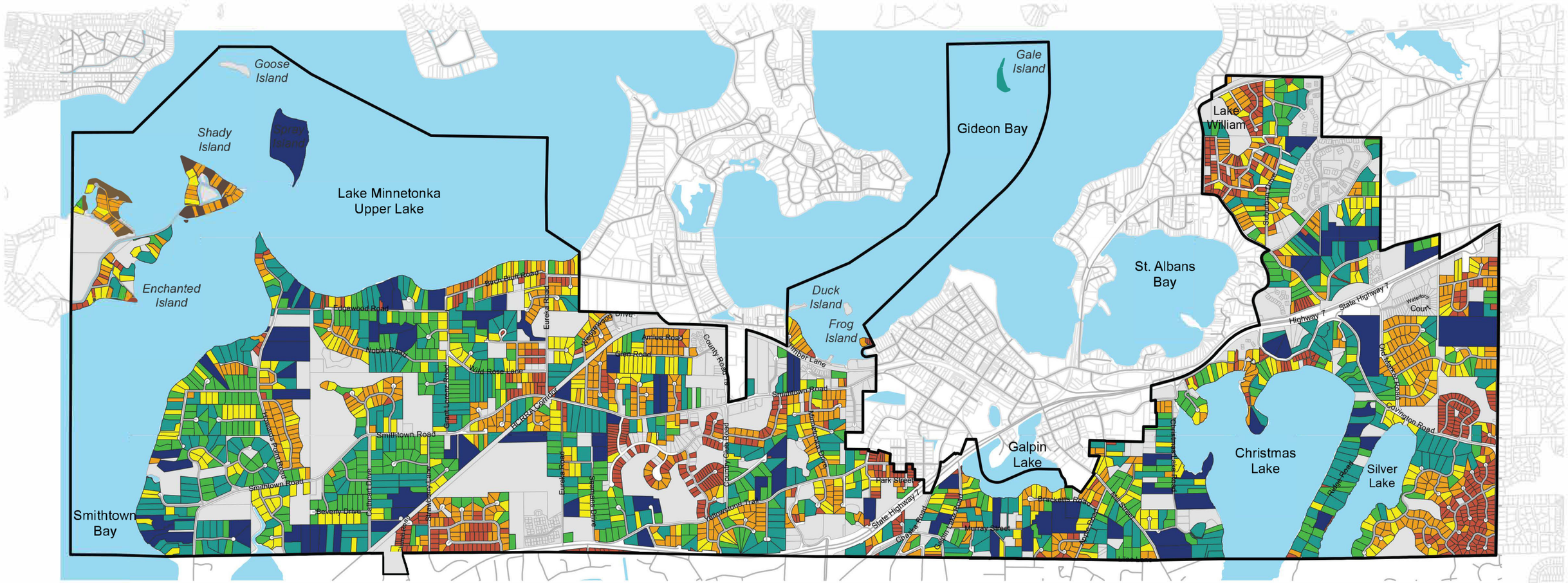
*These numbers are estimates from the Census, and the margin of error for these statistics is +/- 26 properties for those less than $50,000 and +/- 11 properties for those under $99,999. The number of properties in both these categories is likely closer to zero.

The City of Shorewood has a wide range of lot size options for residents. Municipal water supply is not available to all lots in Shorewood, which increases the need for larger lot sizes to accommodate private water supply. The strong demand for new lots has encouraged property owners with existing large lots to subdivide them into smaller lots. The City anticipates this trend will continue in the future. The average lot size (mean) is 38,000 square feet. Average single-family density is 1.31 units per acre (2,736 units on 2,095 acres.)

Area of Single Family Lots (Square Feet) City of Shorewood		
Area	**Properties**	**Percent**
< 20,000 sq. ft.	549	22.7%
20,000 – 30,000 sq. ft.	687	28.4%
30,000 – 40,000 sq. ft.	371	15.3%
40,000 – 50,000 sq. ft.	390	16.1%
50,000 – 100,000 sq. ft.	337	13.9%
> 100,000 sq. ft.	88	3.6%
Total	2422	100.0%
Source: Hennepin County, City of Shorewood, DNR, NAC, analyzed via GIS		

Single Family Lot Sizes

City of Shorewood
2040 Comprehensive Plan



Lot Size, Square Feet

- < 20,000
- 20,000 - 30,000
- 30,000 - 40,000
- 40,000 - 50,000
- 50,000 - 100,000
- > 100,000
- Non-Residential or Vacant
- City Boundary

Map created: December 2022
Data: NAC, MNDNR, Metropolitan Council

0 0.275 0.55 1.1
Miles

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

YEAR BUILT

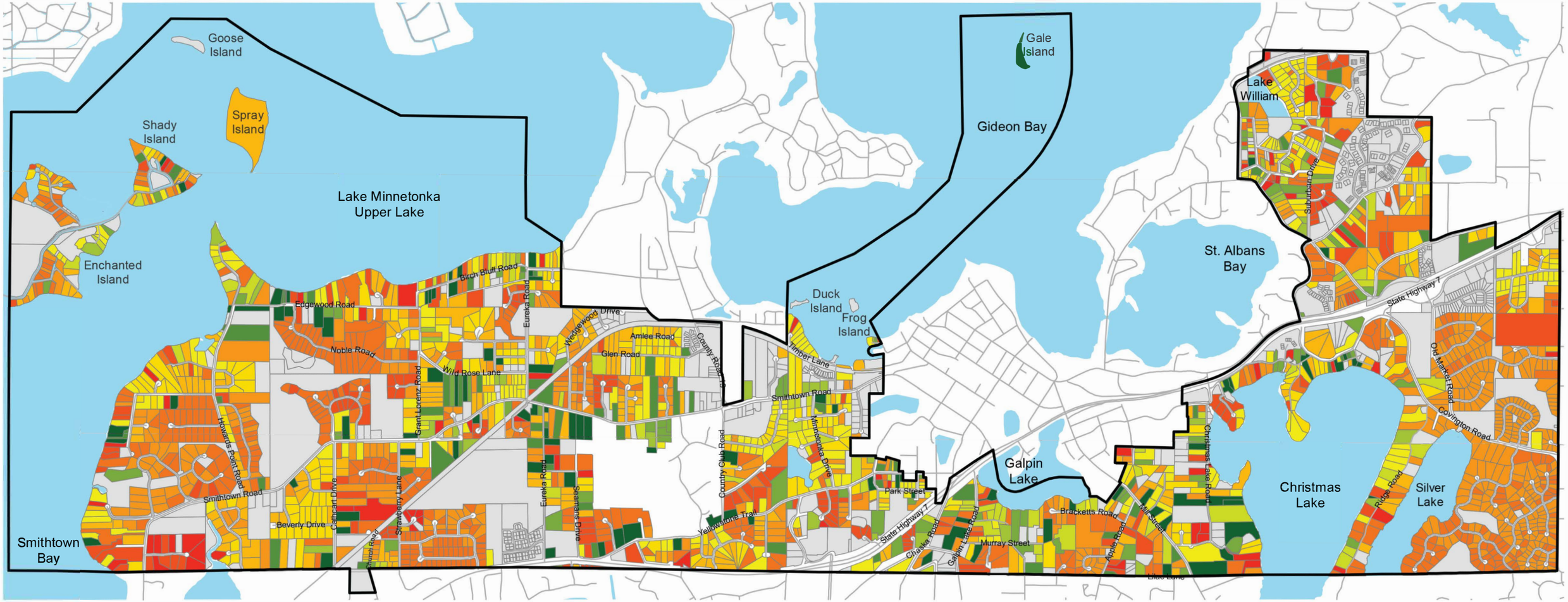
Shorewood is a community with a mix of single-family homes. As shown in the table below, approximately 52% of homes in Shorewood were built since 1980.

Age of Single Family Housing Stock City City of Shorewood		
Year Built	**Number of Units**	**Percent of Total**
Pre-1900	8	0.3%
1900s	89	3.7%
1910s	63	2.6%
1920s	84	3.5%
1930s	45	1.9%
1940s	84	3.5%
1950s	279	11.6%
1960s	237	9.8%
1970s	260	10.8%
1980s	540	22.4%
1990s	471	19.5%
2000s	186	7.7%
Post-2010	66	2.7%
Total	2,412	100.0%
Source: U.S. Census Bureau, 2010		

Single Family Housing Year Built

City of Shorewood

2040 Comprehensive Plan



Legend

Year Built

- Pre 1910
- 1910s
- 1920s
- 1930s
- 1940s
- 1950s
- 1960s
- 1970s
- 1980s
- 1990s
- 2000s
- Post 2010
- Shorewood Boundary
- Non-Residential/No Data Parcels
- Lakes

Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council & Hennepin County

0 0.25 0.5 1
Miles

N

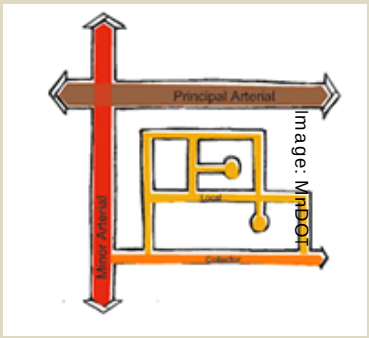
NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

EXISTING ROADWAY SYSTEM

The sections below provide information about the existing roadway system in Shorewood, including existing number of lanes, existing roadway jurisdiction, existing functional classification, existing traffic, existing safety, and access management.

Functional Classification

The **functional classification system** groups roadways into classes based on roadway function and purpose. It organizes the roadway and street network that distributes traffic from local neighborhood streets to collector roadways, then to minor arterials and ultimately the principal arterial system. Roads are placed into categories based on the degree to which they provide access to adjacent land and mobility for through traffic. Functional classification is based on both transportation and land use characteristics, including roadway speeds, access to adjacent land, connection to important land uses, and the length of trips taken on the roadway.



The Seven-County Metropolitan Area's functional classification system includes 4 classifications of roadways: principal arterials, minor arterials, collector streets, and local streets. The figure on the following page shows the existing functional classification of each road in the City of Shorewood.

