Forest Lake
AS GOOD AS IT SOUNDS

City of Forest Lake
2040 Comprehensive Plan

Approved by Metropolitan Council March 25, 2020
Approved by City of Forest Lake April 13, 2020

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I. INTRODUCTION

This plan provides an overview of the City of Forest Lake, including historical context, existing land use, water and nature features, public facilities, transportation, population, housing, and employment trends and forecasts. It also provides goals and policies for the future of the city and proposes an implementation plan extending toward 2040.

This plan reflects the values and goals city residents and other stakeholders view and hold important. The goals and policies proposed in this plan have been established to provide direction toward these goals.

A. Vision and Goals

The goals and policies in this Comprehensive Plan reflect the community input from open houses, task force meetings, and the vision statement of the City of Forest Lake. Goals and policies are official statements which provide the basis for development and redevelopment strategies. Goals identify various objectives of the city in managing future growth and protecting natural resources. Policies represent the official position of the City of Forest Lake with respect to implementation of goals. Goals and objectives for specific elements are includes at the beginning of each chapter.

Vision Statement

The following vision statement describes Forest Lake in 2040. This statement provided a platform to develop the Comprehensive Plan.

The City of Forest Lake is known for its natural resources and outdoor recreation. The City's overall vision is to serve as a regional hub while maintaining its natural resources and providing a range of recreation opportunities. In 2040, Forest Lake has a thriving, multimodal, downtown commercial area surrounded by natural resource corridors and a range of housing options. As new development is proposed, the emphasis will be the protection of natural resources and continuing connections between all areas of the City.

Overarching Goals

The following five overarching goals for the City of Forest Lake expand upon the above vision and further guided the preparation of this Comprehensive Plan update:

1. Protect Natural Resources

Forest Lake is fortunate for the diversity of natural resources within the community. Forest Lake is committed to preserving and expanding access to these resources as they are integral parts of the community and provide food, as well as animal and fish habitat. Having access to these resources connects residents to nature, encourages active and healthy lifestyles, and promotes community interaction.

2. Provide for Parks and Recreation Opportunities

High quality and accessible parks in a variety of locations, sizes, uses, and amenities are an essential community asset. Facilities should offer resources for all age groups with passive and active elements that support active lifestyles and the overall health of residents and the community. The City will continue to develop quality parks and recreation facilities through planning and identification of needs and appropriate locations in combination with new residential, commercial, and industrial development.

3. Guide Land and Manage Growth

An important role of the Comprehensive Plan is to appropriately guide the use of land and manage the timing by which it is developed. This important challenge is met with careful decisions about land uses, including the location and amount of specific land uses necessary to meet the need and demand for new housing of all types, provide increased areas of commercial, industrial and job growth, and to meet park

and recreation facility needs. The staging plan for development is intended to manage the timing, location and characteristics of growth, based on the logical and practical use and extension of municipal services and infrastructure.

4. Plan for an Effective Transportation System

Forest Lake is committed to developing an ever-evolving transportation system that includes roads, bicycle and pedestrian trails, and transit. The City will continue to work extensively with adjacent communities to identify regional solutions that will aid in access and efficient movement throughout the community. Forest Lake is committed to providing a variety of transportation opportunities to its residents and supporting regional transportation improvements.

5. Create and Expand Opportunities for Employment Growth

Forest Lake recognizes the importance of supporting existing industries while offering new areas for economic growth. Efforts in the downtown area are focused on creating a specific identity to promote the downtown. Providing new opportunities for commercial, industrial, and manufacturing operations in new or expanded business parks and mixed use areas is also a high priority. Forest Lake supports efforts in rural areas to expand entrepreneurial activities that are compatible with the rural character.

B. Background/History of the Community

Settlement of the Forest Lake area initially occurred as a result of the construction of the St. Paul and Duluth Railroad, which was completed in 1869. Platted in 1869, the Village of Forest Lake incorporated in 1896. Settlement of the Township was closely linked with the growth and development of the city. The Township was originally part of Marine Township but became a separate township in 1874.

Growth in both the City of Forest Lake and the Township was fueled by the development of summer lake homes on the shores of the area's lakes, particularly on Forest Lake and Clear Lake. This lake home residential growth was the primary land use other than agriculture in the former Forest Lake Township through the end of the twentieth century, though increased non-riparian residential subdivision and some light industry has diversified the area in the recent decades. In the City, however, the pace of development was much faster and a street grid, contiguous residential neighborhoods, a resulting commercial district, and community facilities such as parks and schools helped the lake home village mature into the fully developed city it is today.

Urban services, such as public sewer, became a necessity in the area. Over the years, individuals and families began to convert many lake homes to year-round use. The increased intensity in use of the homes, as well as their sheer number, caused pollution problems on the lakes. In particular, many individual sewage treatment systems began to fail. This seriously threatened the lakes' recreational, aesthetic, and ecosystem value. By the 1970s, both the City and the Township had constructed sewer systems to serve their more highly developed areas. Soon after, the Metropolitan Sewer Board (whose duties and jurisdiction have since been acquired by the Metropolitan Council) extended a large interceptor to the area connecting the City's and the Township's sewer services to the Metropolitan Wastewater Treatment System.

While the service and importance of the St. Paul and Duluth railroad was diminishing, the construction of I-35 in 1970 increased access between the Twin Cities and the amenities of Forest Lake. Growth in the Township outpaced that in the City with the Township's population surpassing the City's during the 1970s. With continued residential and commercial growth throughout the 1980s and 1990s, the City and Township combined into one city in 2001.

The City of Forest Lake has continued to grow since the city and township merged. To better serve the growing population and provide a community gathering space, a new city center was constructed. The Forest Lake City Center opened in 2014 and houses the city's police, fire, administration, building, and

zoning departments. There are also four meeting rooms in the City Center to accommodate a variety of community events and meetings.

C. Purpose of the Plan

The Comprehensive Plan responds to the requirements of the Metropolitan Land Planning Act: Minnesota Statutes, Section 473.859. The plan is intended to guide future land use development, redevelopment, and other planning and policy concerns for the City of Forest Lake.

D. Process

Descriptive data about the City of Forest Lake were gathered through a variety of sources. These data identified community assets, weaknesses, values, goals, and basic demographics of the City.

- A series of public meetings and open houses was held between April 2017 and February 2018 to review the various issues addressed within the Comprehensive Plan.
- A survey questionnaire was released online in the summer of 2017. Questions in the survey asked basic demographic data of the respondent, community assets and weaknesses, visions for the future, and investment priorities. Approximately 271 responses were collected.
- Information and meeting materials were posted on the City's website to provide updated information about the Comprehensive Plan.
- A Task Force was convened to inform the overall comprehensive process, engage traditionally underrepresented communities, and guide policy goals and recommendations. The committee was comprised of key community leaders from public, private, and government spheres. The committee met four times throughout the comprehensive planning process and provided recommendations to the City.
- Community Conversations focused on draft Plan elements were conducted in January and February 2018.
- The goals and policies were developed based on previous plans, the 2017 community survey, and Task Force, City Council, and Planning Commission discussions.

E. Regional Setting

The City of Forest Lake is located on 35.5 square miles in northwest Washington County. It is located on the I-35 corridor, just north of the east/west split. Forest Lake neighbors Scandia, May Township, and Hugo in Washington County, Columbus and Lino Lakes in Anoka County, and Wyoming and Chisago City in Chisago County.

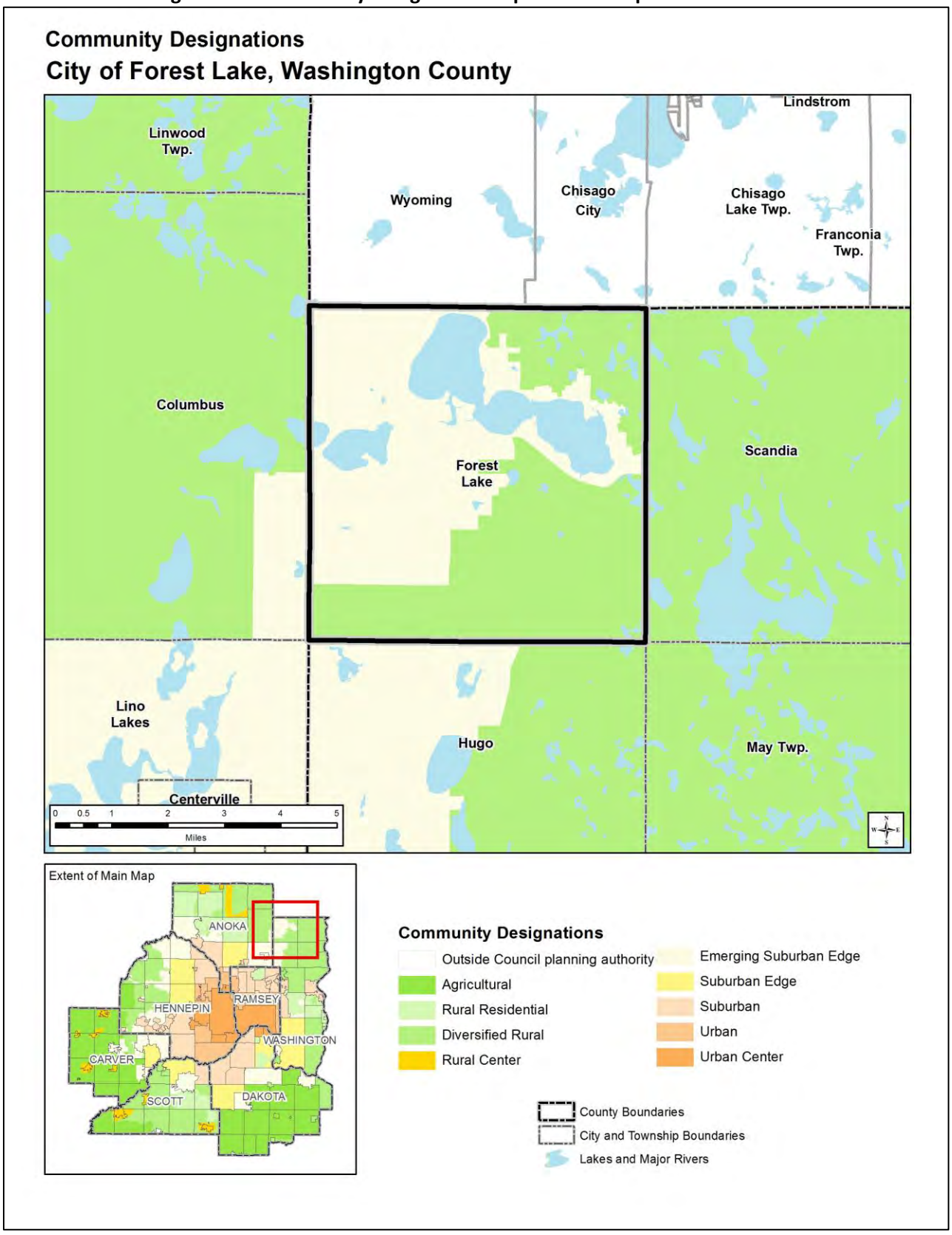
According to the Metropolitan Council, Forest Lake is designated as both Emerging Suburban Edge and Diversified Rural, shown in Figure 1-1. The Emerging Suburban Edge is primarily located in the western half of the city but also extends east, surrounding Forest Lake. Emerging Suburban Communities are categorized by early transitions toward urbanized development but are less than 40% developed. They are characterized by low-density residential development and higher density commercial development in a small downtown or retail/service center and have access to Metropolitan Council water, sewer, transportation, and parks systems. Emerging Suburban Edges are anticipated to develop at an average density of three to five units per acre. This presents both the challenge and opportunity to engage in greenfield development, incorporating natural resources preservation in development practices. This is certainly true of Forest Lake, which is tasked with balancing growth with the preservation of natural corridors and protecting the quality of the many water bodies located in the city.

The eastern half of the city is mainly Diversified Rural. These areas contain a variety of agricultural and non-agricultural land uses. These areas both protect rural, agricultural lands while offering potential for future development. In the future, these communities could face land use incompatibilities should future development occur and urbanization expand. Development in these areas is anticipated to be an average

of four units per 40 acres, as these areas do not have access to municipal sewer like the Emerging Suburban Edge.

As Forest Lake plans for the future, care will be taken to ensure existing and planned land uses in Diversified Rural areas are flexible and compatible with neighboring, and potentially future, suburban land uses. As the MUSA is extended into areas currently designated as Diversified Rural, the community designation will switch to Emerging Suburban Edge to comply with Metropolitan Council standards for sewered communities. This extension of the MUSA and change in community designation is anticipated to occur in the staging detailed in Figure 2-4.

Figure 1-1 - Community Designation Map from Metropolitan Council



II. LAND USE

A. Land Use Goals and Objectives

Goal: *Retain identified agricultural and rural areas and accommodate new residential, commercial/industrial development and redevelopment opportunities in the community that are compatible with surrounding uses, meet public needs, and support the other goals addressed in the Comprehensive Plan, as amended.*

Objectives:

For developing land areas, the City will:

- Encourage innovative development concepts in either new or developing areas that:
    a. Promote a variety of transportation options, such as transit, bicycle, pedestrian, and automobile.
    b. Link life cycle housing with employment, shopping, and recreation areas.
    c. Protect the environment and minimize impacts from development.
- Encourage cluster developments as a means of obtaining larger open space areas using infrastructure investments efficiently and providing for traditional neighborhood oriented interaction.
- Create a staging plan to support infrastructure expansion and land use growth plans.
- Prepare long-range transportation and infrastructure plans that will direct and support future growth and allow the City to financially plan for such growth.
- Expand the level of community functions and services to keep pace with orderly development.

Goal: *Ensure the City's aesthetic character is enhanced through the beautification of its infrastructure and property.*

Objectives:

- Establish design requirements for all commercial, mixed use, Business Park, and industrial districts.
- Establish design requirements for all public facilities including buildings, streetscape, landscaping, and park facilities.
- Enhance the City's gateways by developing plans to install signage, features, and landscaping at City entrances.
- Work with properties that detract from or are contrary to the established image goals.
- Encourage infill development that demonstrates compatibility with existing neighborhood characteristics in terms of quality, density, building height, placement scale, and architectural character.

Goal: *Preserve rural, agricultural, and conservancy uses, including community and hobby farms*.

Objectives:

- Allow residential lot divisions only when adequate public or private utilities are immediately available.
- Review current development regulations to allow compatible secondary uses such as commercial recreation, event centers, and agriculture-related commercial uses in areas where agriculture is the predominant use.

Goal: *Allow for the safe and orderly extraction of aggregate resources now and in the future while protecting sensitive resources on or near those properties and providing for transitions to other uses when resource extraction is complete.*

Objectives:

- Implement performance standards for the management of existing mining operations in order to minimize or prevent negative impacts to resources and nearby land uses.

Goal: *Maintain or improve the ecological quality, environmental function, and aesthetics of environmental systems within the City.*

Objectives:

- Maintain a balance between the expanding urban area and the rural nature of the community.
- Require new development to be designed so as to preserve and be compatible with the important natural features of the site.
- Use the Planned Unit Development (PUD) where appropriate to enhance unique design opportunities in creating neighborhoods and to protect environmentally sensitive areas.
- Promote the use of a diversity of plant species in landscape plans to minimize impacts from and spread of plant diseases and pests.
- Develop plans to promote reforestation, prairie management, wetland restoration and preservation, wildlife management, and other natural area and resource management.

Goal: *Protect natural resources and sensitive areas throughout the community, including soils, woodlands, wetlands, natural water courses, open spaces and steep slopes.*

Objectives:

- Restrict development in highly sensitive natural resource areas.
- Work with the MNDNR, MDA, Washington County, watershed districts, environmental organizations, and other stakeholders to identify ecologically and agriculturally significant resources.
- Educate developers and landowners of the location and value of open space in Forest Lake.
- Encourage the use of incentive-based tools such as conservation easements, purchased development rights, transferred development rights, and acquisition to conserve significant natural resources.
- Preserve environmentally sensitive areas as open space with reasonable utilization of land and in accordance to applicable federal, state, and local regulations. Where preservation is not feasible, minimize impacts.
- Identify greenways or green corridors to facilitate wildlife corridors.

B. Forecasts and Current Demographics

The estimated population of Forest Lake in 2016, was 20,344 residents in 8,100 households. Current estimates and projected populations, households, and employment for the City of Forest Lake are detailed in Table 2-1.