The following sections describe each functional class in greater detail and indicate which roadways fall into each classification.

Principal Arterials

Principal arterials are roadways that provide the greatest level of mobility and access control. Within the metropolitan area, the great majority of principal arterials are under MnDOT jurisdiction. Principal arterials are typically Interstate highways or other state or US freeways or expressways. These roads are usually for trips greater than 8 miles and express transit trips. Spacing between principal arterials varies within developing areas of the metropolitan area. Typically, these facilities are spaced between two and six miles apart and connect regional business and commercial concentrations, transportation terminals, and large institutions within the metropolitan areas. Principal arterials also connect to other cities, regions, and states outside of the metropolitan area.

These roadways are designed to maintain average speeds of 40 mph during peak traffic periods. To maintain mobility and speeds on principal arterials, driveway and other road connections are limited. There is little to no direct land access from driveways. Connection points are typically grade-separated or controlled with a signal and are spaced approximately one to two miles apart and include intersections with other interstate freeways, other Principal Arterials, and A Minor Arterials.

Within the City of Shorewood, TH 7 is the one existing principal arterial and no others are proposed. TH 7 generally traverses the city from the eastern border with Minnetonka to Chanhassen. TH 7 is an important metropolitan highway that serves east-west vehicular movements throughout the region.

Minor Arterials

Minor arterials maintain a focus on mobility but provide more land access than principal arterials. Within Shorewood, all minor arterials are under the jurisdiction of Hennepin County. Minor arterials are intended to serve trips of four to eight miles in length. Within developing areas of the metro, these facilities are spaced between one and two miles apart. Minor arterials connect cities and towns within the region and link to regional business and commercial concentrations. Access points along minor arterials are generally at-grade and typically controlled with signals or stop signs.

During peak traffic, minor arterials in developing areas are intended to maintain 30 mph average speeds. As a result, transportation system connections are limited to interstate freeways, other principal arterials, other minor arterials, collectors, and some local streets. Land access is limited to concentrations of commercial and industrial land uses. The Metropolitan Council has established a system of "A" Minor and "B" Minor arterials. "A" Minor arterials are eligible for federal funding administered by the Metropolitan Council. The Metropolitan Council has further split "A" Minor arterials into four types, described below:

- Relievers: Arterials located parallel to congested principal arterials. The purpose of "A" Minor Relievers is to provide additional capacity in congested corridors.
- Augmenters: Arterials that supplement the principal arterials system within urban centers and urban communities.

- Expanders: Arterials that supplement principal arterials in less-densely developed areas of the metro area.
- Connectors: Arterials that provide connections between rural towns and connect rural areas with the principal arterial system.

Given the purpose of "A" Minor Augmenters and Connectors, there are no existing or planned augmenters, connectors or relievers within the city. "A" Minor arterials in Shorewood include the following roadways:

"A" Minor Expanders

- CSAH 82 (Mill Street)
- CSAH 19 (Oak Street and Manitou Road)

"B" Minor arterials have a similar focus on mobility above land access. These roadways connect major traffic generators in the region. "B" Minor arterials are not eligible for federal funding. "B" Minor arterials are also referred to as "Other" arterials in the 2040 Transportation Policy Plan. There are no "B" Minor or "Other" arterials within the City.

Major and Minor Collectors

Major and minor collector roadways provide linkages to larger developments and community amenities. They generally do not link communities to one another. Collector roadways generally favor access to the system over mobility but try to balance the two competing needs. Collector roadways are generally lower speed than the principal or minor arterial routes. Collector roadways are often owned and operated by cities, although counties operate some of these facilities. Collectors link minor arterials, other collectors, and local streets.

Major collectors typically serve higher density residential areas and concentrations of commercial and industrial land uses. These facilities tend to serve longer trips than minor collectors. The Major Collectors in Shorewood include the following roadways:

Major Collector Roadways

- Smithtown Road
- Galpin Lake Road
- Minnetonka Boulevard

There are no minor collectors identified within the City.

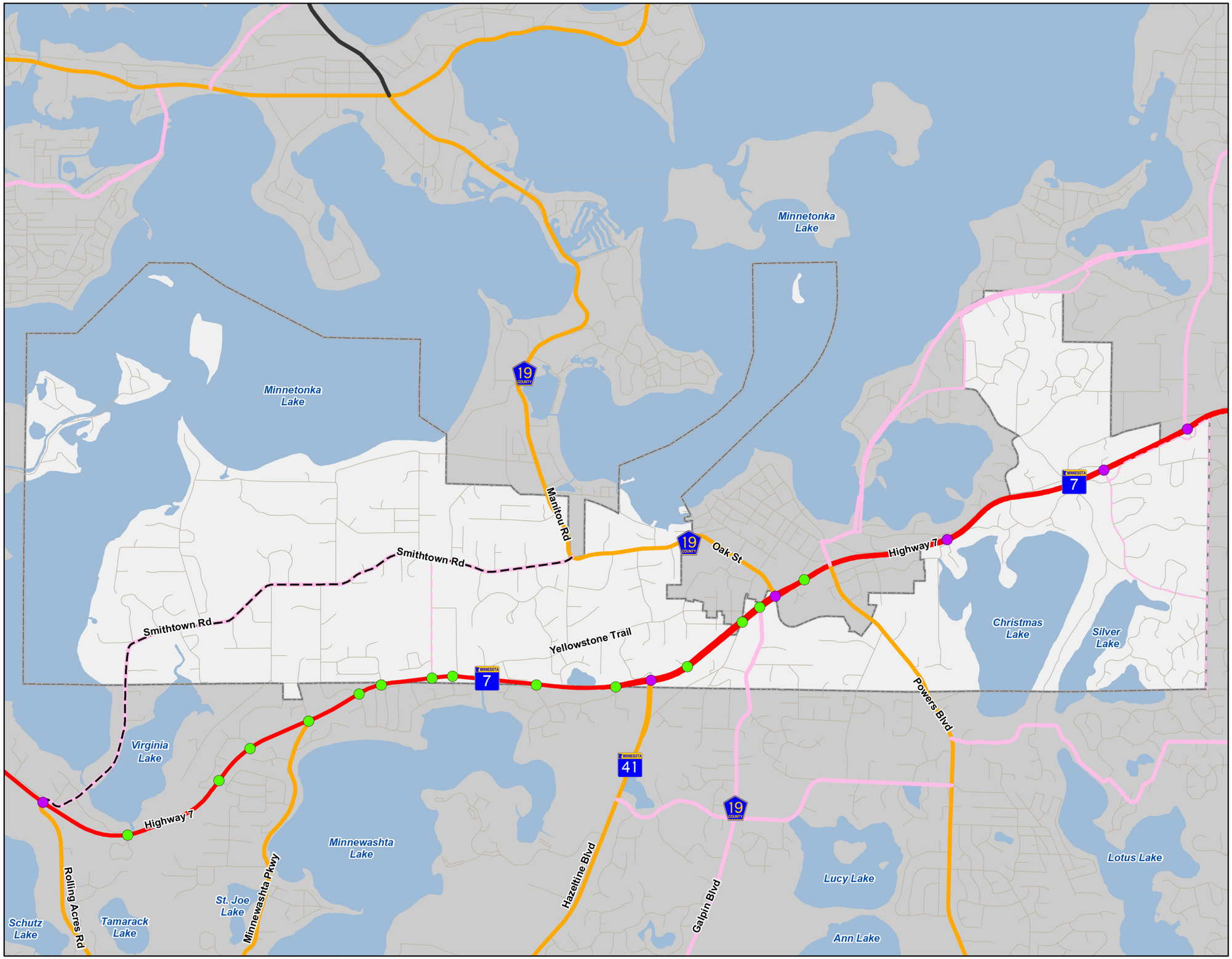
Local Roadways

The primary function of local roadways is land access. Local roadways connect individual land parcels with other local roadways and collectors. Trips on local roadways are typically under two miles. Speeds on local roadways are typically low. Longer trips are facilitated by local roadway connections to the collector and arterial systems. Local roadways are under the jurisdiction of the City of Shorewood. Local roadways are all roadways that are not arterials or collectors.

CITY OF SHOREWOOD

Shorewood Comprehensive Plan

Functional Classification Map
Shorewood, MN



- City Boundary
- Controlled Full Access Intersection
- Uncontrolled Full Access Intersection
- Principal Arterial
- A Minor Expander
- Other Arterial
- Major Collector
- Future Major Collector
- Future Other Arterial

N

0 2,500 Feet
1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Comp Plan\ExistingFunctionalClass.mxd Date Saved: 11/2/2018 7:53:27 AM

Jurisdictional Classification / Municipal State Aid Streets

Roadways are classified on the basis of which level of government owns and has jurisdiction over the given facility. The three levels of government that have involvement are the State of Minnesota (Mn/DOT, Hennepin County, and the City of Shorewood. Mn/DOT owns/maintains the Trunk Highway (TH system and Hennepin County the County State Aid Highway (CSAH and County Road (CR system. The City owns/maintains the local streets, including Municipal State Aid (MSA streets**.**

Cities in Minnesota with populations greater than 5,000 are eligible to receive Municipal State Aid (MSA funding from the state Highway User Tax Distribution Fund. The basic purpose of this program is to help local governments construct and maintain collector and arterial roadways which have consistent design standards, and which are well integrated into the overall network of collector and arterial roadways. The State Aid system typically consists of a maximum of 20% of the City's roadway mileage.

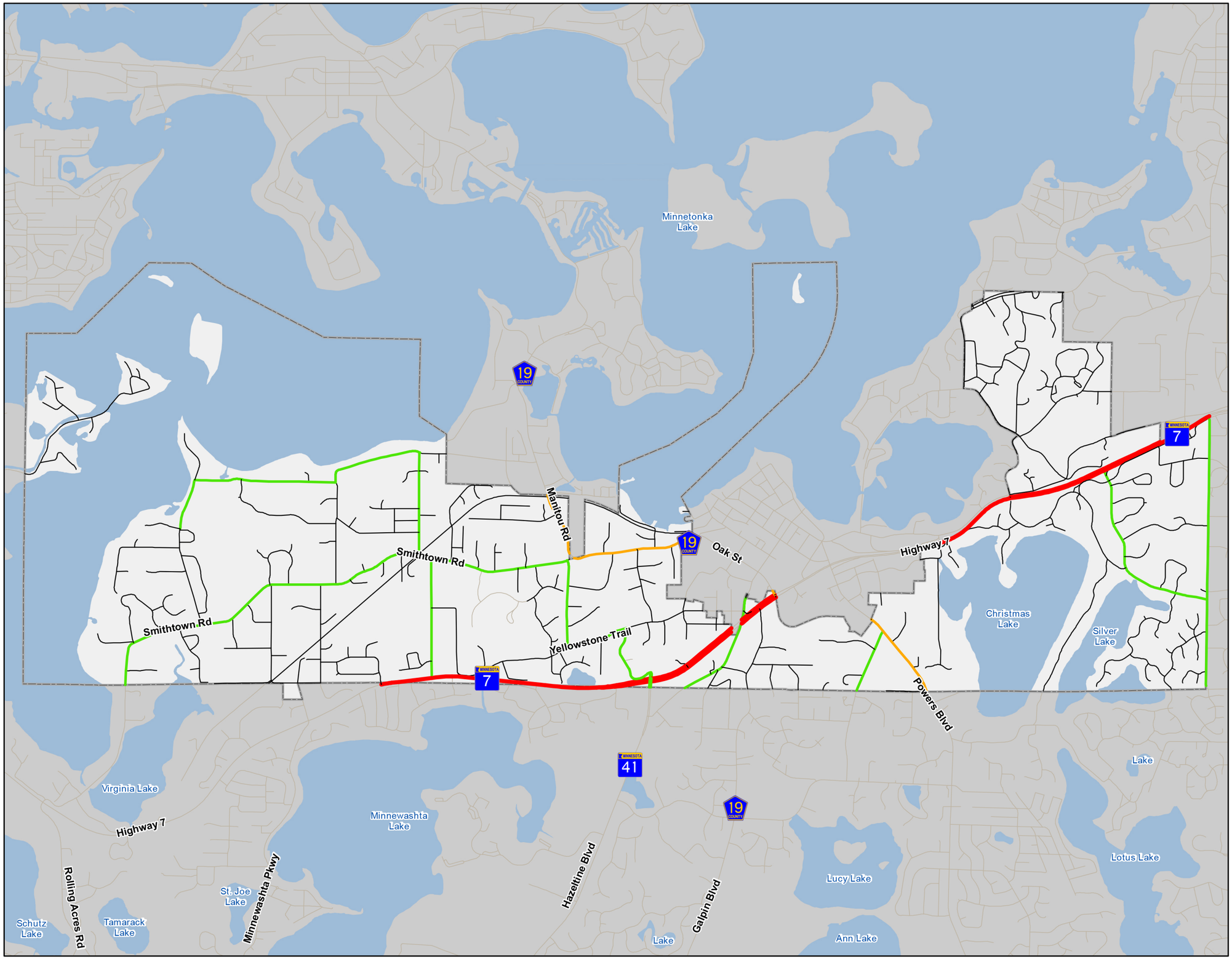
The State Aid office of MnDOT has established clearly defined design requirements for MSA streets. These requirements ensure that capacity, operational, and safety goals are met in a uniform manner from community to community, and that street systems are well coordinated with each other. Based on State Statute, Sections 169.80 and 169.87, MnDOT does not allow cities to restrict truck traffic on MSA streets.

The map on the following page depicts the jurisdictional classification of the overall roadway network serving Shorewood and its residents and businesses.

CITY OF SHOREWOOD

Shorewood Comprehensive Plan

Jurisdictional / MSA Map
Shorewood, MN



Document Path: K:\02925-360\GIS\Maps\Comp Plan\ExistingRoadJurisdiction.mxd Date Saved: 11/2/2018 7:54:00 AM

MASS TRANSIT

The City of Shorewood is served by Metro Transit bus routes 670 and 671. Route 670 is an express bus that runs to downtown Minneapolis through Hopkins, Minnetonka, and Excelsior; and has 10 morning pickup times and 10 evening pickup times Monday through Friday. There is no weekend service.

The City of Shorewood is also served by route 671, an express bus which runs from Orono to downtown Minneapolis through Tonka Bay, Excelsior, Greenwood, Deephaven, and Minnetonka. The route has 10 morning pickup times and 10 evening pickup times. There is no weekend service.

At present, the City of Shorewood and surrounding communities have sufficient transit stops along main transportation corridors.

PARK AND RIDE

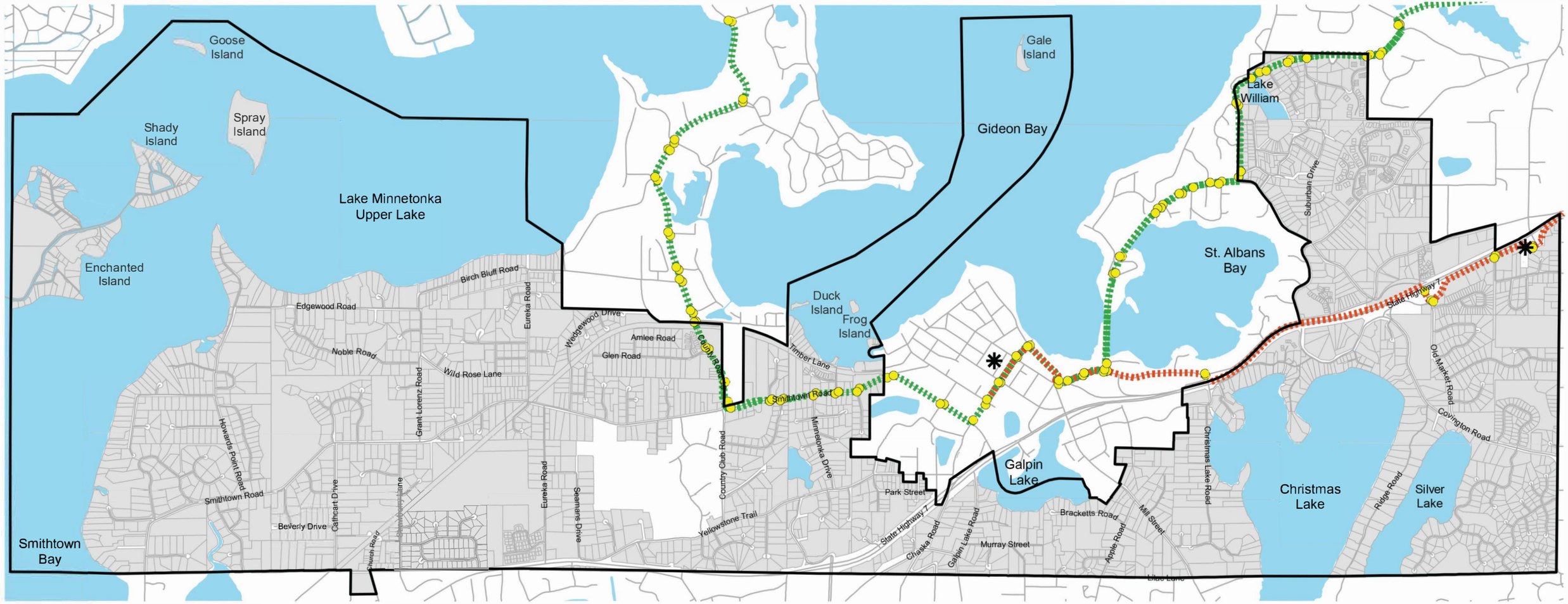
Shorewood has one main bus stop with a Park and Ride, located off Highway 7 on Delton Avenue and Vine Hill Road. The Park and Ride is located at the southwest corner of the intersection. Route 670 serves this station.

AIRPORT TRAFFIC

The Minneapolis-St. Paul International Airport (MSP serves as the area's primary scheduled commercial airline passenger facility. However, MSP does not have any direct effect on the Shorewood community. The Flying Cloud Airport in Eden Prairie is the closest airport to Shorewood and serves small and business aircrafts. Lake Minnetonka is occasionally accessed by sea planes, though these are not of major concern.

Transit

City of Shorewood
2040 Comprehensive Plan



Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council
Metro Transit & Hennepin County