Table 2-1 – Forecasted Population, Housing, & Employment

	2010	2016 *(est.)*	2020	2030	2040
Population	18,377	20,344	21,500	25,200	28,900
Households	7,015	7,652	8,600	10,500	12,300
Employment	6,449	7,080	7,800	8,500	9,200

Source: Metropolitan Council Estimates

Table 2-2 details the historical population in Forest Lake. Historical data for the City are a combination of former City and former Township data. Forest Lake's population grew rapidly from the 1960s through the 1980s, due in part to the completion of Interstate 35. Growth slowed in the 1990s and 2000s and increased slightly by 2010. Moving forward, population growth rates are projected to be about 15% per decade, similar to 2000 growth rates.

Table 2-2 - Historical Population Data						
	1960	1970	1980	1990	2000	2010
Forest Lake (combined City & Township areas)	3,967	6,197	9,927	12,523	14,440	18,377
Increase	x	56%	60%	26%	15%	27%
Washington County	52,432	83,003	113,571	145,896	201,130	238,136
Increase	x	58%	37%	29%	38%	18%

Source: US Census Bureau

Over the years, the Metropolitan Sewer Board extended interceptors, improving services in the City and providing additional capacity for the construction of new homes and businesses. Improvements to the sewer system will continue to ensure that the City can adequately accommodate growth. Rates of household growth, shown in Table 2-3, largely reflect population changes in Forest Lake.

Table 2-3 - Historical Household Data					
	1970	1980	1990	2000	2010
Forest Lake (combined City & Township areas)	1,770	3,311	4,424	5,433	7,015
Increase	x	87%	34%	23%	29%
Washington County	21,314	35,001	49,246	71,462	87,859
Increase	x	64%	41%	45%	23%

Source: US Census Bureau

The average number of persons per households influences the number of housing units the city will need to accommodate projected population growth. Like many cities throughout the metropolitan area, Forest Lake has seen a gradual decrease in the average number of persons per household. Forest Lake continues to have fewer persons per household than Washington County average, detailed in Table 2-4.

Table 2-4 - Average Number of Persons per Household					
	1970	1980	1990	2000	2010
Forest Lake (combined City & Township areas)	3.22	2.98	2.81	2.63	2.60
Washington County	3.82	3.18	2.91	2.77	2.67

Source: Metropolitan Council

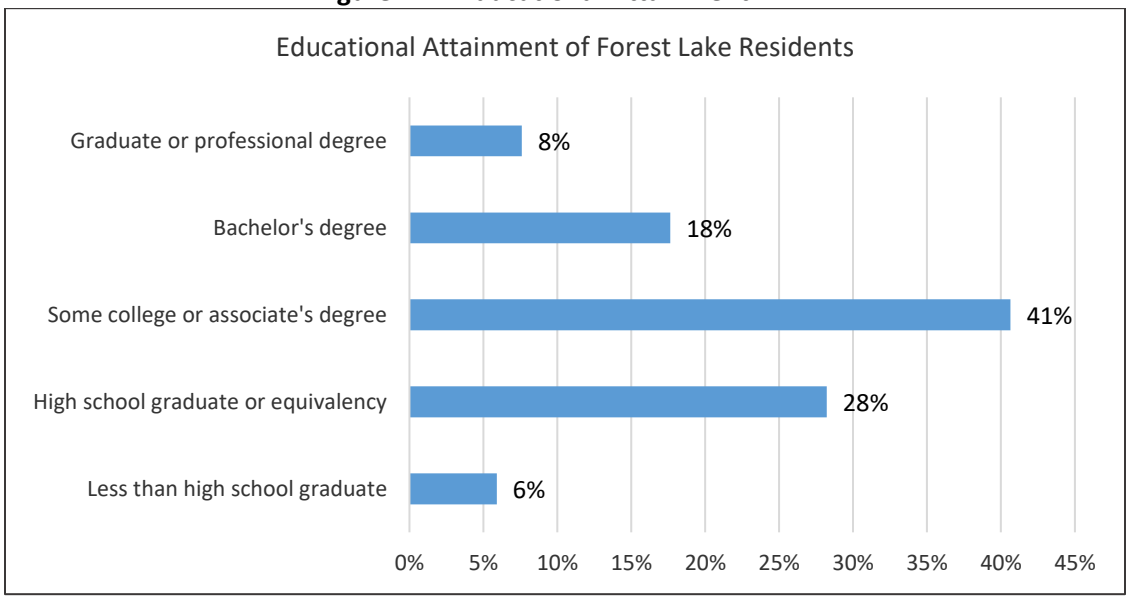
Forest Lake is racially homogenous, shown in Table 2-5, with 95% of the population identifying as white. The second largest racial group in the City consisted of residents identifying as two or more races. Residents identifying as Hispanic or Latino make up about 3% of the city's population.

Table 2-5 - Race and Ethnicity, 2016	
Race/Ethnicity	Percent of Population
White	95%
Black/African American	0.5%
American Indian/Alaskan Native	0.3%
Asian	1.3%
Native Hawaiian/Pacific Islander	0%
Some Other Race	0.5%
Two or More Races	2%
Hispanic/Latino	3%

Source: American Community Survey Data, 2012-2016

Most Forest Lake residents have attained some level of higher education, shown in Figure 2-1, the largest segment of the population having some college education or an associate's degree. About 26% of the population has a Bachelor's degree or higher degree while nearly 30% have a high school diploma or an equivalency.

Figure 2-1 - Educational Attainment



Source: Metropolitan Council Tabulation of American Community Survey Data, 2012-2016

Table 2-6 details the age cohorts in the City of Forest Lake. Compared to Washington County averages, Forest Lake has a younger population. According to American Community Survey statistics, the median age of the city's population is 37.8 years, while the County's median age is 39.1 years. About 30% of Forest Lake's population is younger than 20 years old, which is slightly higher than the County average. About 13% of residents are 65 years old or older, which is similar to the County average.

Table 2-6 - Age of Population, 2016		
Age Group	**Washington County**	**Forest Lake**
Under 5	6.1%	7.9%
5 to 9	7.2%	7.7%
10 to 14	7.3%	6.4%
15 to 19	7.0%	6.9%
20 to 24	5.5%	4.7%
25 to 29	5.5%	5.9%
30 to 34	6.4%	7.0%
35 to 39	6.1%	6.5%
40 to 44	6.9%	7.6%
45 to 49	7.6%	6.6%
50 to 54	8.1%	7.6%
55 to 59	7.3%	7.5%
60 to 64	6.1%	5.0%
65 to 69	4.5%	5.2%
70 to 74	3.2%	2.9%
75 to 79	2.1%	1.7%
80 to 84	1.5%	1.4%
85 or Older	1.6%	1.5%

Source: American Community Survey, 2012-2016

C. Existing Land Use

A large portion of land in the City of Forest Lake is currently undeveloped, representing about 38% of total acreage in the city. The single largest land use in Forest Lake is agriculture (16%), followed by single family detached housing (15%). Table 2-7 further details existing land uses, and Figure 2-2 shows current (2016) land uses in Forest Lake.

Table 2-7 – Existing Land Use Characteristics

Land Use	Gross Acres	Percent of Total
Agriculture	3,550	16%
Airport	54	0.2%
Extractive	11	0.05%
Farmstead	145	1%
Industrial and Utility	97	0.4%
Institutional	323	1%
Mixed Use	4	0%
Multifamily	80	0.4%
Open Water	3,251	14%
Park and Recreational (including Golf Course)	1,448	6%
Retail and Other Commercial (including Office)	339	1.5%
Road ROW	1,199	5%
Seasonal/Vacation	23	0.1%
Single Family Attached	185	1%
Single Family Detached (including Manufactured Housing Park)	3,441	15%
Undeveloped Land	8,576	38%
Total	**22,726**	**100%**

Figure 2-2 - Existing Land Use Map

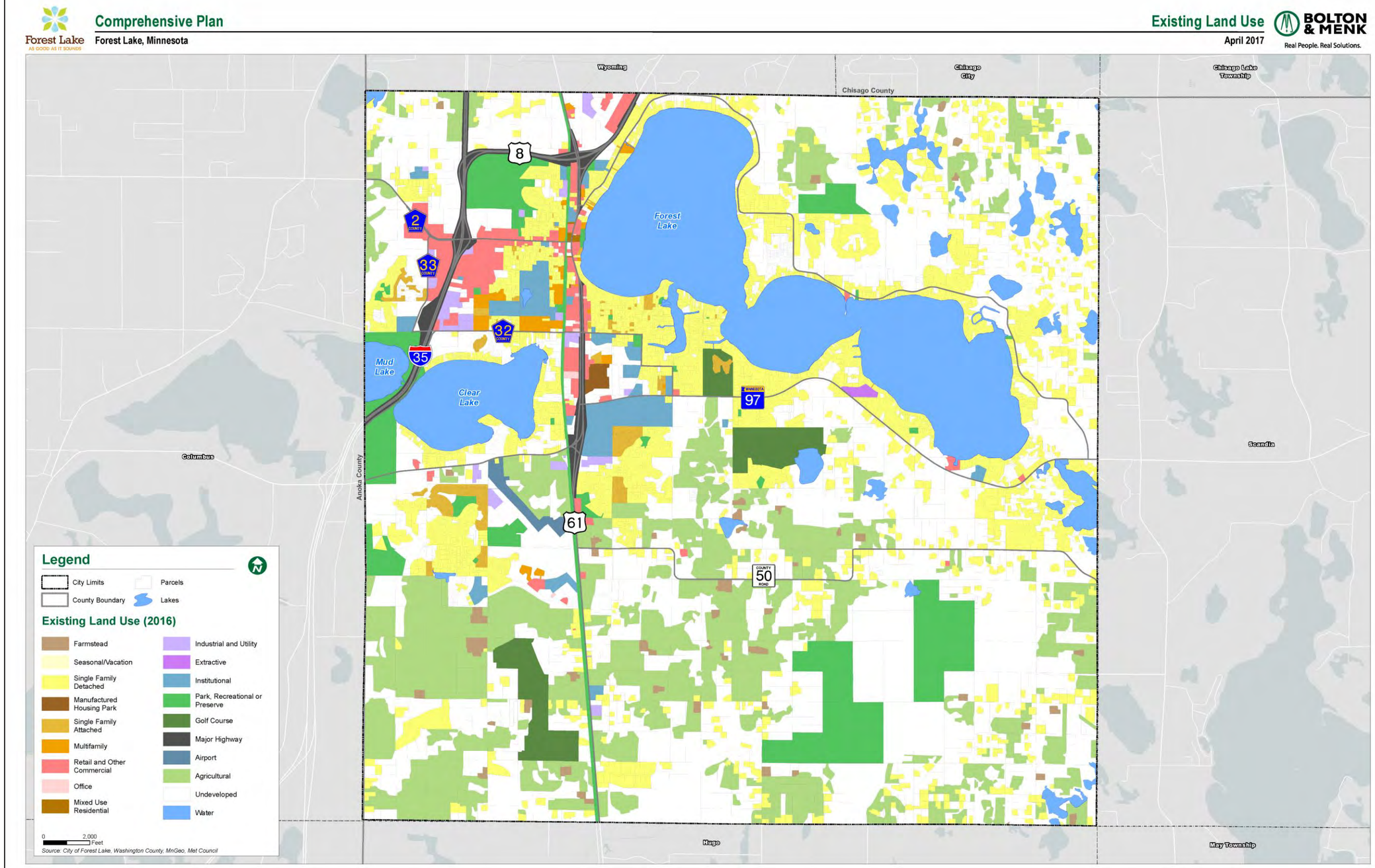


Table 2-8 identifies the number of existing housing units in each future land use category.

Table 2-8 – Net Residential Density, 2016						
Future Land Use Designation	**Single Family Number of Units**	**Multi-Family Number of Units**	**Gross Acres**	**Acres Development Constraints (Wetlands, slopes, ROW, etc.)**	**Net Residential Acres**	**Net Density Units/Acre**
Agriculture	122	2	2,149	407	1,742	0.07
Rural Residential	538	0	4,034	1,095	2,678	0.20
Diversified Rural Subtotal	*660*	*2*	*6,183*	*1,502*	*4,420*	*0.15*
Low Density Residential	1,909	0	1,964	457	1,507	*1.27*
Low-Medium Density Residential	2,974	69	3,702	642	3,060	0.99
Medium Density Residential	407	93	158	45	113	4.44
High Density Residential	160	899	220	54	166	6.39
Mixed Use	39	27	505	59	446	0.15
Downtown Mixed Use	197	517	171	15	156	4.58
Emerging Suburban Edge Subtotal	*5,686*	*1,605*	*6,719*	*1,272*	*5,447*	*1.3*
Not Intended for Additional Residential						
Business Park	8	0	427	51	376	0.02
Conservancy	22	0	2,213	1,851	362	0.06
General Business	61	6	91	4	87	0.77
Highway Business	29	0	1,109	211	898	0.03
Neighborhood Commercial	0	0	21	6	15	0.00
Highway Commercial	8	6	530	214	316	0.04
Industrial	2	0	71	5	66	0.03
Public/Institutional	1	0	624	53	571	0.002
Total	6,477	1,619	17,866	5,169	12,436	0.65

There are several vacant parcels in Forest Lake that can accommodate additional residential development. Approximate number of vacant parcels in future residential land use categories are provided in Table 2-9.

Table 2-9 – Vacant Parcels for Infill Residential Development	
Future Land Use Category	**Existing Vacant Parcels**
Agriculture	4
Rural Residential	21
Low Density Residential	117
Low-Medium Density Residential	47
Medium Density Residential	34
High Density Residential	6
Mixed Use	4
Downtown Mixed Use	0
Total	233

Forest Lake's current zoning code specifies minimum and maximum square feet for various residential development. Table 2-10 shows the range of units per acre that can be developed under current zoning regulations. With the city's inclusionary housing policy, developers can qualify for up to 15% increase on maximum density. Density bonuses are worked out on case-by-case basis for qualifying development, starting with the maximum number of units permitted. These densities will be updated within one year of approval of this comprehensive plan to ensure the zoning code matches planned density ranges, which are detailed in Table 2-15.

Table 2-10 – Current Residential Allowed Density Ranges

Zoning District	Units/Acres (Ordinance Standards)
Agriculture	.05 to 0.1 unit/ acre
Rural Residential	0.2 unit/ acre
Low Density	1.5 to 4 unit/ acre
Low-Medium	3 to 6 unit/ acre
Medium Density	2 to 5 unit/ acre
High Density	Max. 15 unit/ acre
Mixed Use	10 to 15 unit/ acre
Downtown Mixed Use	10 to 15 unit/ acre

The zoning code for the City of Forest Lake provides a maximum impervious surface coverage for commercial and industrial development. The Metropolitan Council has provided estimates for the number of employees per square feet in various employment types. Rates range from 556 square feet per job at the low end (medical clinics) to 2,500 square feet per job at the high end (hotels). Using the City's impervious surface coverage as guidance, an estimate of jobs/square foot can be used to project future employment based on future land use designations and planned development. These are provided in Table 2-11. The Neighborhood Commercial and Downtown Mixed Use Zoning Districts are only limited by setback requirements.

Table 2-11 – Commercial/Industrial Allowed Density

Zoning District	Maximum Impervious Surface
Broadway Business	80%
Business Park	65%
Highway Commercial	80%
Industrial	80%
Mixed Use	80%

D. Future Land Use

The 2040 Land Use Map shows the desired land use for all property in Forest Lake. Table 2-12 summarizes the planned land uses by category shown on the map. The planned future land uses shown on this map reflect previous community planning efforts as well as desired updates identified as part of the 2040 Comprehensive Plan Update process.