0 0.25 0.5 1
Miles

N

Legend

Transit Route
- Route 670
- Route 671

Transit Stops
- Park and Ride
- Transit Stop

- Parcels
- Lakes
- Shorewood Boundary

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

PEDESTRIAN/BICYCLE TRAILS

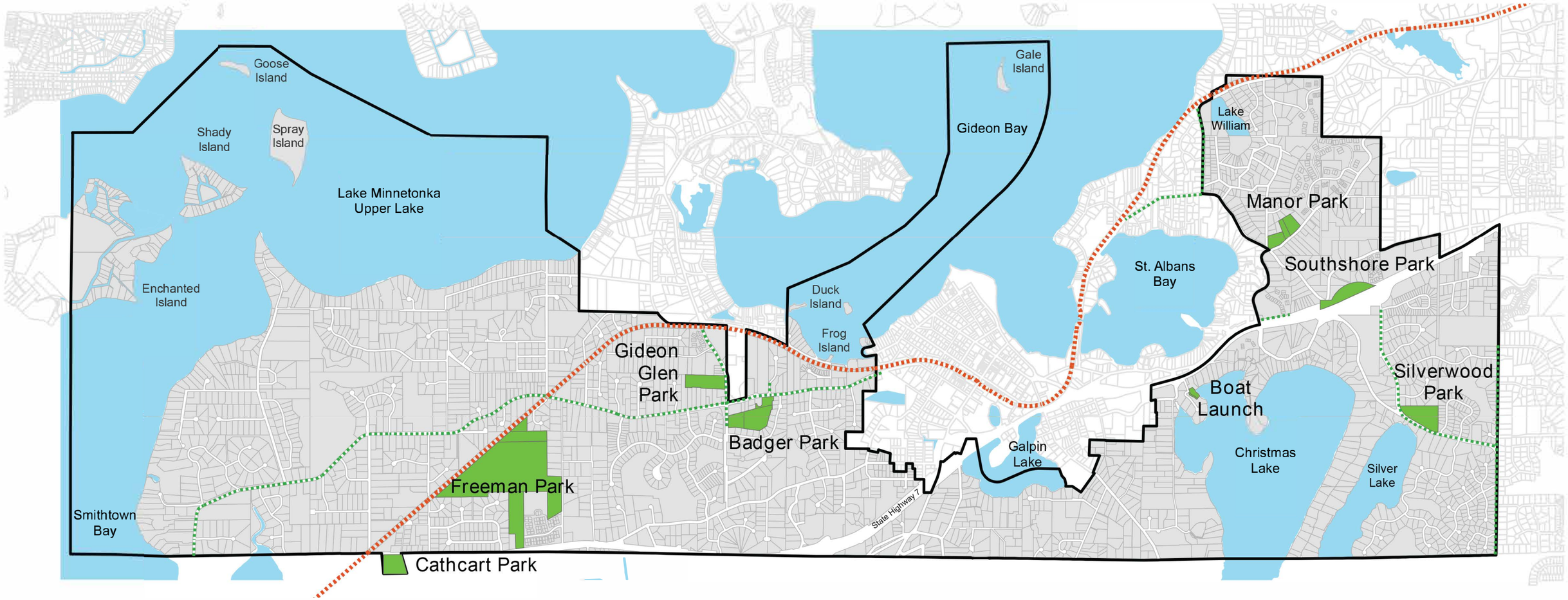
Existing sidewalks and trails in the City are illustrated on the map on the following page.

The Lake Minnetonka Light Rail Transit (LRT) Regional Trail runs east / west through the City of Shorewood. The trail links the City of Hopkins and the Carver Park Reserve and is constructed of crushed stone.

Also, to be noted, is that the Lake Independence Extension Regional Trail search corridor extends through the City of Shorewood. This regional trail search corridor was added to the Regional Parks System as part of the 2040 Regional Parks Policy Plan. The search corridor travels through Orono, Tonka Bay, and Shorewood as it extends the Lake Independence Regional Trail south connecting Luce Line State Trail, Dakota Rail Regional Trail, Lake Minnetonka LRT Regional Trail and Highway 41 Regional Trail Search Corridor in Chanhassen. Three Rivers Park District will lead a planning process in the future to determine the alignment of the regional trail.

Local Parks and Trail System

City of Shorewood
2040 Comprehensive Plan



Local Park and Trail System

- Local Trail
- Lake Minnetonka LRT Regional Trail
- Parks
- City Boundary

Map created: December 2022
Data: NAC, MNDNR, Metropolitan Council

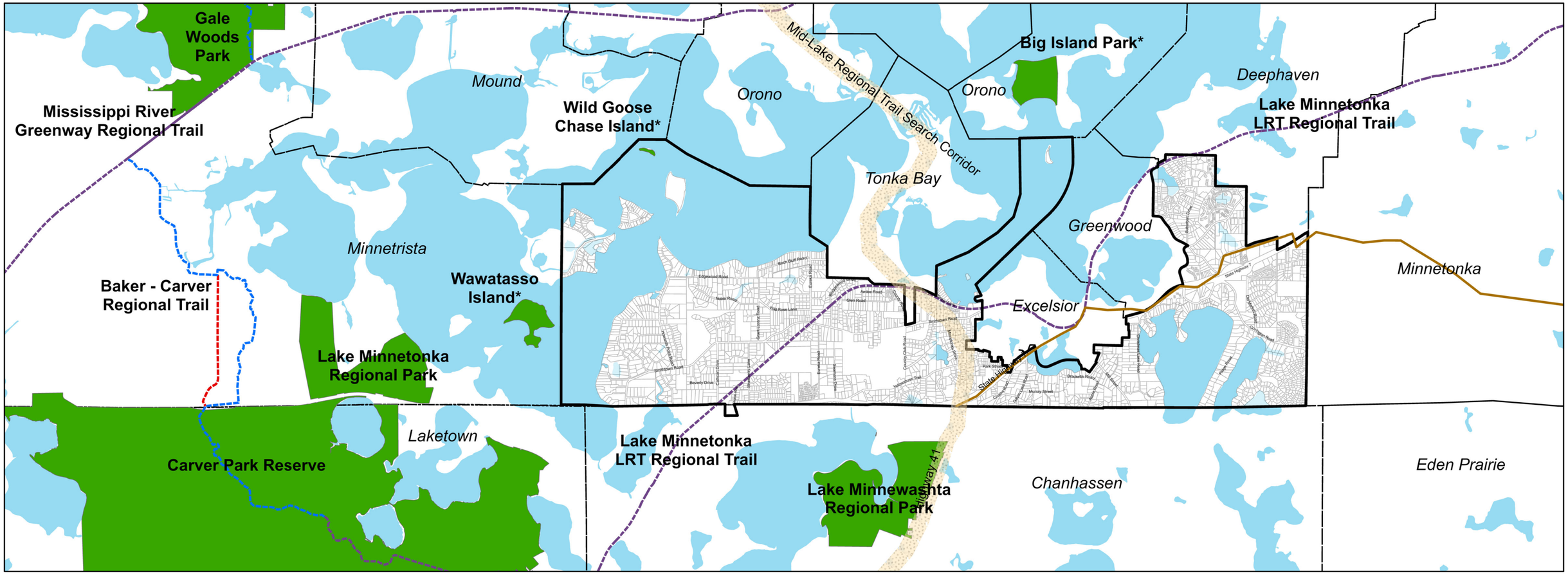
0 0.275 0.55 1.1
Miles

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

Regional Parks and Trails

City of Shorewood

2040 Comprehensive Plan



Legend

Regional Trails

- Alternate
- Existing
- Planned

RBTN Corridor

- Tier 1 Corridor
- Tier 2 Corridor
- Regional Trail Search Corridors

* RBTN: Regional Bicycle and Transportation Network

- Regional Parks
- Lakes And Rivers
- Municipal Boundaries
- Shorewood Boundary

* Part of the Lake Minnetonka Islands Regional Park

* Regional park search areas as general areas and locations that will be defined through future master planning.

Map created: February 2023
Data: NAC, Hennepin County, Metropolitan Council

0 0.5 1 2
Miles

N

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

WATER SUPPLY

About half of the homes are currently served by municipal water; the other half, including the islands, are served by private wells. Shorewood's water distribution system provides approximately 145 million gallons of water each year to nearly 1,500 service connections.

The existing water distribution system is shown on the following page. The overall system includes 30 miles of main and includes two separate water distribution systems (known as the West and East systems) operated by the City, and three small service areas supplied by the cities of Chanhassen, Excelsior, and Tonka Bay. Shorewood's west system provides service primarily to the developments to the west of Excelsior and the east system provides service to the developments to the east of Excelsior.

Each of Shorewood's two distribution systems is served by three groundwater wells and one water tower.

The population of the City has increased over the last ten years but the average daily water demand and the per capita water demand are decreasing as indicated below**.** Improved appliances, reduced irrigation, general attitudes toward conservation, and rainfall likely all play a role in this reduction.

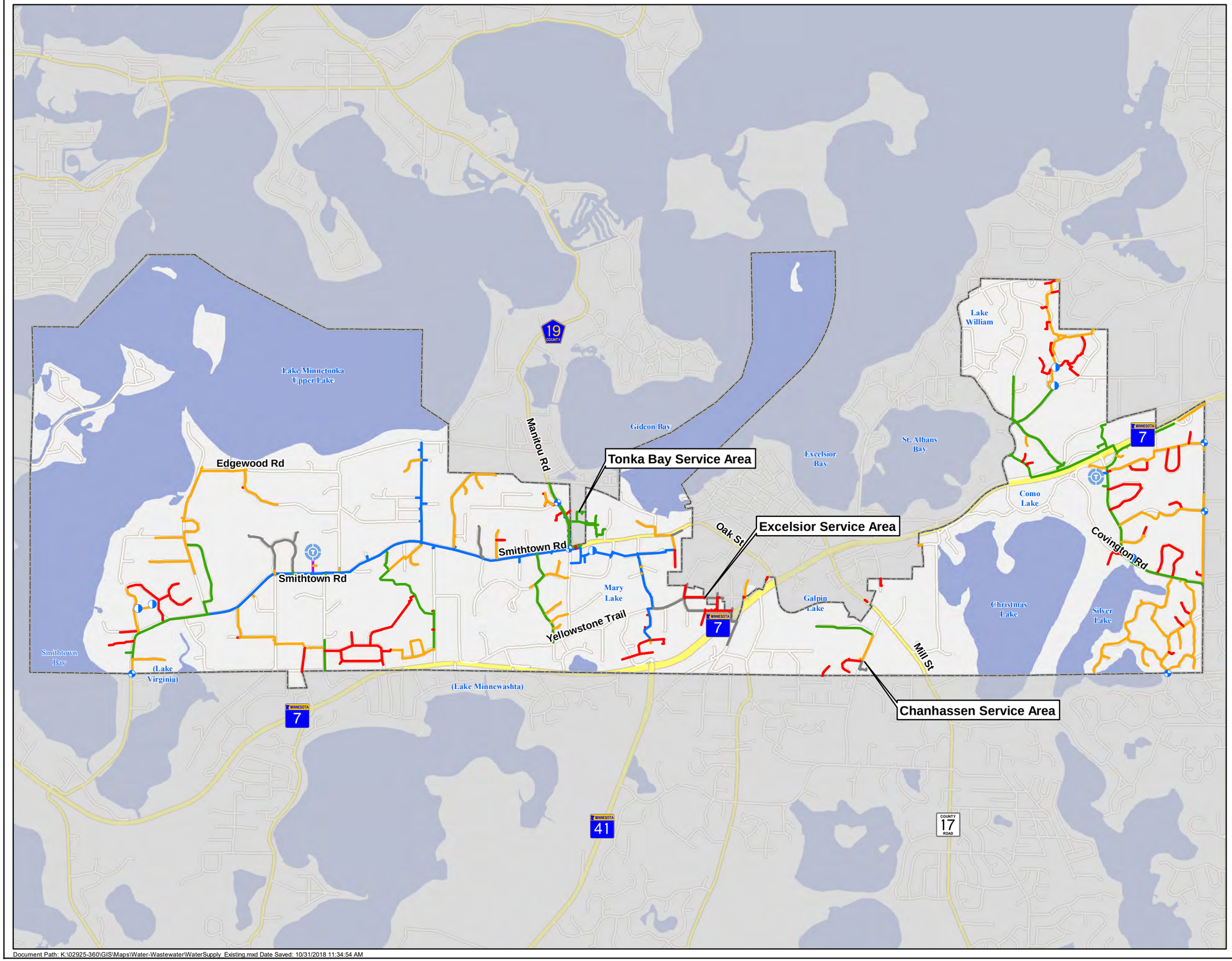
Year	Pop. Served	Total Connections	Total Water Use (MG)	Total Water Pumped (MG)	Percent Unmetered/ Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total Per Capita Demand (GPCD)
2005	3,463	1,195	154.4	152.3	-	0.42	-	-	110	120
2006	3,423	1,195	191.2	180.1	-	0.49	-	-	131	144
2007	3,383	-	-	-	-	-	-	-	-	-
2008	3,343	1,221	176.7	176.2	-	0.48	-	-	139	144
2009	3,751	1,320	170.7	177.7	3.9%	0.49	4.30	5/26/2009	118	130
2010	3,721	1,329	136.0	141.1	3.6%	0.39	0.62	7/16/2010	89	104
2011	3,721	1,332	162.7	164.4	1.0%	0.45	1.04	7/5/2011	104	121
2012	3,634	1,300	182.3	187.9	2.1%	0.51	1.40	7/11/2012	126	140
2013	3,562	1,374	156.0	156.0	0.0%	0.43	1.19	8/14/2013	109	120
2014	3,853	1,372	145.3	145.3	0.0%	0.40	1.40	8/7/2014	99	103
2015	3,865	1,388	130.2	133.2	2.2%	0.37	0.59	7/23/2015	79	94
2016	3,870	1,400	111.6	123.8	0.0%	0.34	0.85	8/3/2016	73	88
Avg. 2012-2016	3,757	1,367	145.1	148.9	0.9%	0.41	1.09	-	97	109

MG = million gallons **MGD** = million gallons per day **GPCD** = gallons per capita per day

CITY OF SHOREWOOD

Shorewood Comprehensive Water Supply Plan

Existing Water Supply System



City Boundary
Interconnection
Production Well
Water Tower

Watermain Diameter

- 6"
- 8"
- 12"
- 16"
- 20"
- Unknown

N

0 2,500 Feet

1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Water-Wastewater\WaterSupply_Existing.mxd Date Saved: 10/31/2018 11:34:54 AM

Water Conservation Policies

Although Minnesotans benefit from the state's abundant water supplies, those supplies are finite and potential threats exist that could impact the quality of our drinking water. Factors that can potentially limit water supply include population increases, economic trends, uneven statewide availability of groundwater, climate change, and degraded water quality. There are many benefits to enacting water conservation policies and many practical, feasible objectives the City has already and will continue to pursue.

The Minnesota DNR has established eight water conservation objectives and strategies. These are listed below with comments on the City of Shorewood's progress towards the completion of each.

1. Reduce unaccounted (non-revenue) water loss to less than 10%.
    - The City's average unaccounted water use from 2012 to 2016 was 0.9%, which is well below the recommended target of 10%. The City has an automated meter system to notify the City of leaky fixtures, and leak detection surveys are performed as needed.
    - There are a total of over 1,400 metered connections in Shorewood. The City completed meter replacement projects in 2007 and 2009. Meter replacement efforts consisted of converting the majority of the meters (1,393 or 99.5%) into automatic meters. Residential and commercial meters are tested as requested by the owner.
2. Achieve residential demand of less than 75 gallons per capita per day.
    - The average residential per capita water demand for the City of Shorewood from 2012 to 2016 was 97 gallons per capita per day (gpcd), which is greater than the DNR's 75 gpcd target. Data from the DNR and the City indicates that residential water demand has been decreasing since 2012. As previously discussed, the decrease in residential per capita demand may be attributed to improved appliances, reduced irrigation, general attitudes toward conservation, and rainfall.
    - In order to continue reducing residential demand, the City will review its ordinances on water efficient landscaping and water reuse annually, consider revising its ordinance to limit irrigation in 3-6 years, continue to make water system improvements, provide incentives for installing water efficient appliances and fixtures in 1-3 years, and provide incentives to reduce outdoor water use in 1-3 years following adoption of this plan. The City will also continue water conservation education and outreach.
3. Achieve at least a 15% reduction in per capita daily demand across all customer categories over the next 10 years.
    - The City of Shorewood will conduct facility water use audits annually, install enhanced water meters capable of automated readings to detect spikes in consumption,

install conservation fixtures and appliances, repair leaking system components, investigate water reuse, and reduce outdoor water use.

4. Achieve a decreasing trend in total per capita demand.
    - Residential water usage shows a fluctuating trend, although it has steadily decreased since 2012. Commercial, institutional, and industrial (C/I/I) water use follows a similar trend. Decreases in water usage since 2012 may be attributed to water efficient fixtures and public education on the importance of water conservation.
5. Reduce peak day demand so that the ratio of maximum to average day demand is less than 2.6.
    - The City's ten-year average (2005-2014) ratio of maximum to average day demand is 3.3. The position of the DNR has been that a peak day/average day ratio that is above 2.6 indicates that the volume of water being used for irrigation in a community is too high and that efforts should be made to reduce the peak day use by the community.
    - The City limits which hours of the day water may be used for irrigation in the summer to reduce peak day demand
6. Implement a conservation water rate structure
    - The water rates in Shorewood are based on an increasing block rate structure. This rate structure promotes water conservation because the price is volume-tiered. Water billing in Shorewood is on a quarterly schedule.
    - The City has also implemented restricted summertime lawn watering hours to reduce peak day demands during months of high water usage.
7. Additional strategies to reduce water use and support wellhead protection planning
    - The City of Shorewood will consider implementing a rebate program for water efficient appliances and fixtures.
8. Tracking success
    - The City will continue to monitor water usage by customer category, including the City's regular maintenance activities (hydrant flushing, street sweeping, etc.).

The following table lists the top water users by volume, from largest to smallest, for the City of Shorewood.

Large Volume Users

Customer	Category	Use (gallons per year)	Percent of Total Water Use
Kraus-Anderson, Inc.	Commercial	1,600,000	1.29%
Cub Foods	Commercial	1,096,000	0.89%
Minnetonka School District No. 276	School	1,052,900	0.85%
Shorewood Ponds Homeowners Association	Residential	715,262	0.58%
Shorewood Oaks Partnership	Residential	677,000	0.55%
Waterford Center LLP	Commercial	504,000	0.41%
New Horizon Academy	Commercial	484,102	0.39%

Water Sources and Treatment

Well information by system is provided in the following table. The total well pumping capacities in the west and east systems are 1,750 gpm and 1,850 gpm, respectively. The west system has a firm capacity (capacity with the largest well out of service) of 1,000 gpm, and the east system has a firm capacity of 850 gpm.

Well Name and ID	System	Year Installed	Capacity (gpm)	Depth (feet)	Aquifer	Status	Treatment
Well 1 #232331	East	1973	750	528	Prairie du Chien - Jordan	Active	Chlorine & Fluoride
Well 3 #161414	West	1981	750	359	St. Peter - Jordan	Active	Chlorine & Fluoride
Well 4 #171020	West	1981	500	640	Tunnel City - Wonewoc	Active	Chlorine & Fluoride
Well 5 #171023	West	1981	500	640	Tunnel City - Wonewoc	Active	Chlorine & Fluoride
Well 6 #122298	East	1982	100	280	Prairie du Chien Group	Active	Chlorine & Fluoride
Well 7 #416160	East	1986	1,000	415	Prairie du Chien - Jordan	Active	Chlorine, Fluoride, & Iron Removal

Chemicals are applied to the raw water in each well house. Chlorine is applied for disinfection, and fluoride is applied to prevent tooth decay. Well House No. 7 also has filters for iron removal.

A city's treatment or production capacity should be equal to at least the maximum day demand with the largest well out of service (firm capacity). Since the City has two separate systems, each should be able to satisfy this constraint individually.

- The west system's firm capacity is 1,000 gpm. The daily demand for this system is projected to reach a maximum of 366 gpm by the year 2040. Thus, maximum day demand for this system is not projected to exceed its firm capacity by the end of the planning period.

- The east system's firm capacity is 850 gpm. The daily demand for this system is projected to reach a maximum of 414 gpm by the year 2040. Thus, maximum day demand for this system is not projected to exceed its firm capacity by the end of the planning period.

Water Storage/Distribution

The west system has one 500,000 gallon steel elevated storage tank located on Smithtown Road beside the Minnewashta Elementary School that was constructed in 1995. Pipe diameters in this half of the system range from 6-inch to 20-inch of ductile iron watermain, with most mains between 6 and 12 inches.

The east system has one 400,000 gallon steel elevated storage tank located on Old Market Road where it meets MN State Highway 7 that was constructed in 1986. This half of the system includes pipe diameters from 6-inches to 16-inches of ductile iron watermain, with most mains between 6 and 8 inches.

A system's total storage capacity should equal or exceed its average day demand.

- The west system's storage capacity of 500,000 gallons exceeds its projected 2040 average day demand of 203,000 gallons.
- The east system's storage capacity of 400,000 gallons also exceeds its projected 2040 average day demand of 229,000 gallons.