Table 2-12 - Planned Land Use Characteristics

Land Use	Gross Acres		Percent of Total
Agriculture	2,149		9.3%
Rural Residential	4,034		17.4%
Low Density Residential	1,964		8.5%
Low-Medium Density Residential	3,707		16.0%
Medium Density Residential	158		0.7%
High Density Residential	205		0.9%
Mixed Use	376		1.6%
Downtown Mixed Use	171		0.7%
Business Park	427		1.8%
General Business	91		0.4%
Highway Business	1,109		4.8%
Highway Commercial	546		2.3%
Industrial	71		0.3%
Neighborhood Commercial	21		0.1%
Public/Institutional	624		2.7%
Road ROW	1,199		5.2%
Park and Recreational	901		3.9%
Conservancy	2,213		9.5%
Open Water	3,251		14.0%
Total	23,216		100%

Figure 2-3 - Future Land Use Map

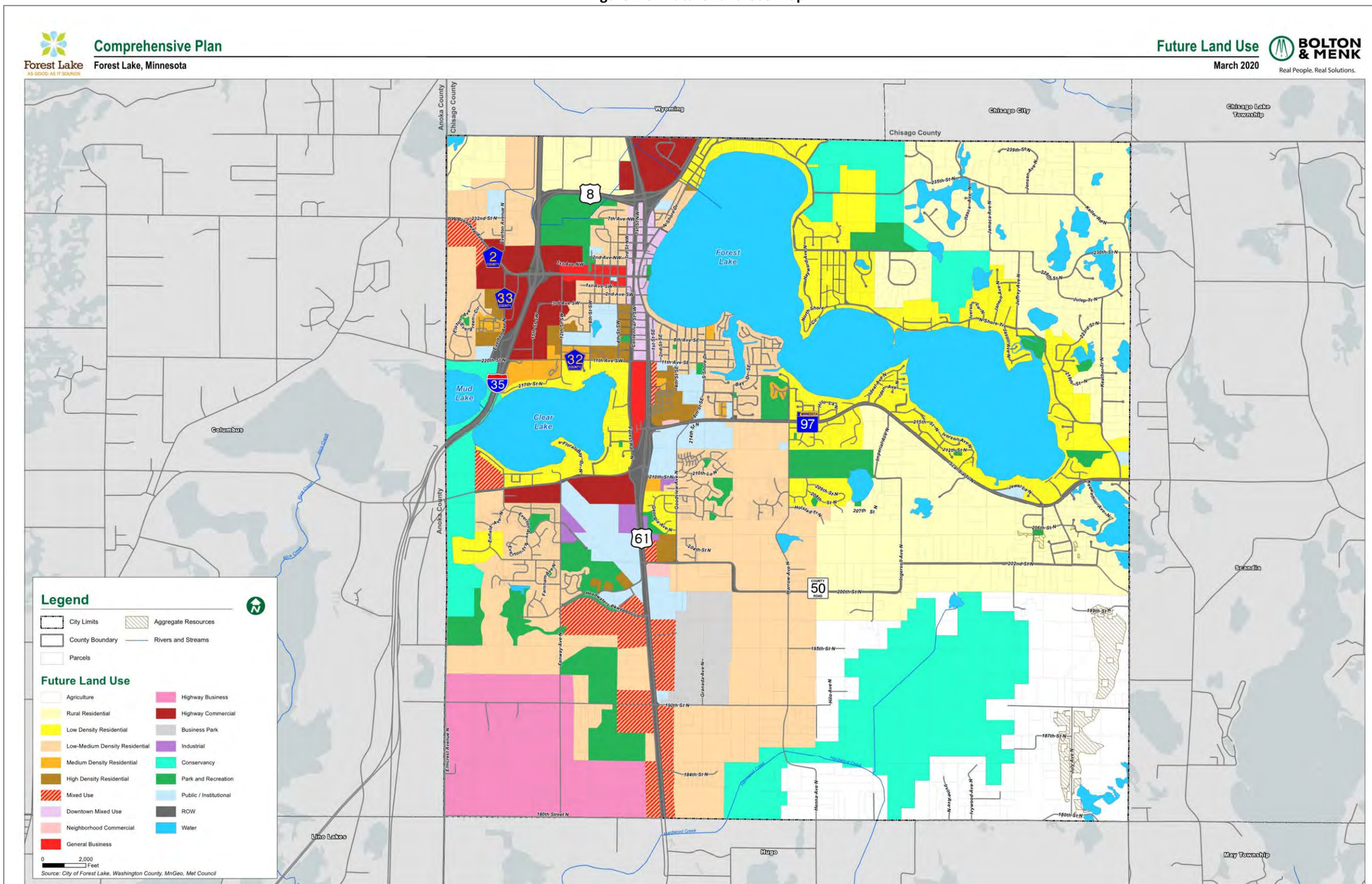


Table 2-13 summarizes the developable land available by decade in future land use classifications. Non-developable land includes areas that cannot be developed, such as wetlands, steep slopes, and road right-of-way, as well as existing development. Development is forecasted for each decade at existing land use densities, adding to the total amount of non-developable land in each land use district. Forecasted development is based on projected housing and employment needs (as projected in Table 2-1, *Forecasted Population, Households and Employment*), minimum lot sizes in each land use district, and an anticipated allocation of the projected housing development between each of the residential land use districts. Land uses that are not developable are excluded from this table (conservancy, parks, road right-of-way, and open water).

Table 2-13 - Guided Land Use Acres for Developable Land Uses

	2016 (Current)		2020		2030		2040	
	Developable Acres	Non-Developable	Developable Acres	Non-Developable	Developable Acres	Non-Developable	Developable Acres	Non-Developable Acres
Agriculture	1,491	658	1,491	658	1,491	658	1,491	658
Rural Residential	2,191	1,843	1,877	2,157	1,249	2,785	654	3,381
Low Density Residential	457	1,507	387	1,577	276	1,688	161	1,803
Low-Medium Density Residential	1,927	1,780	1,694	2,013	1,334	2,373	959	2,748
Medium Density Residential	50	108	47	111	45	113	42	116
High Density Residential	46	159	41	163	21	184	2	203
Mixed Use	245	131	240	136	182	193	163	212
Downtown Mixed Use	24	147	21	150	5	166	0	171
Business Park	358	69	358	69	304	123	250	177
General Business	8	83	2	89	1	90	0	91
Highway Business	793	315	793	315	778	331	746	362
Highway Commercial	130	416	119	426	115	431	114	431
Industrial	48	23	42	29	40	31	40	31
Neighborhood Commercial	15	6	14	6	14	6	14	6
Public/Institutional	233	391	227	397	226	399	226	399
Total	8,016	7,636	7,355	8,295	6,080	9,571	4,863	10,788

To meet projected housing needs, it is anticipated housing units will be developed in the following percentages in each land use district permitting residential uses.

Table 2-14 - Anticipated Residential Development	
Future Land Use Category	**Desired Distribution**
Agriculture*	0%
Rural Residential*	5%
Low Density	9%
Low-Medium Density	58%
Medium Density	1%
High Density	13%
Mixed Use	10%
Downtown Mixed Use	4%
Total	100%

The following land use descriptions will be used for planning purposes and guiding future land use.

- **Conservancy:** This category provides protection for areas with valuable natural resources. These are portions of the community that are particularly environmentally sensitive and include large, contiguous wetland areas. Conservancy areas include a large wetland complex that includes Hardwood Creek and the Hardwood Creek Wildlife Management Area, two smaller wetland areas north of Forest Lake, and part of Lamprey Pass Wildlife Management Area.
- **Agricultural:** This district preserves areas for interim or permanent agricultural uses, preserving the rural character of outlying areas of the City and permitting a mixture of rural, large lot residential development and agricultural related uses. The maximum allowable density in these areas is one unit per 10 acres. In areas within the City's future urban service area, residential density will be one unit per 20 acres.
- **Rural Residential:** Rural Residential purposes include one-family homes. Uses in this category may also include agricultural uses or plant nurseries. The Rural Residential category comprises areas that are difficult to serve with municipal wastewater treatment systems and that will be so in the foreseeable future. The density in these areas is 0.16 to 0.2 units per acre.
- **Low Density Residential:** This category identifies areas for single family, detached residential development at a density of 1.5 to 4 units per acre.
- **Low-Medium Density Residential:** Residential purposes include one-family homes, both detached and attached, and two-family homes. Open or park space may be included within or adjacent to or be related to a residential development. To accommodate a mix of attached and detached housing units, the density range is 3 to 6 units per acre.
- **Medium Density Residential:** These areas are intended to provide for townhome development, multiplex development, and row homes at densities of 6 to 10 units per acre.
- **High Density Residential:** Residential purposes include duplexes, triplexes, townhomes, apartment buildings, and condominiums. It may also include open space within or adjacent to or be related to a residential development. Density is intended to be 15 to 20 units per acre..
- **Neighborhood Commercial**: This category is intended to be neighborhood based and include uses such as a small grocery or convenience store, coffee shop/deli, and personal and health services for Forest Lake's residents. The site and architecture design should be of scale and design compatible with the surrounding uses.

- **Highway Business:** Land guided for this district is intended for businesses that require proximity to the regional transportation infrastructure such as warehousing, wholesaling, e-commerce, light manufacturing, and data centers. These uses typically include accompanying administrative offices and may include retail/wholesale sales of a limited nature. Exterior storage of merchandise is kept to a minimum.
- **Highway Commercial**: Land guided for highway commercial is intended to accommodate uses that provide a wide range of goods and services that serve the needs of people who live or work in and around the City. This category also provides for general and light industrial uses.
- **General Business:** This use is intended to accommodate general commercial businesses such as fast food restaurants, convenience stores, gas stations, big box retail, and other auto-oriented businesses. Limited office and service uses are also appropriate depending on scale and location.
- **Business Park**: This category provides for offices, wholesale showrooms, light manufacturing, research and development, and training. These areas are along major arterial corridors to provide easy access to businesses, accommodating larger site development.
- **Industrial**: This category mainly allows manufacturing and/or the processing of products and could include light or heavy industrial land use or large warehouse facilities.
- **Mixed Use**: The purpose of this category is to provide areas for compact, walkable, mixed use development along key community corridors and to support high quality development and site flexibility due to the unique site conditions in these areas. This district permits a range of retail, office, service, and multi-family residential uses with residential densities between 10 to 15 units per acre. The Mixed Use districts requires a 50% residential development minimum, with the remaining percentage available to permitted commercial, retail, and service uses.
- **Downtown Mixed Use**: The purpose of this category is to provide areas for compact, walkable, mixed use development in the heart of Forest Lake. This district permits a range of retail, office, service, and multi-family residential uses with residential densities between 20 to 30 units per acre. The Downtown Mixed Use districts requires a 50% residential development minimum with the remaining percentage available to permitted commercial, retail, and service uses.
- **Park and Open Space:** Primarily for public active recreation activities with playfields/ground, exercise equipment, or other similar areas and passive open space park amenities. Typical uses include tot lots, neighborhood parks, community parks, ball fields, public golf courses, public gardens, greenways and trail corridors, beaches, and community centers.
- **Public Institutional:** This category includes religious, governmental, educational facilities, and lands owned by the City for public use.
- **Open Water:** This category includes permanently flooded open water, rivers, and streams not including wetlands or periodically flooded areas.
- **Major Road Right-of-Way:** This category includes public or private vehicular, transit, and/or pedestrian right-of-way.

1. Density Calculations

Based on the above future land use plan, planned land use categories and densities, and land use calculations, residential and commercial land use requirements have been calculated to help Forest Lake plan for and meet Metropolitan Council projections for population, households, and employment. Residential calculations are detailed in Table 2-15 and commercial/industrial calculations are detailed in Table 2-16.

Residential

To meet forecasted 2040 population and household projections, the City of Forest Lake will need to add approximately 4,920 housing units by 2040. These calculations show the approximate number of acres needed to accommodate all needed housing units in each residential zoning district. Residential development is anticipated to take place in all residential zoning districts in an orderly manner consistent with the staging plan, discussed below. These calculations do not include available density bonuses or potential redevelopment of existing properties. Actual acreage needed to accommodate future households and their locations will be influenced by market forces.

The City of Forest Lake has designated more residential land within the 2040 urban growth boundary than needed to meet population and household projections. Additionally, the projected density in the Rural Residential land use category is 0.16 to 0.2 dwelling units per acre to match the character and density of existing development in these areas. Actual density in this district may be lower given the location of existing development and the ability/inability to subdivide into appropriate lot sizes.

Table 2-15 – Residential Density Calculations

Future Land Use Category	Planned Density Range (Units/Acre)	Desired Distribution	Number of Housing Units	Minimum Acres	Maximum Acres	Current (2016) Developable Acres
Agriculture*	0.05 to 0.1 unit/ acre	0%	0	0	0	1,491
Rural Residential*	0.16 to 0.2 unit/ acre	5%	246	1,230	1,537.5	2,191
Low Density	1.5 to 4 unit/ acre	9%	443	110.8	295.3	457
Low-Medium Density	3 to 6 units/ acre	58%	2,903	483.8	967.7	1,927
Medium Density	6 to 10 units/ acre	1%	49	4.9	8.2	50
High Density	15 to 20 units/ acre	13%	648	32.4	43.2	46
Mixed Use	10 to 15 units/ acre	10%	492	32.8	49.2	245
Downtown Mixed Use	20 to 30 units/ acre	4%	199	6.63	9.95	24
Total	-	100%	4,980	1,901	1,374	6,431
Average Density for Diversified Rural (Districts with *)		5%	246	Max Acres: 1,537.5		0.16 units/acre
Average Density for Emerging Suburban Edge (All Other Districts)		95%	4,734	Max Acres 1,374		3.4 units/acre

Employment

To meet forecasted 2040 employment projections, the City of Forest Lake will need to add 2,120 jobs by 2040. These calculations show the approximate number of acres needed to accommodate all needed new jobs in each zoning district. Actual acreage needed to accommodate jobs will greatly depend on the types of businesses starting or expanding in Forest Lake. These calculations also do not include remote telecommuting, home occupations, or permitted employment opportunities in other zoning districts, all of which will influence the number of acres needed to accommodate employment in Forest Lake.

Table 2-16 – Employment Density Calculations					
Future Land Use Category	Density Range (Jobs/Acre)		Minimum Acres	Maximum Acres	Current (2016) Developable Acres
	Minimum	Maximum			
Business Park	11.4	50.7	6.3	27.9	235.3
Downtown Mixed Use	17.5	78	0.7	3	155.8
General Business	14	62.4	1.7	7.6	7.9
Highway Business	14	62.4	10.5	46.8	793.3
Highway Commercial	14	62.4	3.4	15.1	114.4
Industrial	14	62.4	1.7	7.6	48
Institutional	14	62.4	1.7	7.6	233.3
Mixed Use	14	62.4	8.7	38.5	374
Neighborhood Commercial	17.5	78	0.3	1.2	15
Total	-	-	34.9	155.2	1,976.0

Based on the guided land use and available developable acres, the City of Forest Lake has sufficient acreage to accommodate projected population, household, and employment growth.

The remainder of the Downtown Mixed Use zoning district is expected to develop by 2040. Depending on the types of development, there may not be enough developable acres to accommodate projected growth in this district. However, there is plenty of acreage in the City of accommodate additional employment or businesses needing larger sites. Outside the Downtown Mixed Use district, two other zoning districts permit high density residential development (High Density Residential and Mixed Use). There is also the potential for redevelopment in this district, which could allow more growth to occur in this area.

Additionally, the 2040 staging plan anticipates development of the City's remaining Medium Density acreage. The majority of land in this district is already developed, and remaining undeveloped areas are within the current MUSA service area. The full development of this zoning district is not expected to pose a problem for the City, as the Low-Medium Density zoning district permits all of the same land uses as the Medium Density district. The majority of developable land planned for residential land uses in Forest Lake is in the Low-Medium Density District.

Further, the balance of residential and commercial development in the Mixed Use zoning district will influence total developable acres in this district. The current 2040 staging plan does not forecast full development of lands planned for Mixed Use, providing flexibility to accommodate more residential or commercial development as market conditions demand. Current development in the Mixed Use zoning district may also influence the types of development that can take place or the desire to develop in specific areas.

2. Staged Development or Redevelopment

A Staging Plan was developed to guide the contiguous pattern and location of growth based on current development patterns and the availability of infrastructure. The goal of the Staging Plan is to manage growth and guide the orderly and cost effective provision of infrastructure at a rate that is consistent with forecasted growth, at the same time responding appropriately to market conditions. The plan indicates the sequence of growth and anticipated timing. The earliest staging years are adjacent to existing development and then extending from this point in a logical sequence based on what the city believes is the most logical and efficient pattern of growth. Figure 2-4 shows the development staging plan for the City.

The City of Forest Lake will assess market conditions and land capacity to determine when the next staging area will be opened for development. The staging plan cannot force development to occur but can be used as a tool to guide development appropriately. It should be clear that while there are legitimate reasons why cities should stage and time growth in an orderly and contiguous manner, there is nothing about adopting a staged growth plan that forces a private property owner to sell their land before they wish to do so.

Table 2-17 shows the approximate number of existing housing units and developed acres in each future land use category. Also shown are the number of planned housing units or jobs and the maximum acreage needed to accommodate those units or jobs within each decade. Cumulative development acreage for all developable land use categories is provided above in Table 2-13.

Figure 2-4 - Staging Map

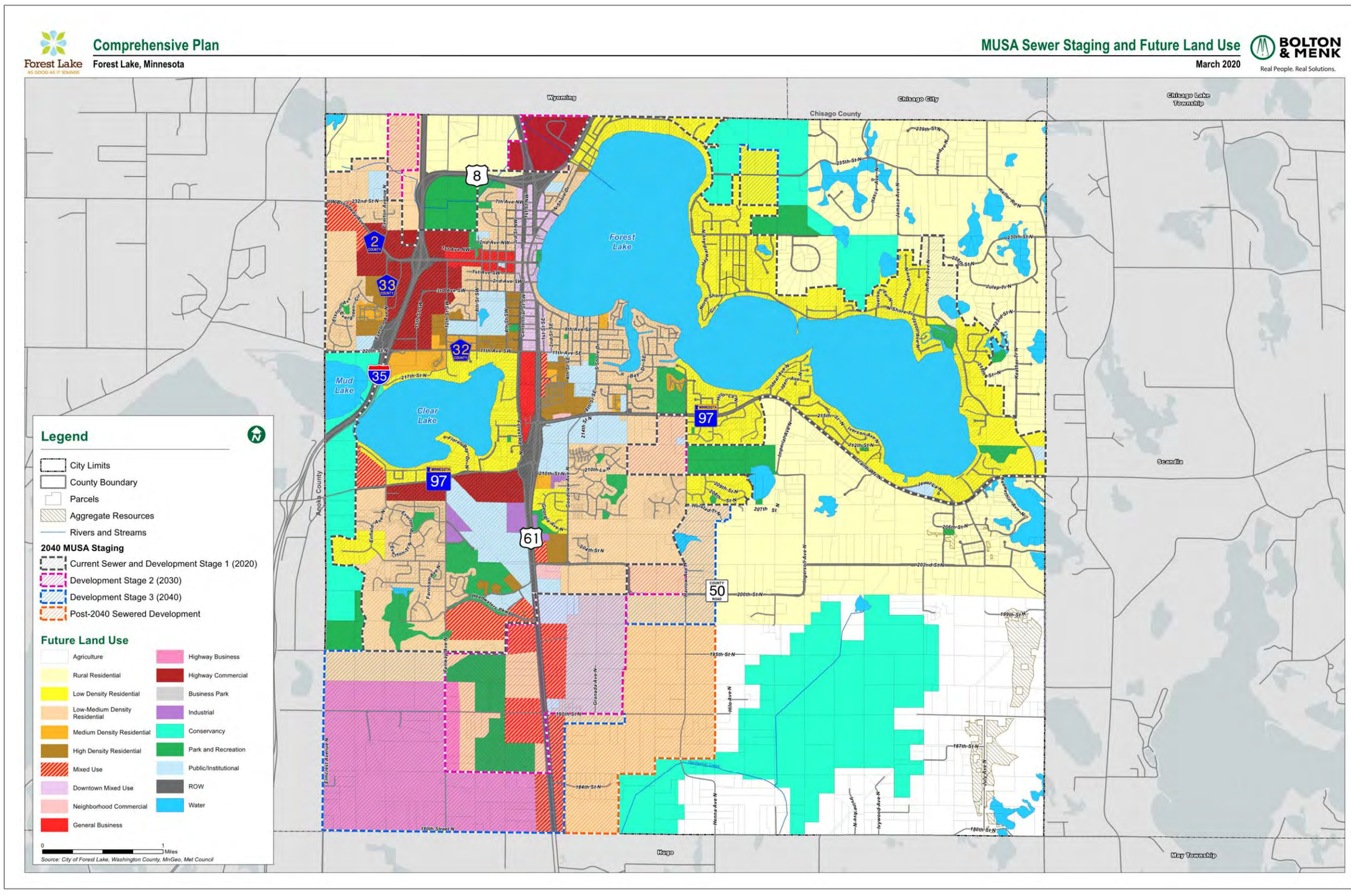


Table 2-17 – Future Land Use Units/Jobs/Acres

Within Urban Service Area	Planned Density Range Units/Acre		Existing/Developed (2016)		2016-2020		2021-2030		2031-2040	
	Min	Max	Units	Acres	Units	Acres	Units	Acres	Units	Acres
Residential Land Uses										
Low Density	1.5	4	1,909	1,507.1	105	70	167	111	171	114
Low-Medium Density	3	6	3,043	1,780.3	699	233.0	1,086	362.0	1,125	375
Medium Density	6	10	500	108	18	3.0	18	3.0	18	3
High Density	20	30	1,059	158.8	68	4.5	309	20.6	285	19
Mixed Use	10	15	66	131	50	5.0	320	64*	190	19
Downtown Mixed Use	20	30	814	109.4	102.	3.2	198	19.8*	100	5
Residential Subtotal	-	-	7,391	3,794.6	1,042	318.7	2,098	496.6	1,889	535
Average Units/Acre	-	-	1.9		3.3		4.2		3.5	

Commercial/Industrial Land Uses	Estimated Employment/Acre		Developed Acres	Jobs	Acres	Jobs	Acres	Jobs	Acres
Business Park	11	51	71.5	0	0	595	54.1	592	53.8
Downtown Mixed Use	18	78	109.4	30	1.65	22	1.2	4	0.2
General Business	14	62	83.2	81	5.77	19	1.36	5	0.4
Highway Business	14	62	315.3	0	0	216	15.4	440	31.4
Highway Commercial	14	62	416	140	10	64	4.6	7	0.5
Industrial	14	62	23	81	5.8	28	2	0	0
Mixed Use	14	62	131	294	21	160	11.4	87	5.9
Neighborhood Commercial	18	78	6	14	0.8	7	0.4	0	0
Commercial/Industrial Subtotal			1155.0	640.1	45.0	1110.5	50.5	1134.8	92.2

Public/Semi Public Land Use	-	Acres	Jobs	Acres	Jobs	Acres	Jobs	Acres
Institutional	-	391.1	81	5.7	25	1.8	0	0

Outside Urban Service Area	Density (Units/Acre)		Existing/Developed (2016)		2020		2030		2040	
	Min	Max	Units	Acres	Units	Acres	Units	Acres	Units	Acres
Rural Residential	0.16	0.2	538	1,843	50	313.6	101	628.5	95	595.4
Agriculture	0.05	0.1	124	657.8	0	0	0	0	0	0
Subtotal	-		662	2,501	50	313.6	101	628.5	95	595.4
Average Units/Acre	-		0.3		0.16		0.16		0.16	

Total	-		Units	Acres	Units/Jobs	Acres	Units/Jobs	Acres	Units/Jobs	Acres
	-		8,053	6,295.6	1,092 721	683.0	2,198 1,135.5	1,177.4	1,984 1,135	1222.6

Note: 50% of the Mixed Use and Downtown Mixed Use acres in the 2021-2030 decade are planned for residential units.

E. Natural Resources

Natural resources are beneficial to the social, environmental, and economic vitality of a community. To ensure their quality and benefits, it is essential to plan and manage natural resources and areas as we do residential and commercial areas.

The City of Forest Lake will promote, preserve and enhance the natural resources within the city and protect them from adverse effects occasioned by poorly sited development or incompatible activities by regulating land disturbances or development activities that would have an adverse and potentially irreversible impact on water quality and unique and fragile environmentally sensitive land; by minimizing conflicts and encouraging compatibility between land disturbing and development activities and water quality and environmentally sensitive land; and by requiring detailed review standards and procedures for land disturbing or development activities proposed for such areas, thereby achieving a balance between urban growth and development and protection of water quality and natural areas. Water resources are detailed in Chapter VII.

Wildlife Corridor

The Minnesota DNR has identified a regional greenway corridor in Forest Lake as part of the Metro Wildlife Corridors project (a 12-county metro area). This corridor is specifically designed to incorporate:

- High quality natural areas such as those identified in the Natural Resource Inventory or mapped by the MnDNR,
- Natural corridors such as stream courses, and
- Areas that connect these features.

MnDNR has worked on conservation easements near Hardwood Creek related to the regional corridor project. The City of Forest Lake supports the preservation of natural and open spaces in the southeastern quadrant of the City and will continue to work with MnDNR to identify corridor opportunities.

As much as possible, development within the greenway corridor, once formally adopted, should use conservation design strategies, conservation easements, park dedication, parcel evaluation, and the strategic siting of open space and natural areas parks to develop and improve habitat quality and connectivity within the greenways. Strategies to avoid fragmentation of existing natural areas are especially important for maintaining ecological function of the natural areas.

Woodland Preservation

The City's woodland preservation ordinance acknowledges the benefits and amenities trees offer to the community and acknowledges that trees are part of a more complex, interrelated system. The ordinance focuses on protection of quality wooded areas rather than of individual trees. To preserve wooded areas in the City, each development on property three acres or larger is required to submit a Woodland Preservation Plan, which is reviewed by a qualified professional to assess the best possible site plan to preserve high quality tree stands. The regulation also provides guidance for permitted tree removal, mitigation procedures, and tree replacement provisions.

Aggregate Resources: The Metropolitan Council requires cities to identify the location of aggregate resources within the community based on the Minnesota Geological survey within the Comprehensive Plan. Small amounts of aggregate resources are located in the southeastern quadrant of Forest Lake as displayed on Figure 2-3, Future Land Use. These resources are located in agricultural and rural, large-lot areas and would not be considered a potential future conflict with the limited resource areas identified. The City has a mining ordinance regulating use of any such resources.

F. Special Resource Protection

The Minnesota State Historic Preservation Office (SHPO) maintains two databases, one pertaining to historical architecture and one noting archeological discoveries of state and local significance. The SHPO advocates for preservation of Minnesota's historic and archaeological resources and identifies, evaluates, registers and protects the state's historic properties. One archaeological site, Simmons Point, was identified in Forest Lake. This is a piece of land along the southern shore of Forest Lake. There is currently a single family home on this site. In addition, the Northern Pacific Railroad was noted as a significant site within the City. The railroad has since been abandoned, but the path of the rail line has been preserved by the Hardwood Creek Regional Trail, running parallel along Hwy 61.

There are only two parcels in Forest Lake that are enrolled in the Agriculture Preserve program. These parcels are part of the Agricultural Preserve Overlay District, shown in the City's Official Zoning Map (See Chapter VIII).

G. Resilience

Resiliency in planning and development helps to ensure the prosperity, livability, equity, and sustainability of a community for future generations. Resilience planning focuses on all aspects of community, ensuring the economy, the environment, and social/living conditions are vibrant and upheld through adversity.

1. Solar

The Metropolitan Land Planning Act (Minnesota Statues 473.859, Subd. 2) requires local comprehensive plans to include for the protection and development of access to direct sunlight for solar energy systems. The purpose of this legislation is to prevent solar collectors from being shaded by adjacent structures or vegetation and to ensure that development decisions do not preclude the possible future development and use of solar energy systems. To ensure the availability of solar access, the City of Forest Lake will, whenever possible, protect access to direct sunlight for solar energy systems on principle structures. The City of Forest Lake will consider solar access to direct sunlight in the review of site plans and planning decisions. The following excerpts are solar provisions and considerations from the current zoning ordinance.

> *Zoning Code 153.036 (Variances), section 2: Inadequate access to direct sunlight for solar energy systems may be considered a practical difficulty. Variances shall be granted for earth sheltered construction, as defined in M.S. § 216C.06, Subd. 14, when in harmony with this chapter.*
>
> *Zoning Code 153.307 (Solar Energy System Requirements): Solar energy systems in accordance with the standards in this section are allowed as a permitted accessory use in all zoning districts.*

According to the Metropolitan Council, Forest Lake has the following solar potential, detailed in Table 2-18. These calculations assume a 10% conversion efficiency and current (2016/17) solar technologies. The average home in Minnesota consumes between 9 and 10 Mwh/year (Solar Energy Industries Association; US Energy Information Administration). Using only Forest Lake's rooftop generation potential, between 10,746 and 11,940 homes could be powered by rooftop-generated solar energy annually, which is more than the current number of homes in Forest Lake.

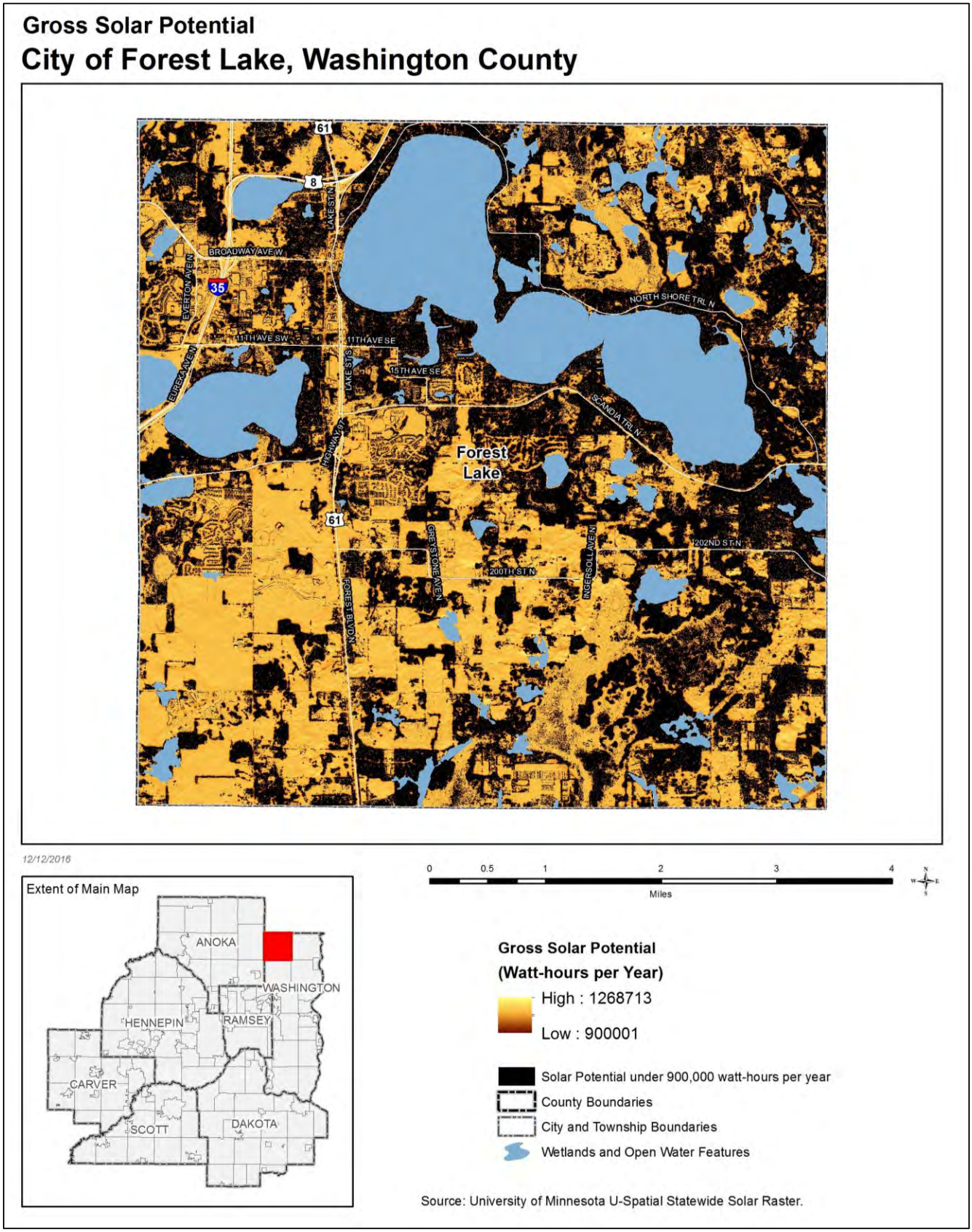
Table 2-18 – Solar Resource Calculations

Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr^2)	Rooftop Generation Potential (Mwh/yr^2)
47,098,846	1,074,618	4,709,884	107,461

Source: Metropolitan Council

These calculations done by the Metropolitan Council are not necessarily an absolute number. Due to limitations in data and maps, some areas may be left out from gross and rooftop potential. These numbers should be interpreted as a baseline; if more accurate numbers are desired, the Metropolitan Council advise a more extensive, community-specific analysis of solar development potential for both solar gardens and rooftop or accessory use installations. On average, communities would be able to expect between 30% and 60% of total energy used to be able to be generated by solar rooftops. The rooftop potential estimated here does not consider ownership, financial barriers, or building-specific structural limitations.