SANITARY SEWER SERVICES

The City's sanitary sewer system was first installed in the early 1970's. Capacity limitations in the Metropolitan Council Environmental Services (MCES) sewer system created service issues for Shorewood in the mid 1980's, but improvements to the regional interceptor system resolved those issues. Today, Shorewood is fully built-out and is served completely by the municipal sanitary sewer system. Given that no further expansion of the system is required, the City currently focuses on system maintenance and upgrades.

The City of Shorewood's existing sanitary sewer system collects and conveys wastewater to ten MCES interceptors and eight MCES meters. It includes fourteen local lift stations, see below. In this report, the system has been divided into service areas based on the receiving lift stations and MCES interceptors. A map of the existing sanitary sewer system and service areas is shown on the following pages.

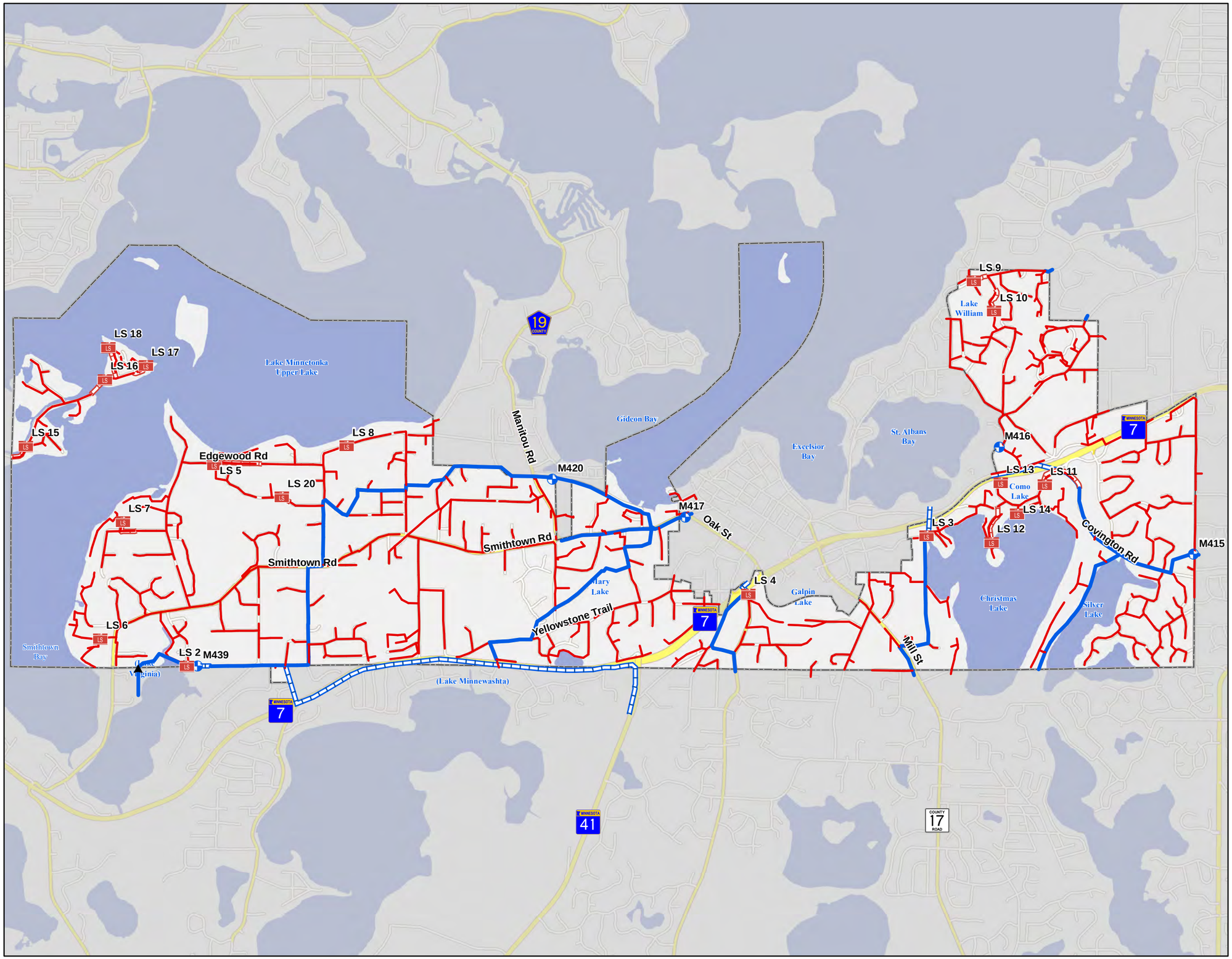
Lift Station No.	Lift Station Location	Year Constructed	Year Rehabilitated	Pumping Capacity (gpm)
5	Edgewood Road	1970	2012	250
6	Smithtown Road	1972	2012	90
7	Woodside Road	1972	-	90
8	Birch Bluff Road	1972	2004	250
9	Minnetonka Boulevard	1972	-	92
10	Lakeway Terrace	1972	-	150
11	Radisson Road	1972	-	200
12	Christmas Lake Point	1972	2007	95
13	Radisson Entrance	1972	-	30
15	Enchanted Lane	1973	2010	135
16	Shady Island Road	1973	2008	110
17	Shady Island Circle	1973	-	100
18	Shady Island Point	1973	2004	110
20	Noble Road	1994	-	80

All wastewater collected in the City of Shorewood is conveyed through the MCES system to the MCES Blue Lake Wastewater Treatment Plant (WWTP) in the City of Shakopee. The Blue Lake WWTP has a capacity of 38 MGD, provides primary and secondary treatment, and discharges treated effluent to the Minnesota River.

CITY OF SHOREWOOD

Shorewood Comprehensive Sanitary Sewer Plan

Figure 1: Existing Sanitary Sewer System



City Boundary
MCES Meter
Lift Station

Forcemain

City Owned
MCES Owned

Gravity Sewer

City Main
MCES Interceptor

N

0 2,500 Feet

1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Water-Wastewater\SanitarySewer_Fig1_Existing.mxd Date Saved: 9/27/2018 10:40:36 AM

CITY OF SHOREWOOD

Shorewood Comprehensive Sanitary Sewer Plan

Figure 2: Sanitary Sewer Districts

Lake Minnetonka
Upper Lake
Gideon Bay
Excelsior Bay
St. Albans Bay
Lake William
Como Lake
Christmas Lake
Silver Lake
Galpin Lake
Mary Lake
Smithtown Bay
(Lake Virginia)
(Lake Minnewashta)
Edgewood Rd
Smithtown Rd
Manitou Rd
Oak St
Yellowstone Trail
Mill St
Covington Rd
19
7
41
COUNTY 17 ROAD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
LS

City Boundary
MCES Meter
Lift Station

Forcemain
City Owned
MCES Owned

Gravity Sewer
City Main
MCES Interceptor

MCES Meter
M412
M415
M416
M417
M420
M424
M439
M455
Sewer Sub-District

N
0 2,500 Feet
1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Water-Wastewater\SanitarySewer_Fig2_Districts.mxd Date Saved: 9/27/2018 2:30:08 PM

Individual Sewage Treatment Systems

The City of Shorewood requires that all new development connect to the sanitary sewer system and prohibits the installation of new individual sewage treatment systems (ISTS), or septic systems. The only ISTS that remain in use are on the following properties

- 6185 Mill Street
- 26750 Smithtown Road
- Gale Island
- Spray Island

The islands are not served by the public system. The section of Shorewood City Code regarding ISTS, Chapter 904: Sewer Code, is consistent with Minnesota Pollution Control Agency (MPCA) regulations (Minnesota Rules Chapters 7080-7083). The provisions, excerpted below, specify connection to the public sewer and abandonment of ISTS.

> *Subd. 3. Connection to public sewer, abandonment of systems.*
>
> *a. The owners of all houses, buildings or properties which abut upon or are served by a public sewer and where cesspools and septic tanks have been in existence prior to the construction of the sanitary sewer shall connect with the public sewer when public sewer becomes available to the property. Shoreland property shall be further governed by Minn. Rules § 6120.3400. Any septic tanks and cesspools and private sewage disposal facilities then existing shall be abandoned and filled with suitable material.*
>
> *b. At the time as a public sewer becomes available to a property served by a private sewage disposal system, as provided in § 904.05 of this chapter, a direct connection shall be made to the public sewer in compliance with this chapter. Any septic tanks, cesspools and similar private sewage disposal facilities then existing shall be abandoned and filled with suitable material.*

The City of Shorewood has delegated the responsibility of permitting, inspecting, maintenance management, and compliance enforcement of remaining ISTS in the City in accordance with Hennepin County Ordinance 19. Therefore, Hennepin County actively oversees the City's subsurface sewage treatment system program.