Figure 2-5 - Solar Potential Map



2. Minnesota GreenStep Cities

In June 2014, the Mayor and City Council approved a resolution to make Forest Lake a GreenStep City through the MPCA and League of Minnesota Cities' program. As of 2017, the City has implemented three actions for two best management practices: land use and environmental management. Forest Lake is currently a Step 1 City.

- **Land Use** – The City has implemented one action regarding mixed land uses. Forest Lake has earned three stars for locating a government facility, the Hardwood Creek Library/Washington County Service Center, near employment and residential centers. There are about 150 jobs located within a quarter mile of the government center, and there are three high density residential units close to the government center. It is also located close to Hardwood Creek Regional Trail and is accessible by transit. The close proximity to jobs, housing, multi-modal trails, and transit helps make the government center accessible.
- **Environmental Management** – Forest Lake has implemented two actions for this best management practice. The City earned two stars for adopting a woodland preservation ordinance. This ordinance requires a woodland preservation plan to be developed when development or subdivision impacts three or more acres of land or the site contains a significant amount of woodlands. This ordinance also applies to all properties within the City's shoreland overlay district.

  Forest Lake also earned three stars for parks, trails, and greenspace within the City. About 97% of Forest Lake residents live within 0.5 miles of a park or public greenspace, and there are almost 1.2 parks per 1,000 residents located in Forest Lake.

As Forest Lake plans for the future, it will continue to consider GreenStep City Best Management Practices as they relate to the goals and objectives of this comprehensive plan.

III. ECONOMIC COMPETITIVENESS

A. Introduction

The City of Forest Lake and the Forest Lake Economic Development Authority (EDA) have made a conscious decision to identify a connection between economic development and quality of life. By working together, the City, the EDA, and the community can help to maintain a strong economy by creating and retaining desirable jobs, which provide a good standard of living for individuals. Increased personal income and wealth can increase the tax base so as to allow the City of Forest Lake to provide the level of services residents expect.

Additionally, responses to the 2017 Community Survey identified economic development as a key focus for the City of Forest Lake. Commercial and retail growth was identified as the number one priority for the City over the next 20 years. The lack of well-paying jobs in Forest Lake was also noted as one of the top three challenges facing the City. When survey respondents were asked about their future vision for the City of Forest Lake, the two most common ideas or themes were commercial/economic development and bolstering or supporting the Downtown as a destination. This signals the desire of residents to develop a range of employment opportunities in the City that provide higher wages. It also suggests that residents want to maintain and expand the City of Forest Lake's standing as a regional center or "hub", developing a strong, economically diverse downtown and/or commercial corridors that supports the needs of residents and attracts visitors from around the region.

In preparing this chapter, the City of Forest Lake recognizes the Great Recession impacted data collected in 2010. In an effort to gauge the city's post-recession recovery and to provide data for a non-recession year, the most recent data estimates were incorporated whenever possible. This was done as both a way to estimate economic recovery since the recession and to provide a non-recession baseline data moving forward.

B. Economic Competitiveness Goals and Objectives

Goal: *Enhance the image of Forest Lake as a good place to conduct business.*

Objectives:

- Cooperate with the Chamber of Commerce, Community Development and other merchant and civic organizations to stimulate and maintain commercial interest in the downtown and the community.
- Preserve and promote Forest Lake's traditional small town center, natural environment, and outdoor recreation activities.
- Participate in programs and activities to attract visitors to Forest Lake such as historic preservation, recreation development, natural resource preservation, community festivals, and transportation enhancements.
- Allow home businesses, provided that they are accessory to the residential use, adhere to the Zoning Ordinance, and do not impact nearby properties.

Goal: *Delineate and improve the function and appearance of all business districts*.

Objectives:

- Rehabilitate, or where necessary, redevelop substandard and/or functionally obsolete commercial development through private means or, if necessary, public assistance.
- Develop design requirements for all commercial and industrial districts within the Zoning Ordinance.
- Develop a redevelopment plan for the Hwy 61 corridor incorporating the mixed use land use designation and Zoning Ordinance.

- Encourage business owners to remodel, rehabilitate, and enhance building exteriors when feasible.
- Establish design requirements for the transitional use of existing detached dwellings in the downtown and along the Broadway corridor.
- Cultivate an identity and overall vision for Downtown Forest Lake.
- Increase the vitality of the individual businesses and commercial areas to improve the appearance of business sites.
- Encourage planned mixed-use residential/commercial developments in the downtown area.
- Develop a downtown master parking and implementation plan, allowing joint utilization to conserve land.

Goal: *Develop a marketing plan and strategy aimed at promoting a variety of business opportunities and the identity of Forest Lake.*

Objectives:

- Provide an adequate amount of land planned and zoned for commercial and industrial.
- Leverage educational institutions, industries, and business organizations to promote new businesses and expansion of existing.
- Attract and encourage new light industrial, office-industrial, high-tech, and professional services while maintaining and expanding existing businesses.
- Promote the development of the Business Park for corporate campus, office, technology, or medical related services.
- Solicit businesses that fill voids in the current range of retail and business services offered in Forest Lake.
- Invest in public improvement projects and actively enforce development controls within the older commercial/industrial areas to the City.

C. Historical and Projected Employment

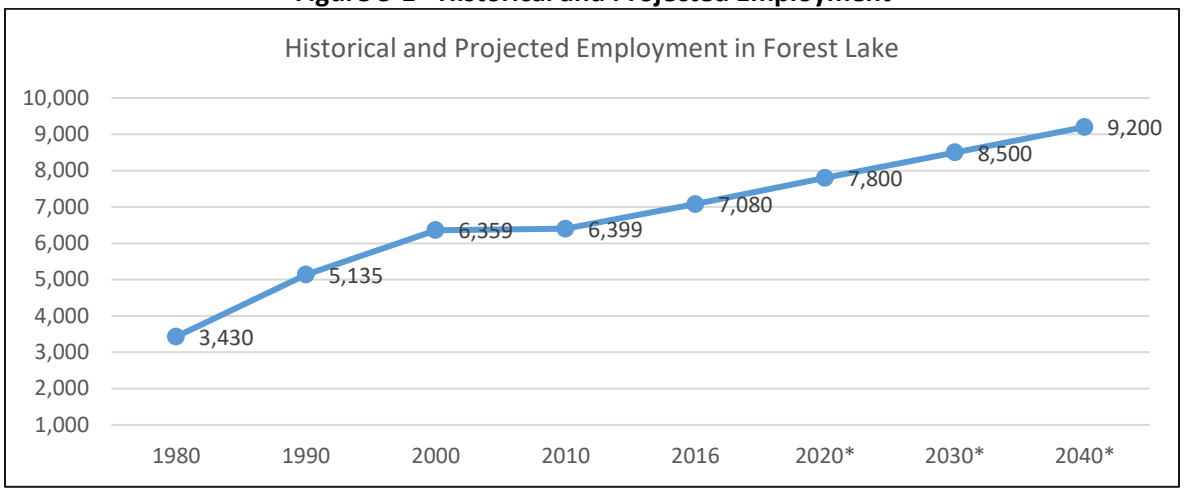
The number of jobs per household is a rough metric that can help determine the number of residents who commute outside the City for work and the share of economic activity generated by the City's population being captured. Table 3-1 shows that Forest Lake has slightly less than one job per household. Forecasted employment suggests a more gradual pace growth averaging 1-2% annually. With the number of households in Forest Lake anticipated to outpace job growth, the ratio of jobs to households is expected to continue to decrease in the future. For comparison, the jobs/household ratios for Washington County and the Seven-County Metropolitan Area are also provided in Table 3-1. The fluctuations Forest Lake experienced in the jobs/household ratio are also observed at both at the county and state levels with the City's ratio being higher than the county's ratio.

Table 3-1 – Ratio of Jobs per Household in Forest Lake

	1980	1990	2000	2010	2016*	2020**	2030**	2040**
Households	3,311	4,424	5,433	7,441	7,652	8,600	10,500	12,300
Employment	3,430	5,135	6,359	6,399	7,080	7,800	8,500	9,200
Jobs/Households	1.04	1.16	1.17	0.86	0.93	0.91	0.81	0.75
Washington County Jobs/Households Ratio	0.80	0.85	0.95	0.82	0.88	0.87	0.84	0.81
7-County Metropolitan Area Jobs/Households Ratio	1.44	1.45	1.57	1.38	1.43	1.45	1.36	1.33

**Metropolitan Council estimate* ***Metropolitan Council forecast*

Figure 3-1 - Historical and Projected Employment



Source: Metropolitan Council

D. Employment Data

1. Employment by Industry

Table 3-2 shows data on the number of jobs by industry in Forest Lake in 2010 and 2015. The most common industry worked in the City is retail trade, followed by educational services and accommodation and food services. These three industries account for about 54% of all jobs located in the City of Forest Lake. The Forest Lake School District (District 831) office is located in the city, accounting for the prevalence of educational service jobs. About 40% of all jobs in Forest Lake are in retail trade and accommodation and food service industries. These industries typically have lower wages.

Table 3-2 - Employment by Industry in Forest Lake

	2010		2015	
	Number	Percent	Number	Percent
Accommodation and Food Services	940	15%	1,006	14%
Administrative and Waste Services	195	3%	263	4%
All Other Industries	538	8%	182	3%
Arts, Entertainment, and Recreation	94	1%	133	2%
Construction	0	0%	378	5%
Educational Services	924	14%	975	14%
Finance and Insurance	143	2%	183	3%
Health Care and Social Assistance	592	9%	619	9%
Information	46	1%	37	1%
Management of Companies and Enterprises	0	0%	0	0%
Manufacturing	354	5%	551	8%
Other Services, Ex. Public Admin	341	5%	372	5%
Public Administration	111	2%	106	2%
Real Estate and Rental and Leasing	135	2%	135	2%
Retail Trade	1655	26%	1,802	26%
Transportation and Warehousing	381	6%	195	3%
Wholesale Trade	0	0%	70	1%
Total	6,449	100%	7,007	100%

Source: Metropolitan Council Tabulation of American Community Survey data. 2000 data was not used due to changes in industry categorization between the 2000 and 2010 Census

Table 3-3 shows the employment of Forest Lake residents by industry in 2000, 2010, and 2015. Employment in arts, entertainment, and recreation, accommodation and food service industries experienced the most growth between 2000 and 2015, followed by educational services, health care, and social assistance. Slightly fewer residents worked in finance, insurance, real estate, and rental/leasing in 2015 than in 2000.

The most worked industries by Forest Lake residents in 2015 were educational services, health care, and social assistance (25%), manufacturing (15%), retail trade (11%), and arts, entertainment, and recreation, accommodation and food services (11%). Many of these industries tend to have lower average wages.

Table 3-3 - Employment of Residents by Industry

	2000*		2010		2015	
	Number	Percent	Number	Percent	Number	Percent
Agriculture, forestry, fishing, hunting, mining	13	0%	121	1%	65	1%
Construction	315	9%	853	9%	727	7%
Manufacturing	565	16%	1,702	18%	1,491	15%
Wholesale Trade	118	3%	279	3%	196	2%
Retail Trade	447	13%	960	10%	1,144	11%
Transportation and warehousing, Utilities	186	5%	434	5%	489	5%
Information	116	3%	136	1%	123	1%
Finance, Insurance, Real Estate, and Rental/Leasing	327	9%	800	9%	500	5%
Professional, Scientific, and management and administrative and waste management services	269	8%	652	7%	876	9%
Educational services, health care, and social assistance	659	19%	1,850	20%	2,567	25%
Arts, entertainment, and recreation, accommodation and food service	215	6%	746	8%	1,100	11%
Other services, except public administration	169	5%	401	4%	458	5%
Public Administration	140	4%	355	4%	340	3%
Total	3,539		9,289		10,076	

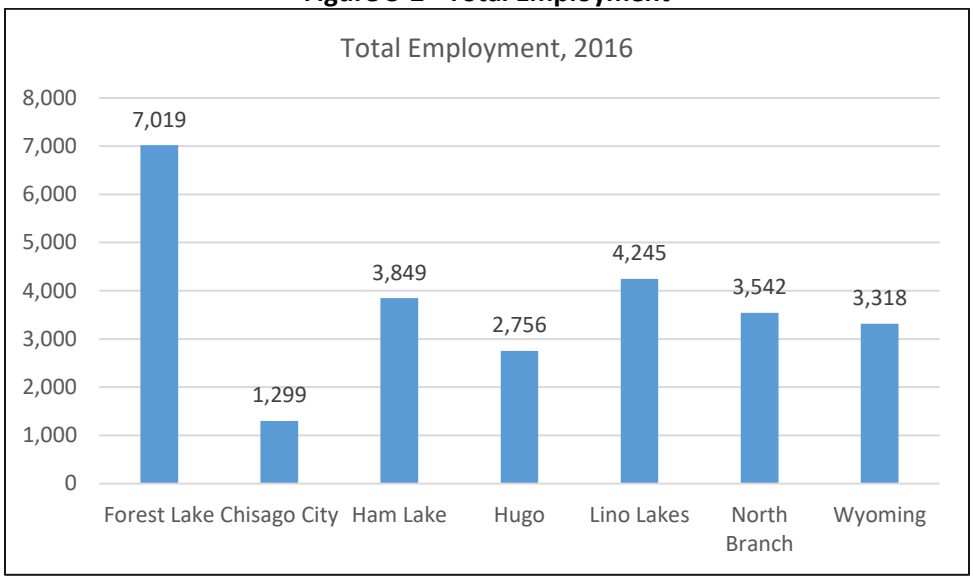
Source: US Census, 2000 and American Community Survey, 2006-2010 and 2011-2015
**2000 Data only includes the City of Forest Lake, before the city and township merged.*

Comparing the industries worked by Forest Lake residents and employment by industry within Forest Lake, there are some notable gaps between the skills of residents and the types of jobs available in the City. About 15% of Forest Lake residents work in manufacturing industries, but these types of jobs account for about 8% of jobs in the City. Likewise, 11% of residents work in arts, entertainment, and recreation, which accounts for only 2% of jobs within the city. There may also be gaps in professional, scientific, and management jobs in the City. To access these industries, Forest Lake residents must currently commute to other municipalities (discussed more in Section 4).

2. Employment Establishments

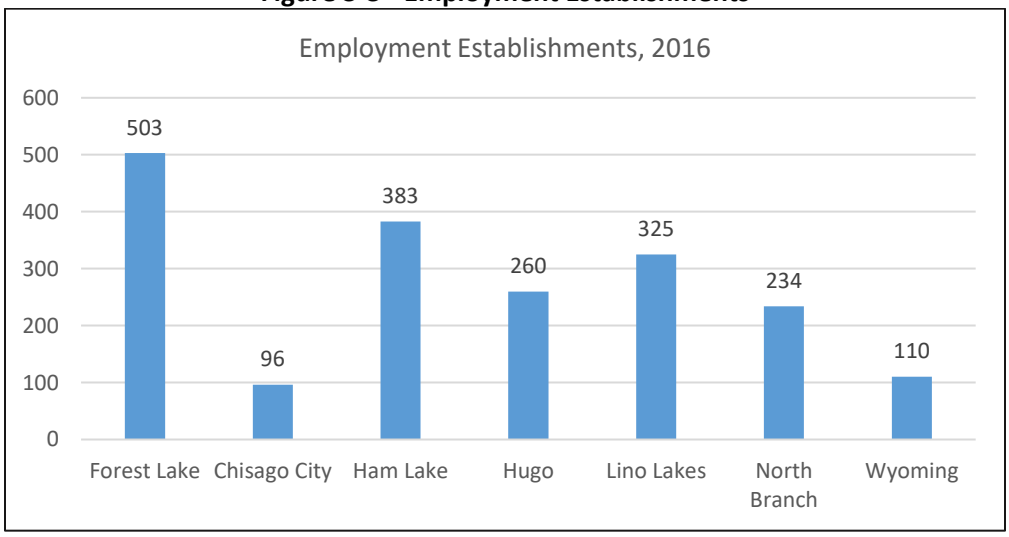
Compared to neighboring communities, Forest Lake has the highest number of employees and the most employment establishments. There are approximately 7,000 jobs in the City of Forest Lake and roughly 500 employment establishments, shown in the following figures.