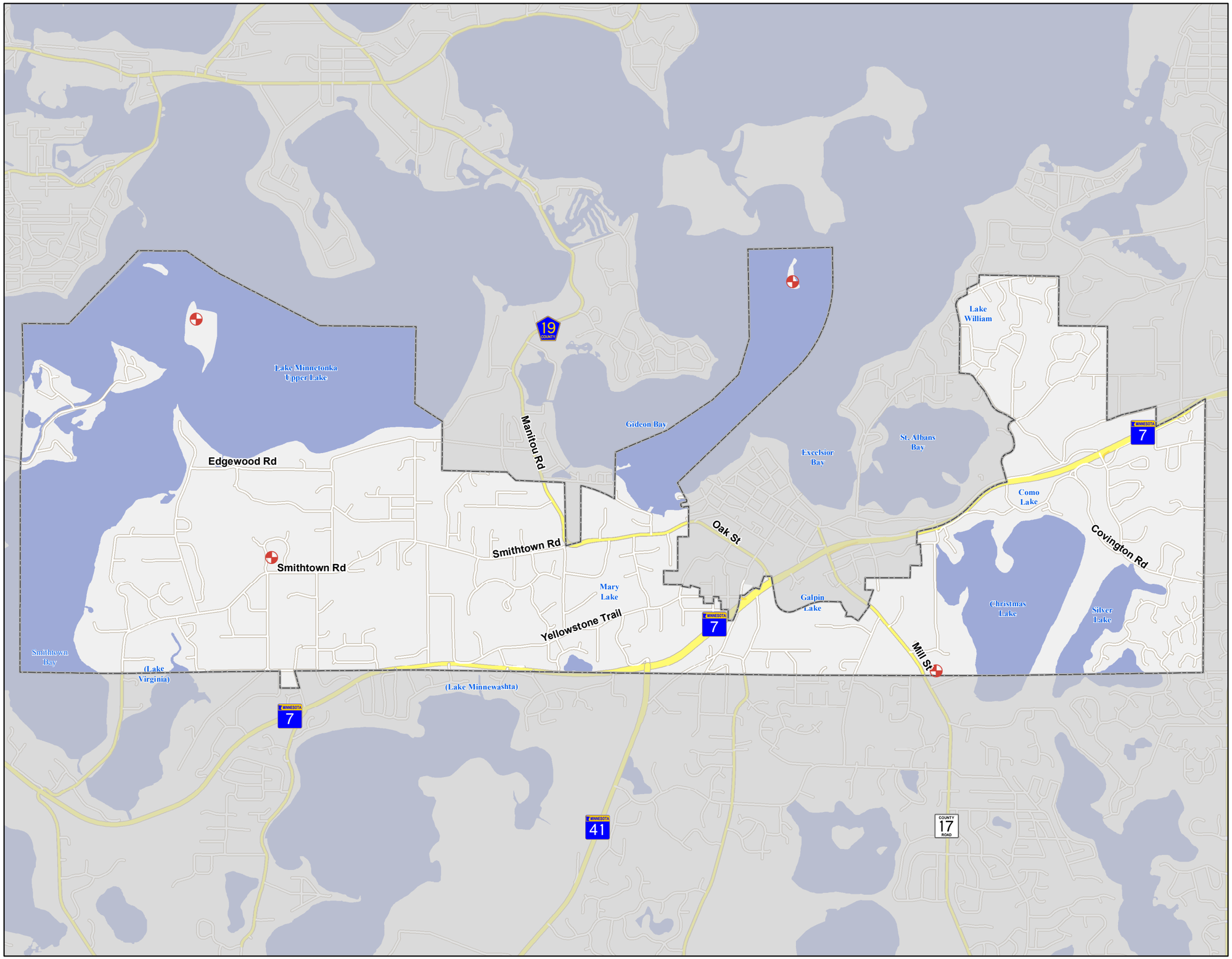
Community Treatment Systems

There are no public or private community treatment systems within the City of Shorewood. All of the properties within the City are served by the public collection system or by individual sewage treatment systems, as described above.

CITY OF
SHOREWOOD

Shorewood Comprehensive Sanitary Sewer Plan

Individual Sewage Treatment Systems (ISTS)



ISTS

City Boundary

N

0 2,500 Feet

1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Water-Wastewater\SanitarySewer_ISTS.mxd Date Saved: 10/31/2018 12:20:18 PM

INFLOW AND INFILTRATION

Inflow is water, typically stormwater, which enters the sewer system through broken manhole covers, sewer cleanouts, sump pumps, foundation drains, and rain leaders. ***Infiltration*** is water, typically groundwater, which leaks into the sewer system through cracks in the sewer mains, laterals, joints, and manholes.

Water from inflow and infiltration (I/I can consume available capacity in the wastewater collection system and increase the flow into treatment facilities. In extreme cases, the added flow can cause bypasses or overflows of raw wastewater. This extra flow also requires a larger capacity in the city's collection and treatment components, which results in increased capital, operation and maintenance, and replacement costs. As a sewer system ages and deteriorates, I/I can become an increasing burden on a City's system. Therefore, it is imperative that I/I be reduced whenever it is cost effective to do so.

In 2006, the MCES began an Ongoing I/I Program which requires communities within their service area to eliminate excessive I/I. The MCES establishes annual I/I goals for each community discharging wastewater into the Metropolitan Disposal System (MDS based on average daily flows, adjustments for community growth, and I/I mitigation peaking factors.

Flow metering data is available for the metersheds within Shorewood, and an analysis of this data as it relates to I/I is presented on the following page. The City completed a three-year I/I reduction program in the early 1990's which included the televising, sealing, and repair of older sections of the system located in wet soils. In the 1990's, the City also began an aggressive sump pump inspection program to eliminate the discharge of stormwater from private properties to the sanitary sewer system. In the 2000's and 2010's, several segments of the sanitary sewer system were rehabilitated or replaced as part of the City's regular street and utility improvement projects. More information on these projects and the City's strategies, programs, investments, and goals for reducing I/I are listed in Chapter 3 (Community Framework.

Community facilities include those lands and buildings required to support suburban development and densities. They are essential for establishing and sustaining a quality life style in a suburban environment.

MUNICIPAL BUILDINGS

City Hall. First built in 1981, then expanded in 1988, the City's Administrative Offices were renovated and expanded in 2008. The renovation/expansion project included accessibility upgrades, increased office space and a new City Council Chambers. No expansion of the facility is anticipated at this time.

Public Works Facility. The City completed construction of the public works facility in 1992. The facility has more and better space for outdoor storage which is screened from view of nearby residential properties. The facility was designed to be expanded and that expansion is anticipated to occur prior to 2040, but an exact timeframe has yet to be determined.

Shorewood Community and Event Center. The facility was first constructed as joint venture between the cities of Shorewood, Tonka Bay, Excelsior, Greenwood and Deephaven in 1996. The City of Shorewood purchased the Center in 2017 and now owns and runs facility. The facility continues to provide meeting space for community groups, private events, and activities for area seniors.

PUBLIC SAFETY

The communities along the south shore of Lake Minnetonka realized the benefit of combining resources for provision of public safety services. Shorewood receives police service from the South Lake Minnetonka Police Department (SLMPD through a joint powers agreement between four communities - Shorewood, Tonka Bay, Excelsior and Greenwood. Cost sharing is based on a formula that includes demand, population, and tax capacity. The City intended to continue its joint powers agreement with the three above-mentioned communities in the foreseeable future.

The Excelsior Fire District (EFD is provided through a joint powers agreement between five communities – Shorewood, Deephaven, Excelsior, Greenwood, and Tonka Bay. The department has a full-time fire chief and 45 paid on call firefighters and operates out of two stations. Station 1 is located in Shorewood and Station 2 is located in the City of Deephaven. Fire Station 1 and South Lake Minnetonka Police Department occupy the South Lake Public Safety building located in Shorewood. The EFD provides service to all of the mainland portion of the City.

Shorewood's islands (Enchanted and Shady are protected by the Mound Fire Department. To enhance protection on the Enchanted Island and Shady Island, a system of dry hydrants has been installed which utilizes lake water and pumper trucks. Placement of three hydrants, as shown on the following page, is intended to reduce the need to backtrack to Mound to fill tank trucks.

The City considers the intergovernmental cooperation for public safety a models for exemplary intergovernmental cooperation and intends no change to these services for the foreseeable future.

PARKS AND RECREATION

At present, Shorewood's park system contains approximately 110 acres or one percent of total land, with 100 acres of usable recreation land. Existing parks include Freeman Park, Manor Park, Badger Park, Gideon Glen Park, Silverwood Park, Cathcart Park, South Shore Park, Crescent Beach (shared with Tonka Bay and one public boat launch (Christmas Lake and 10 public lake access points (called fire lanes to Lake Minnetonka and Lake William. There are also numerous privately-owned facilities throughout the City including homeowners association facilities, two

yacht/sailing clubs, and a marina. These private park facilities are not identified as parks on the Existing Land Use map nor included in the calculation of total land area for parks.

Classification System

Shorewood has a variety of park types which are components of the City's overall park system. As a basis for examining existing parks and projecting future park needs, a regional system of park classification is utilized. The classification table from the Metropolitan Council's Thrive 2040 Regional Parks Policy Plan is provided in Appendix D and provides a description of various types of regional and local park facilities.

Existing System Analysis

Shorewood is fully developed. Given the fact that the City is not expected to see significant additional residential growth and that few vacant land parcels remain in the community, Shorewood is not expected to add new park sites. The City's existing parks are considered adequate in size and location to meet the future needs of the community, as shown in Figure XX.

Shorewood residents are generally well-served by the existing park system. With the exception of the islands and a small pocket south of Galpin Lake, most areas of the community are within a one-half to one-mile radius of neighborhood park facilities. As a result, the focus of future park planning will be on developing existing parks, as opposed to acquiring more land, with one possible exception. The City remains open to considering organization-supported expansion of Freeman Park as well as other existing sites. Also, as land becomes available through tax forfeiture, vacation of public right-of-way, donations and/or other means, it will be examined for possible inclusion in the park system.

.

CITY OF SHOREWOOD

Shorewood Comprehensive Plan

Local Park and Trail System
Shorewood, MN

Minnetonka Lake
Lake Minnetonka Regional Park
Manor Park
Silverwood Park
Badger Park
Freeman Park
Carver Park Reserve
Lake Minnewashta Regional Park
Christmas Lake
Silver Lake
Virginia Lake
Minnewashta Lake
St. Joe Lake
Schutz Lake
Tamarack Lake
Lucy Lake
Lotus Lake
Ann Lake
Lake

Manitou Rd
Smithtown Rd
Oak St
Highway 7
Yellowstone Trail
Powers Blvd
Hazeltine Blvd
Galpin Blvd
Minnewashta Pkwy
Rolling Acres Rd

19 COUNTY
MINNESOTA 7
MINNESOTA 41

City Trails
Regional Trail
City Parks
Regional Parks
City Boundary

N
0 2,500 Feet
1 inch = 2,500 feet

WSB

Document Path: K:\02925-360\GIS\Maps\Comp Plan\ParksTrailSystem.mxd Date Saved: 11/2/2018 7:55:42 AM

Existing Park Classifications

A considerable amount of planning has gone into Shorewood's park system as master plans for each of the City's parks have been developed. These master plans considered the classification system for local and regional parks which were previously identified. The following is an overview of Shorewood's existing park classifications:

Neighborhood Parks. Four of Shorewood's existing parks; Cathcart, Badger, Manor and Silverwood fall into this category. In addition, facilities at Freeman Park also serve the nearby neighborhoods, as do facilities at Minnewashta School.