Figure 3-2 - Total Employment



Source: Minnesota Department of Employment and Economic Development

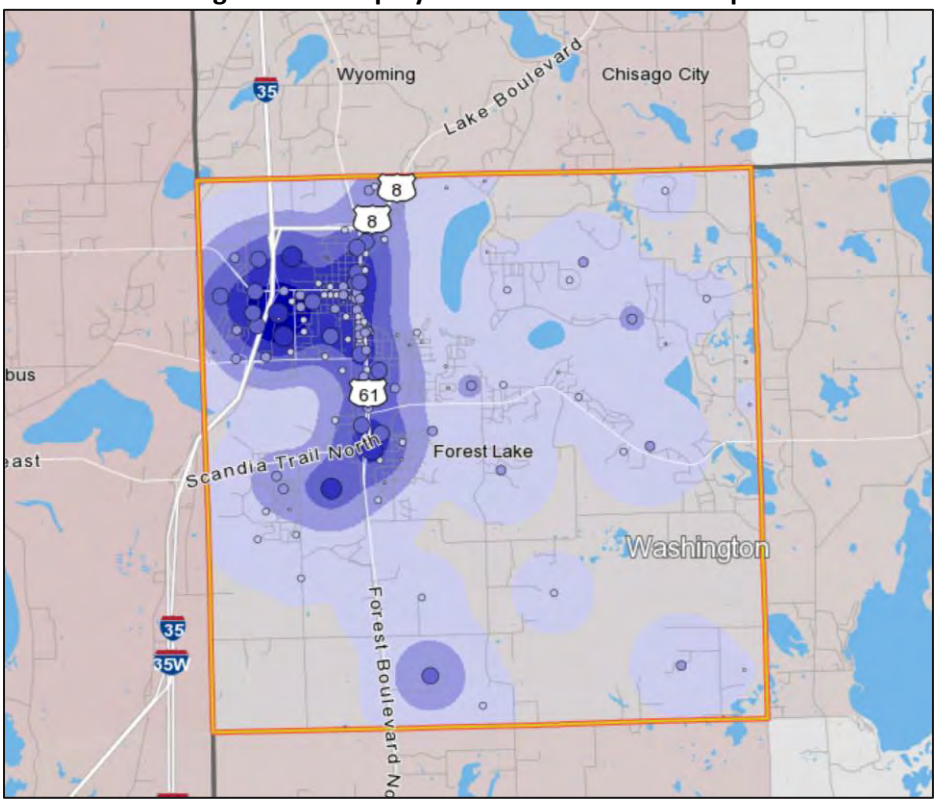
Figure 3-3 - Employment Establishments



Source: Minnesota Department of Employment and Economic Development

Figure 3-4 shows the employment concentrations within Forest Lake. The vast majority of employment opportunities in Forest Lake are located between Broadway Avenue and County Road 32/11th Avenue SW. In the 2017 Community Survey, most respondents (about 45%) expressed desire to expand this downtown area. This can be achieved either through infill development or expanding downtown zoning designations, which has been proposed in this comprehensive plan update (See Chapter II, Figure 2-3). There is also a small cluster of employment opportunities surrounding the Highway 97 and Highway 61 intersection.

Figure 3-4 - Employment Concentrations Map

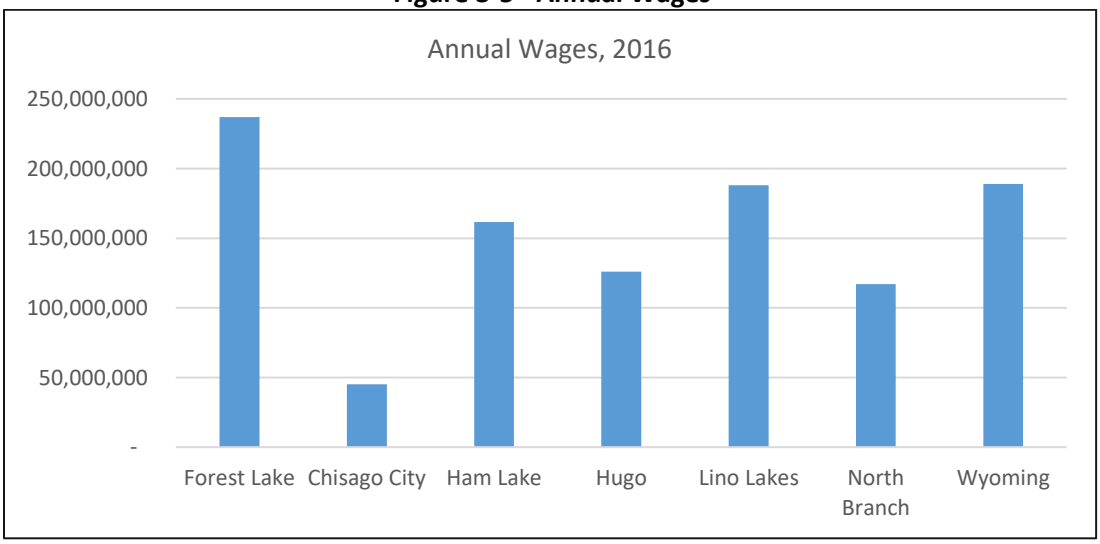


Source: US Census, On the Map

3. Income

With the large number of employment establishments and total employees, it follows that Forest Lake generates the highest annual total wages, compared to neighboring communities, with an annual payroll nearly $237 million. This is well above the total annual wages for neighboring communities. Total wages can influence the size and variety of shopping and services available in the city, as well as residential home values.

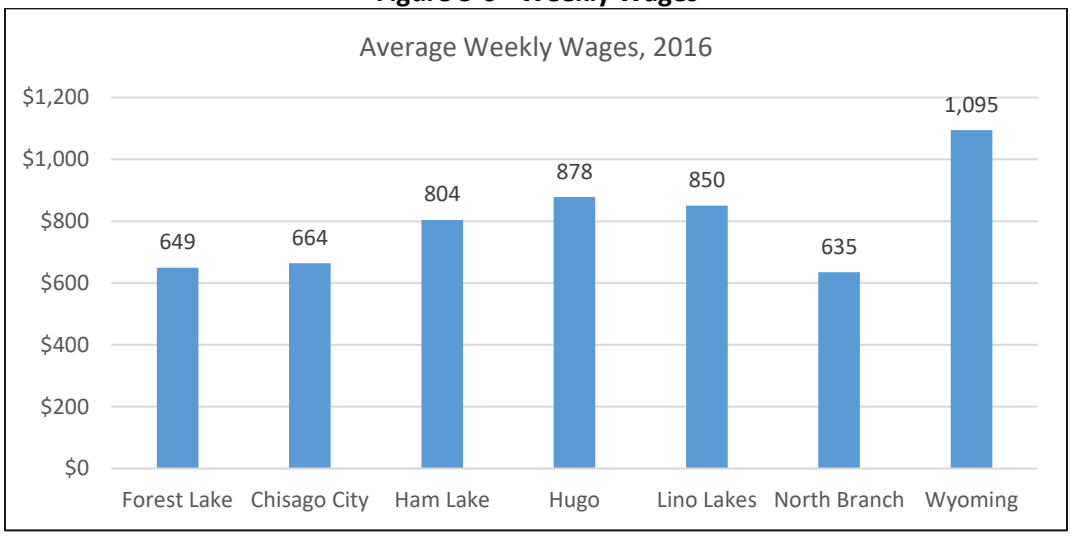
Figure 3-5 - Annual Wages



Source: Minnesota Department of Employment and Economic Development

While Forest Lake has the highest annual payroll, the City also has one of the lowest average weekly wages compared to neighboring communities. On average, employees in Forest Lake earn $650 per week. Average weekly wage attempts to describe "job quality," as higher average weekly wages typically support higher housing values and leads to more discretionary income and a demand for services and goods. Conversely, lower average weekly wages can lead to housing cost burden if there are not enough units affordable to lower wage workers. High annual wages and low average weekly wages indicate that employment in Forest Lake is predominantly in lower wage jobs.

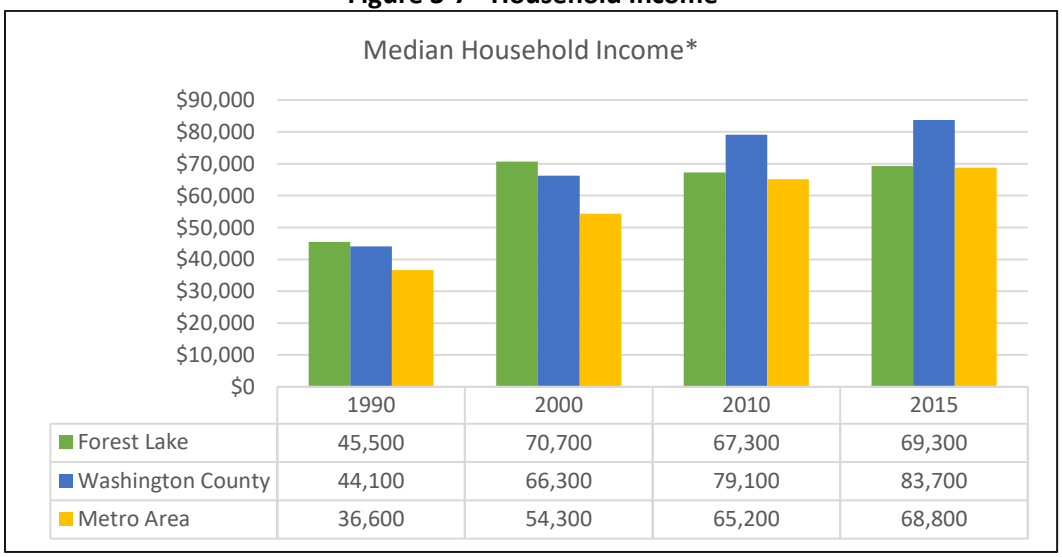
Figure 3-6 - Weekly Wages



Source: Minnesota Department of Employment and Economic Development

Median household incomes in Forest Lake have slightly decreased since 2000. In both 1990 and 2000, Forest Lake had higher median household incomes than the County and Twin Cities Metro Area averages. However, median household incomes in Forest Lake have not kept pace with the Washington County average; in both 2010 and 2015, the County average was higher than Forest Lake's median household income, which was closer to the median household income for the whole Twin Cities Metro Area.

Figure 3-7 - Household Income



	1990	2000	2010	2015
Forest Lake	45,500	70,700	67,300	69,300
Washington County	44,100	66,300	79,100	83,700
Metro Area	36,600	54,300	65,200	68,800

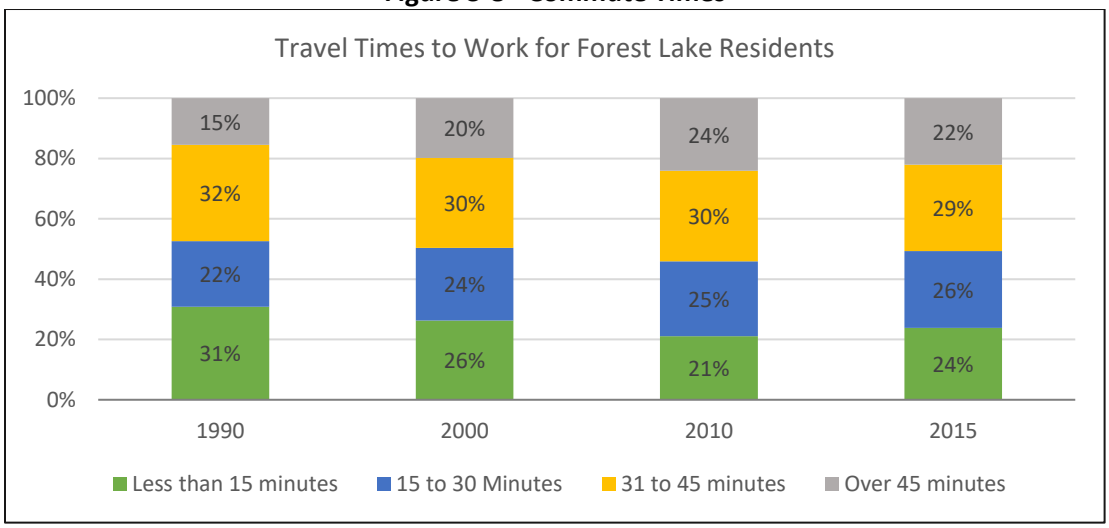
**Not adjusted for inflation. Source: Metropolitan Council, ACS 2011-2015*

4. Commuting

Figure 3-8 shows the commute times of Forest Lake residents. Since 1990, there has been a gradual decrease in the percentage of residents commuting 15 minutes or less. At the same time, the percentage of residents commuting 15-30 minutes and more than 45 minutes has increased. This indicates that residents are commuting longer distances to work outside the community. Data for 2015 suggest commutes, on average, are becoming shorter, with more residents commuting 30 minutes or less in 2015 than in 2010. Since the recent recession limited economic and employment opportunities, residents may have needed to commute greater distances to find employment. The decreased commute times noted in 2015 may signal more job opportunities in and around Forest Lake than were available in 2010.

Since 2000, the average commute time for Forest Lake residents has remained constant at approximately 29 minutes. In contrast, the average commute time for Washington County has been gradually increasing since 1990, reaching approximately 26 minutes in 2015.

Figure 3-8 - Commute Times



Source: Metropolitan Council Tabulation of US Census and American Community Survey Data

Table 3-4 shows the commuting methods for Forest Lake residents. Most residents drive alone. About 10% of Forest Lake residents carpool to work, which has decreased since 2000. The percentage of residents working at home has increased in more recent years, with 6% of residents working from home in 2015. In comparison, about 8% of Washington County residents carpool to work and another 5% work from home.

Table 3-4 - Commuting Methods of Forest Lake Residents

	2000		2010		2015	
	Number	Percent	Number	Percent	Number	Percent
Drove Alone	4,960	78%	6,789	76%	7,965	80%
Carpooled	947	15%	1,384	16%	1,004	10%
Public Transit	140	2%	196	2%	169	2%
Walk	46	1%	121	1%	153	2%
Other Means	31	0%	47	1%	128	1%
Work at Home	235	4%	349	4%	577	6%
Total	6,359	100%	8,886	100%	9,996	100%
Mean Travel Time to Work (in minutes)	29.2		29.7		29.6	

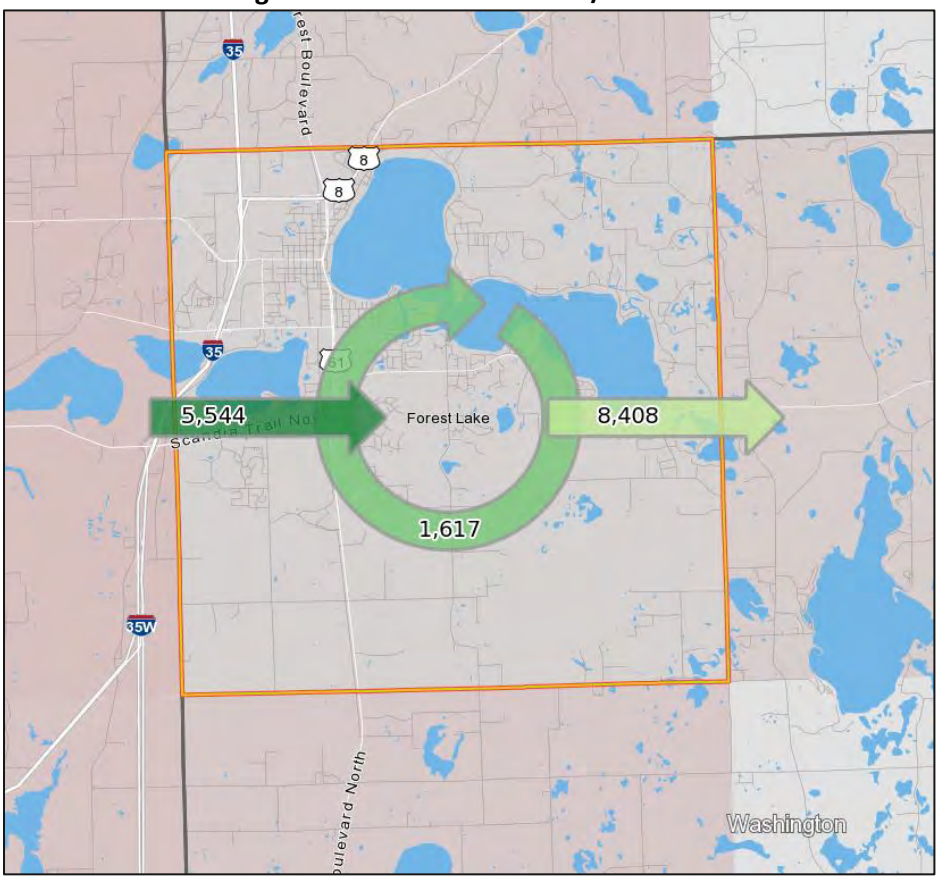
Source: Metropolitan Council Tabulation of US Census and American Community Survey Data

Table 3-5 lists the top 10 commuting destinations for Forest Lake residents in 2015. About 53% of all Forest Lake residents work in one of the 10 listed cities. About 16% of Forest Lake residents both live and work in Forest Lake; Figure 3-9 shows the inflow of workers into Forest Lake, the outflow of workers from Forest Lake, and the workforce whom live and work in Forest Lake. In comparison, about 5% of Hugo and Lino Lakes residents both live and work in their home cities, and 17% of North Branch residents also work in their home city.