Community Playfields. The Minnetonka School District has historically been heavily involved in providing playfields for local recreation. Within the City of Shorewood, Minnewashta Elementary School functions in part as a community playfield. Freeman Park is viewed as satisfying the majority of the community's need for playfields, but Badger, Cathcart and Manor Parks also satisfy this need.

Community Park. Besides its neighborhood functions, Freeman Park is the only community park in Shorewood's park system. Given the proximity of various regional parks, the need for an additional community park in Shorewood is not anticipated.

Regional Parks. There are no regional parks in the City of Shorewood.

Conservancy Lands. Shorewood's wetland system, while not suitable for active recreation, is preserved for its aesthetic value, as well as its environmental benefit.

Special Uses. Crescent Beach along Lake Minnetonka and the Christmas Lake access on Merry Lane are essentially single-purpose recreational facilities (or special use parks). Crescent Beach is used exclusively for swimming, while the Christmas Lake access is used for fishing and the launching of boats. Both sites provide winter access to the lakes.

South Shore Community Park was previously used as a skate park, but the community found that purpose was no longer needed. A new master plan should be prepared to determine the appropriate role for such park.

Gideon Glen Park also fulfills a function of a special use park as it serves as a natural / environmental interpretive center.

Linear Park. While not a City-owned park, the Lake Minnetonka LRT Regional Trail fulfills a linear park function by providing walking / bicycle trail linkages within and outside of the City's municipal boundary.

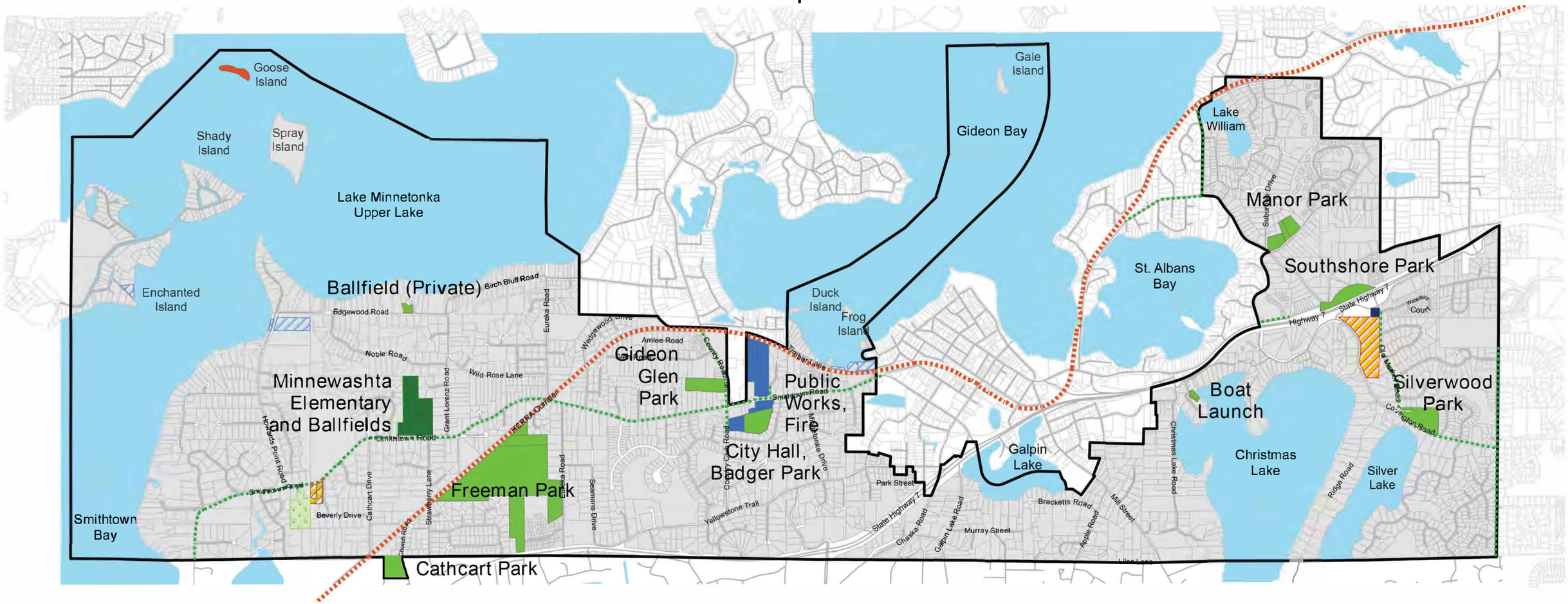
SCHOOLS

Residents of Shorewood are served by two school districts, the Minnetonka School District #276 and Westonka School District #277. Minnetonka School District #276 operates Minnewashta Elementary School in Shorewood and has approximately 9,600 students enrolled district-wide. Westonka School District #277, which serves approximately 2,200 students.

Population growth in the last several years has resulted in the need for expanded facilities throughout District 276. The City of Shorewood has one school located within its boundaries, Minnewashta Elementary School (District 276). The District has expanded Minnewashta Elementary School to meet the needs of the population and has not identified any additional land or locations for new facilities in Shorewood. Given that the city is fully built-out, the need for additional school facilities in Shorewood is considered unlikely.

Community Facilities

City of Shorewood
2040 Comprehensive Plan



Legend

- Regional Trail
- Trails
- Regional Park
- Nursery (Private)
- Marina (Private)
- Cemetery
- City Buildings
- Marina (Private)
- Park
- Public School
- Water Tower
- City Boundary

Map created: December 2022
Data: NAC, MNDNR, Metropolitan Council

0 0.275 0.55 1.1
Miles

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com

WATERSHED DISTRICTS

The City has two watershed districts that operate within its boundaries, the Minnehaha Creek Watershed District (MCWD) and Riley Purgatory Bluff Creek Watershed District (RPBCWD). The watersheds are shown on the following map.

Both watershed districts have permitting jurisdiction over all construction projects within their respective boundaries, including Wetland Conservation Act administration.

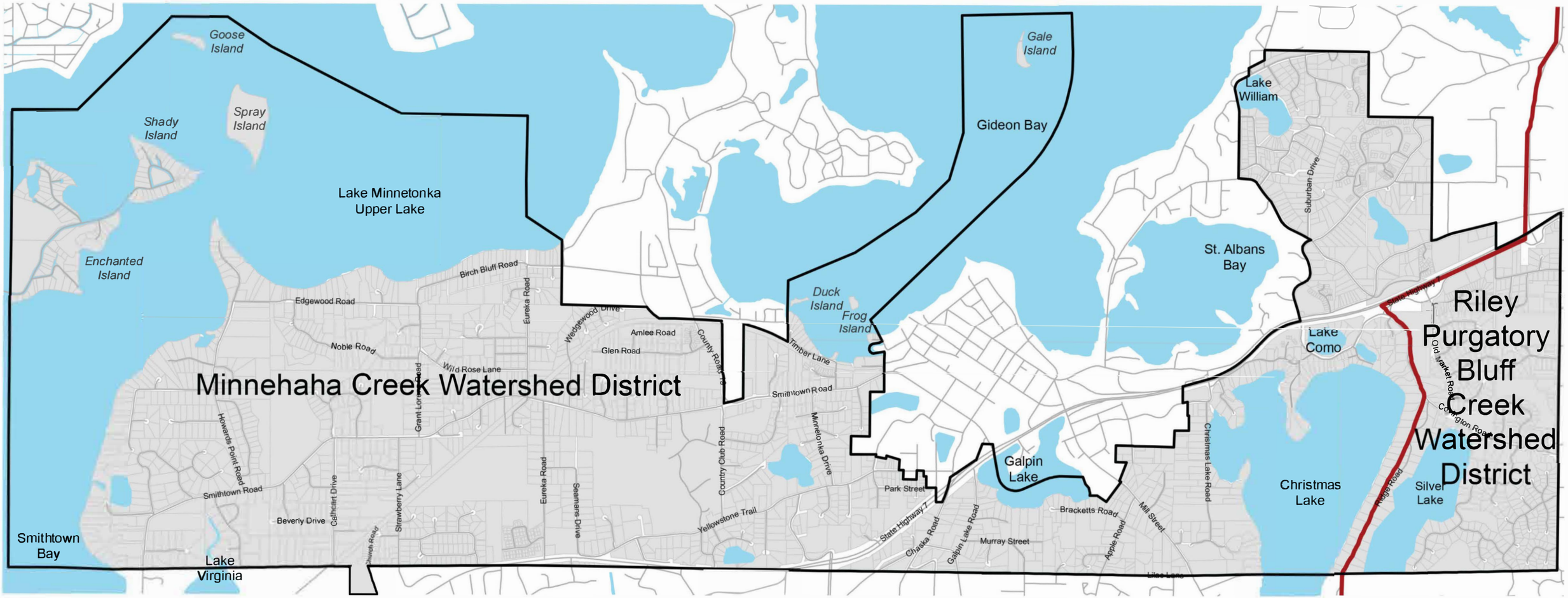
If a permit is required for construction projects both the City and the watershed district reviews the permittee's application for compliance with the rules and regulations. The City of Shorewood has adopted the watershed districts' rules and regulations. A City issued building permit requires both City and watershed district approval of the projects stormwater management components.

Construction phase erosion control inspection and enforcement and post construction storm water management facility and erosion control administration duties are shared and coordinated between the City and the watershed.

Watersheds

City of Shorewood

2040 Comprehensive Plan



Map created: December 2022
Data: NAC, MnDNR, Metropolitan Council

Legend

- Lakes
- Parcels
- Watershed Boundaries
- Shorewood Boundary

0 0.25 0.5 1
Miles

N

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4150 Olson Memorial Highway, Ste. 320, Golden Valley, MN 55422
Telephone: 763.231.2555 Website: www.nacplanning.com