Table 3-5 - Commuting Destinations of Forest Lake Residents		
Location	**Number of Employed Residents**	**Percent of Employed Residents**
Forest Lake	1,617	16%
St. Paul	1,142	11%
Minneapolis	1,003	10%
Wyoming	313	3%
Blaine	295	3%
White Bear Lake	244	2%
Roseville	230	2%
Bloomington	192	2%
Maplewood	191	2%
Lino Lakes	178	2%

Source: Metropolitan Council

Figure 3-9 - Workforce Inflow/Outflow



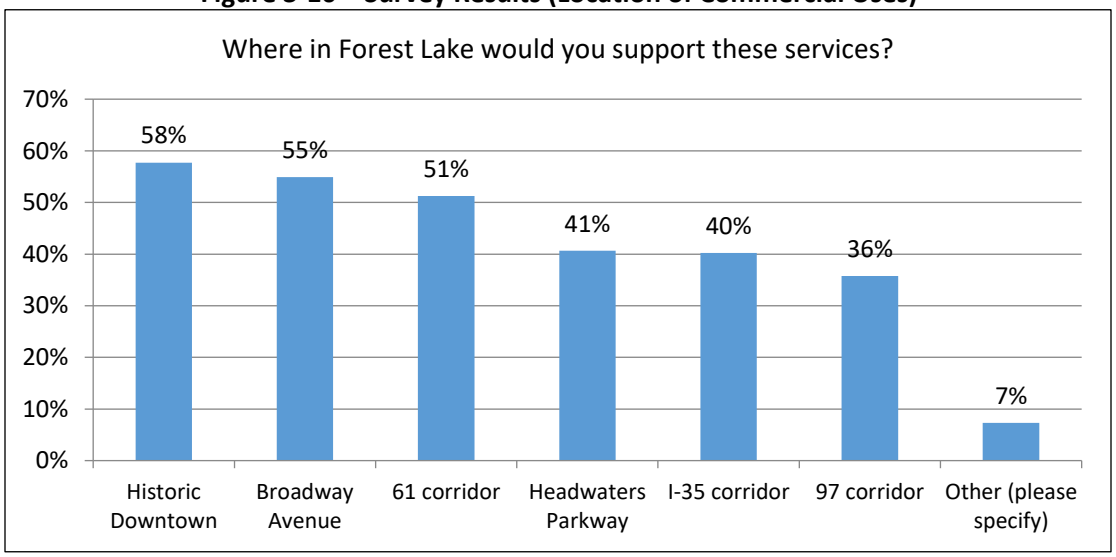
Source: US Census, On the Map

5. Community Survey Results

As part of the 2017 Community Survey, respondents were asked what types of businesses they would support in Forest Lake. Appendix A provides detailed survey responses. The most frequently requested business was a grocery store. Restaurants were also a popular request, though the type of dining desired varied (fast-food, fast-casual, bar, fine dining, etc.).

The survey respondents were also asked where they would support desired businesses and services in the City. Most respondents identified the Downtown area, including Broadway Avenue, as the desired location for businesses and services. There was also a desire to extend businesses and services along the Hwy 61 Corridor. This stretch of road is fairly developed in Downtown Forest Lake. As a connector and collector in the City, Highway 61 has the visibility and traffic potential to support business development. Development along Hwy 61 would also support projected population and household growth; as shown on the Future Land Use map (See Chapter II), most residential growth is expected to occur east of Hwy 61.

Figure 3-10 – Survey Results (Location of Commercial Uses)



As the City of Forest Lake and the EDA examine policies as part of this Comprehensive Plan update, it is important to gauge citizen support for policies and economic development tools. Respondents of the 2017 Community Survey were asked about the types of tools the city and the EDA should focus on to support economic development. Full survey results are provided in Appendix A. The majority of respondents said the City should support local business development. As this type of economic development can take many forms, city staff will work with the EDA and local businesses to identify opportunities and challenges to establishing and developing a business within Forest Lake.

City promotion of economic development can take many forms and one approach the EDA has taken is to conduct an informal review of underutilized parcels within the city. This initial review revealed opportunities in areas where redevelopment could allow more intensive retail development such as the Lakes Shopping Center, the Wells Fargo site on South Lake Street, the east side of the first block of North Lake Street, the properties with legal nonconforming single-family homes on West Broadway, the development of outlots in current parking areas of large retailers on 12th Street SW, and the current VFW site. City staff will continue to work with the EDA and local businesses to identify opportunities and challenges to retaining and establishing businesses, as well as spurring economic development within Forest Lake.

IV. HOUSING

A. Housing Goals and Objectives

Goal: *Improve and maintain existing housing units.*

Objectives:

- Develop a housing maintenance code
- Consider City-funded activities aimed at rehabilitation or acquisition of existing properties for maintenance.
- Budget City improvements to streets, sidewalks, trails, parks, street lighting, and other projects to improve neighborhood aesthetics and maintain property values.

Goal: *Increase availability of new affordable housing.*

Objectives:

- Allow the conversion of existing public and commercial buildings to affordable housing units through zoning regulations.
- Zone for high-density and mixed-use housing opportunities across all areas of the City where municipal services are available.
- Encourage participation by the HRA and/or EDA to be active in supporting new affordable housing opportunities and development programs.

Goal: *Provide for and allow a variety of housing types and styles to fit the needs of residents.*

Objectives:

- Allow creative use of site planning, building design, and flexible development of infill lots to increase density and provide greater housing opportunities.
- Allow development of separate accessory units and conversion of existing single-family to multi-family structures (duplex or more) where appropriate
- Encourage residential buildings to be designed for accessibility in order to meet the needs of current and future residents.
- Expand owner-occupied senior housing options.

B. Existing Housing

As of 2016, Forest Lake contained approximately 8,100 housing units, 79% of which were single family and 19% were multi-family. Most housing units in Forest Lake are owner occupied (75%). About 67% of homes in Forest Lake are affordable to incomes below 80% of the Area Median Income (AMI). Roughly 20% of households with incomes between 31% and 50% AMI in Forest Lake experience cost-burden. This gap between affordable units and cost burdened households may indicate a shortage of units affordable to households with lower incomes. These and other housing conditions are outlined in Tables 4-1 and 4-2.

Table 4-1 – Housing Conditions		
Housing Units	**Number of Units**	**Percent of Total**
Total Housing Units	8,100	100%
– Ownership	6,075	75%
– Rental	2,025	25%
Single Family Homes	6,357	79%
Multi-family Homes	1,615	19%
Manufactured Homes	128	2%
Publicly Subsidized		
Total	434	5%
– Senior Housing	263	3%
– Housing for People with Disabilities	0	0%
– All Other Publicly Subsidized Units	171	2%
Affordable Housing		
Housing Units affordable to households with incomes at or below 30% Area Median Income (AMI)	279	3.4%
Housing Units affordable to households with incomes between 31 and 50% Area Median Income (AMI)	1,868	23%
Housing Units affordable to households with incomes between 51 and 80% Area Median Income (AMI)	3,305	41%

Source: Metropolitan Council

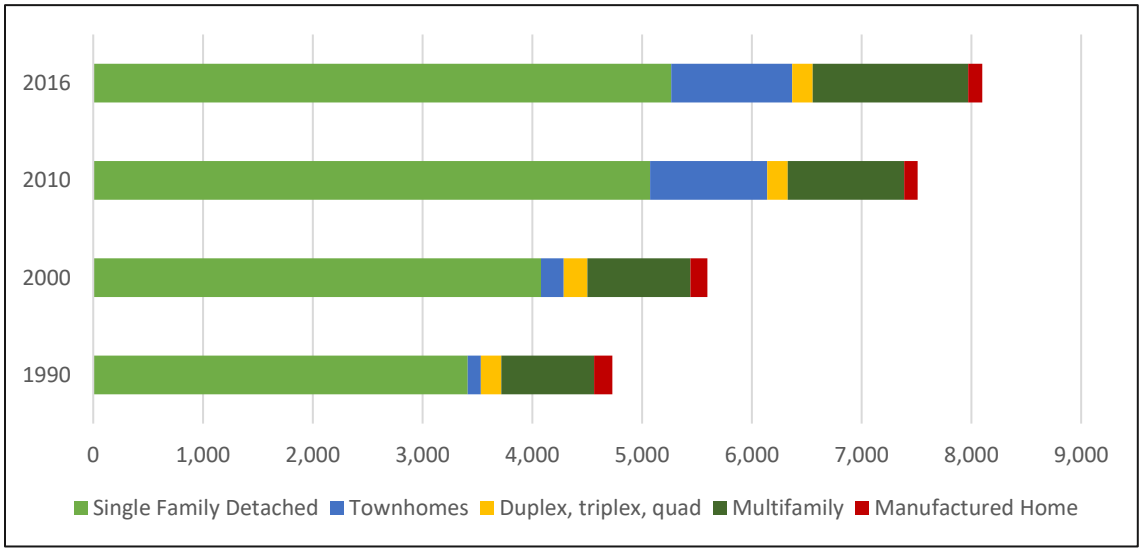
Table 4-2 - Households Experiencing Cost Burden		
	Number of Households	**Percent of Total**
Existing households experiencing housing cost burden with incomes below 30% AMI	407	5%
Existing households experiencing housing cost burden with incomes between 31 and 50% AMI	844	10%
Existing households experiencing housing cost burden with incomes between 51 and 80% AMI	398	5%

Source: Metropolitan Council

1. Housing Type and Tenure

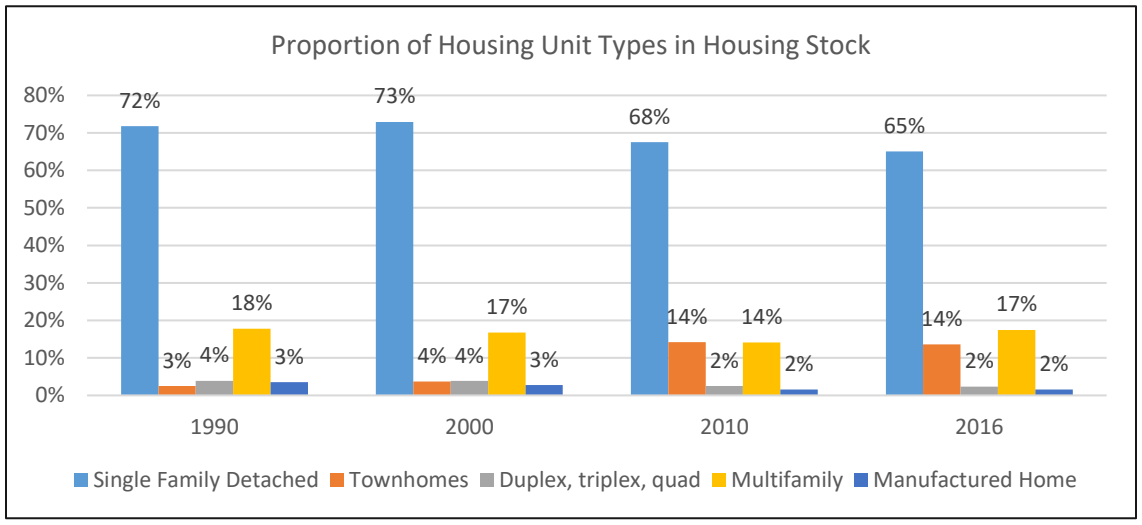
Most housing units (65%) in Forest Lake are single family, detached homes, shown in Figure 4-1 below. Figure 4-2 shows the proportion of housing types in the City since 1990. The City's proportion of multifamily housing (five or more units) has remained around 17% since 1990. The proportion of Forest Lake's housing stock represented by townhomes has increased 10% since 1990; in 2016, about 14% of housing units in the City were townhomes. The proportion of duplexes, triplexes, and quads has decreased since 1990, making up about 2% of Forest Lake's total housing stock in 2016. Overall, development of multifamily housing has kept pace with single family detached housing development. There has been almost no change in the number of smaller multifamily housing units like duplexes or triplexes since 1990.

Figure 4-1 - Housing Types in Forest Lake



Source: Metropolitan Council, 2016

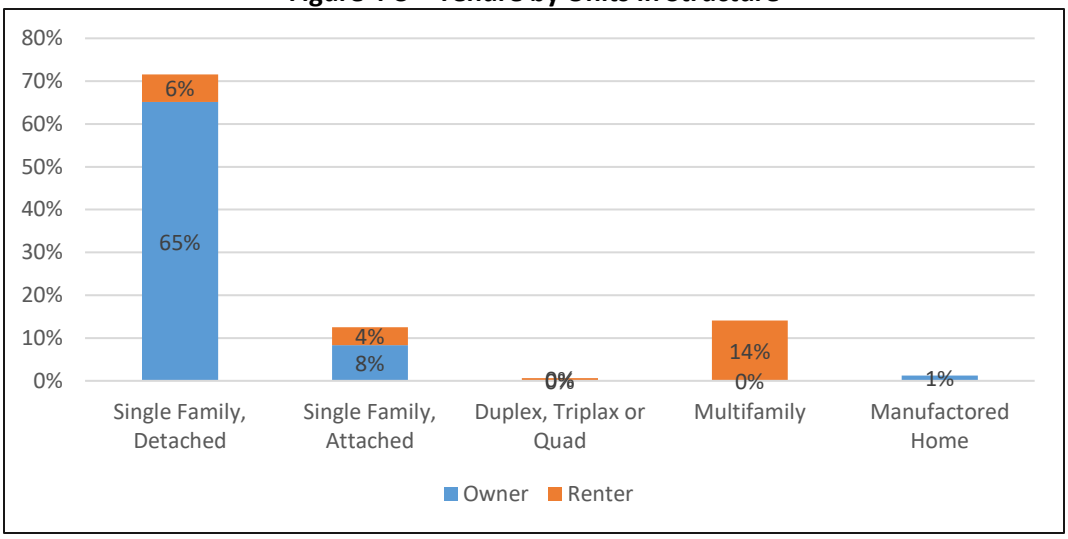
Figure 4-2 - Proportion of Housing Types



Source: Metropolitan Council Tabulation of US Census and American Survey Data

Figure 4-3 details tenure by housing unit type. In 2016, slightly more townhomes were owned than rented (8% and 4%, respectively). About 6% of single, detached family homes in Forest Lake are rented.

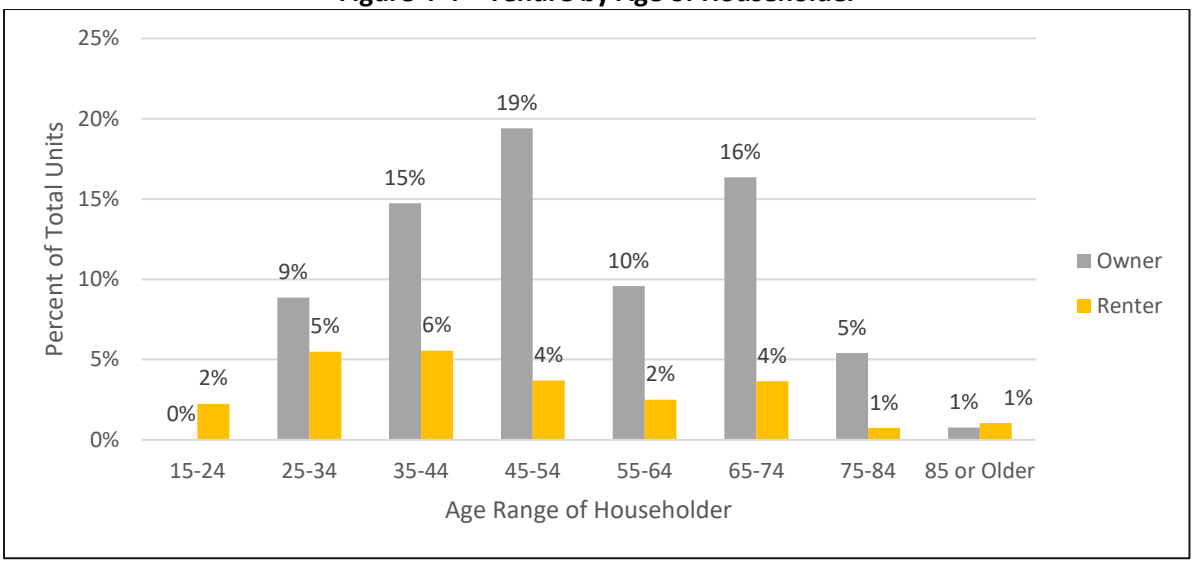
Figure 4-3 – Tenure by Units in Structure



Source: American Community Survey, 2012-2016

Figure 4-4 shows homeownership rate by age of householder in Forest Lake. Most homeowners are between 45 and 54 years old while most renters are between 35 and 44 years old.

Figure 4-4 – Tenure by Age of Householder

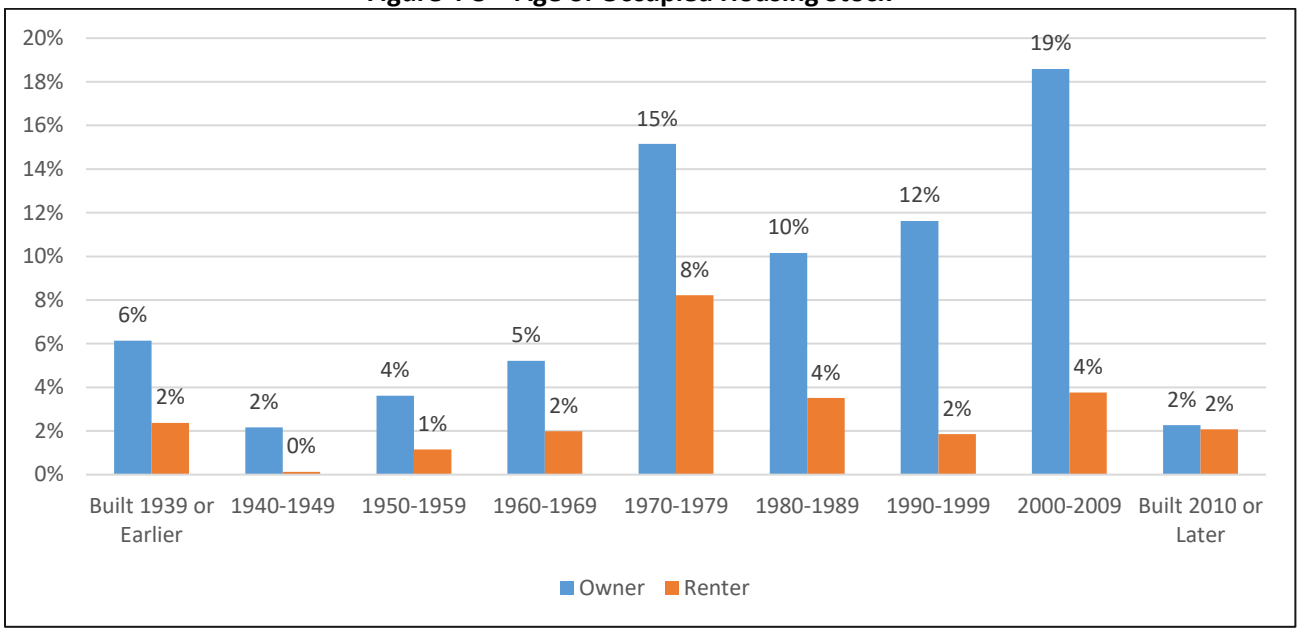


Source: American Community Survey, 2012-2016

2. Housing Stock

The figure below shows the age of housing stock in Forest Lake. Most residential development in Forest Lake has occurred since 1970. About 23% of the housing stock is 50 years old or older.

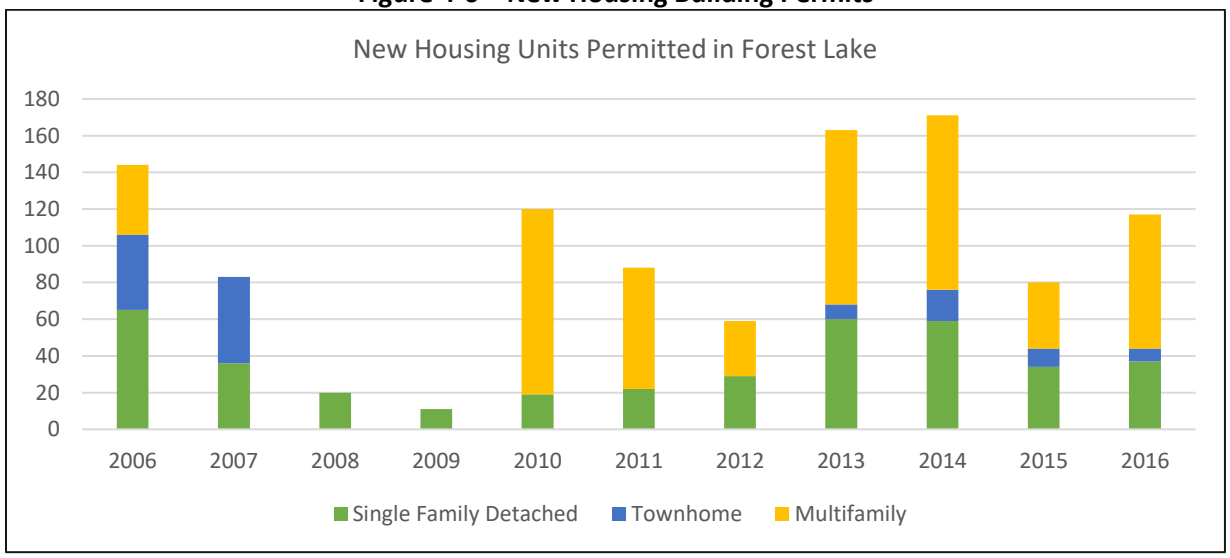
Figure 4-5 – Age of Occupied Housing Stock



Source: American Community Survey, 2012-2016

Figure 4-6 below shows new housing units permitted in Forest Lake since 2006. About 48% of all housing units permitted over this 10 year span were multifamily, with 40% being single family detached and 14% being townhomes. Over this 10 year span, about 9% of all owner occupied units were at or below the affordability threshold (approximately 60-80% AMI). In contrast, about 62% of rental units built in this same time frame are at or below the affordability threshold (approximately 50-60% AMI). The limited affordability of new owner occupancy housing units may contribute to housing cost burden issues within the City.

Figure 4-6 – New Housing Building Permits



Source: Metropolitan Council

The estimated vacancy rate in Forest Lake is approximately 6%, which is similar to the vacancy rate in 2010. Vacancy rates are always in fluctuation, meaning reported vacancy rates are a snapshot in time. It is important to consider reasons why units are vacant to best address housing needs in the city, but the actual number of vacant units in a city can change on a monthly basis.

Units are vacant for a variety of reasons, including renovations or repairs, foreclosure, estate settlement or other legal proceedings, storage, and extended absence (six months or more). These vacancies account for half of the city's total vacancies (3% of all units). About 1.2% of units are vacant because they are available to rent. The remaining vacant units are either for sale, sold or rented but currently unoccupied, or are seasonal use units.

3. Housing Values

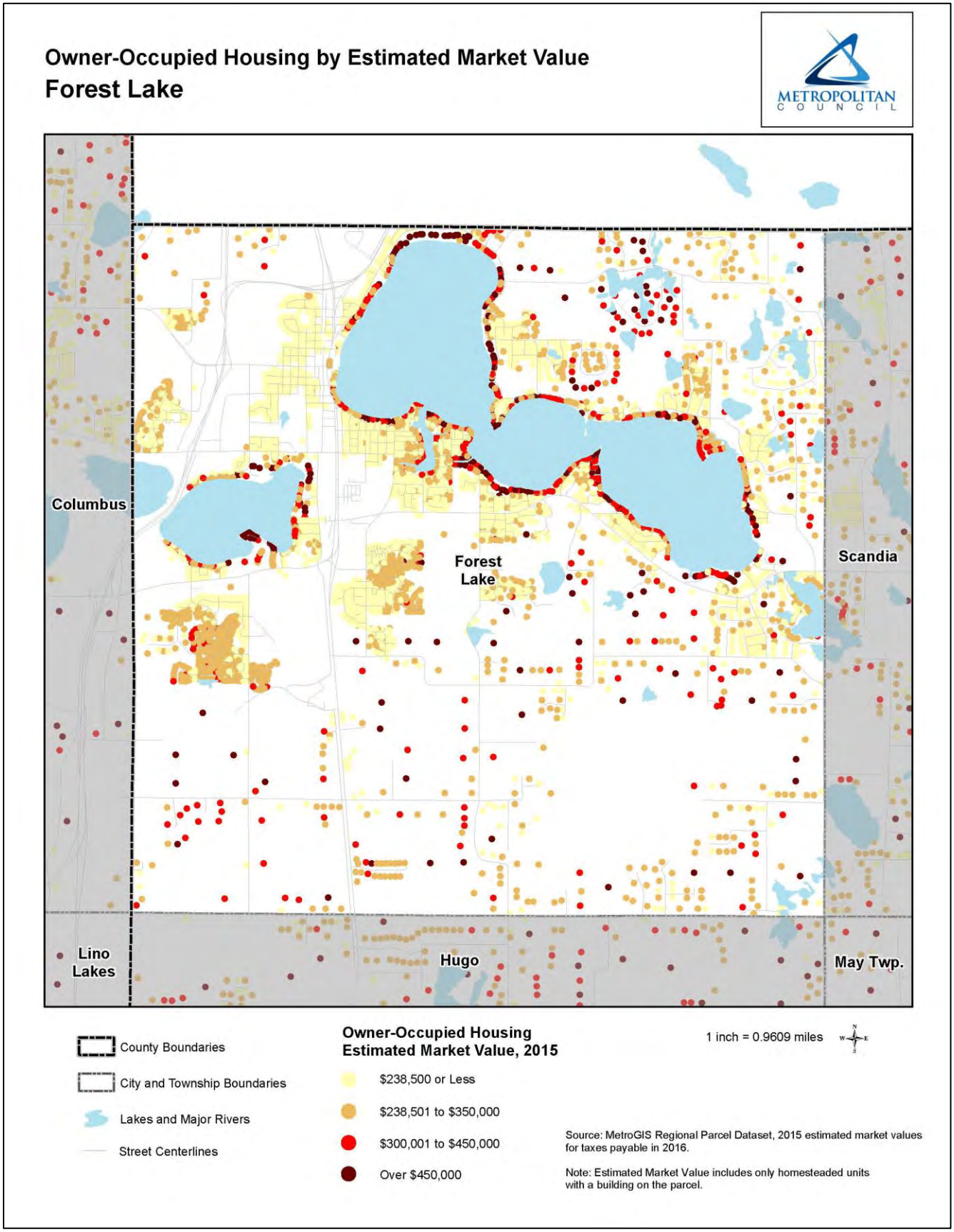
The median value for owner occupied housing units in Forest Lake in 2016 was $240,700. In 1990 and 2000, median housing values in Forest Lake were higher than the Washington County median housing value. However, the Washington County median housing value surpassed the City's median housing value in both 2010 and 2016. The value of owner-occupied housing units is shown in Figure 4-4.

Table 4-3 - Median Value of Owner Occupied Housing Units*

	Forest Lake	Washington County	Percent Difference
1990	$101,500	$94,100	7%
2000	$168,100	$156,200	7%
2010	$256,400	$264,800	-3%
2016	$234,700	$253,300	-8%

Source: Metropolitan Council Tabulation of US Census and American Survey Data
**Not adjusted for inflation*

Figure 4-7 - Owner Occupied Units by Value



C. Projected Housing Needs

The City of Forest Lake is expected to grow by more than 8,550 people and 4,200 households by 2040. This growth is most likely to occur in MUSA expansion and service areas.

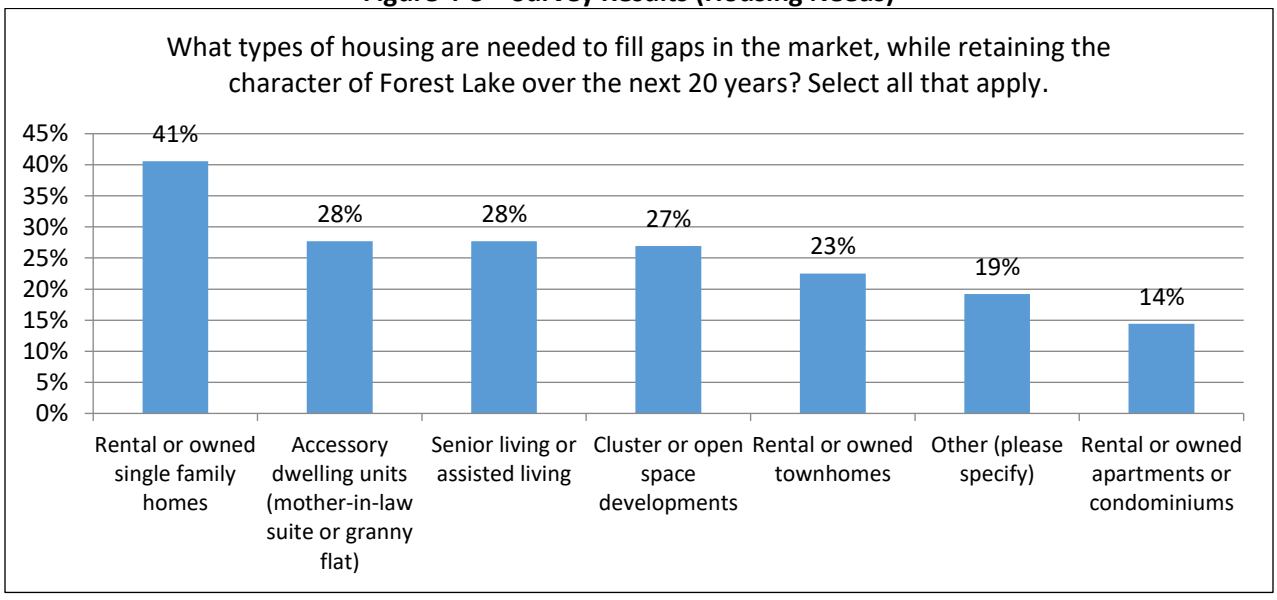
According to a 2017 Maxfield Research assessment on housing needs in Washington County through 2030, the anticipated housing demand in Forest Lake is 1,106 new owner-occupied, single family units, 547 owner-occupied, multifamily units, and 849 rental units, split between market rate (44% of rental units), affordable (16%), and subsidized (30%). This suggests a total demand for nearly 2,500 new housing units in the City by 2030.

In addition to the above forecasted demand, there is an anticipated demand for around 1,033 senior housing units in Forest Lake by 2030. Most senior housing demand is expected to be for active living, both owner and renter occupancy, and for assisted living units. There is some demand forecasted for congregate living and memory care units. These forecasts do not consider remodeling of existing housing units to help seniors age in place, which could greatly influence the number of active-living units needed in Forest Lake. It also assumes current levels of senior services available in the City of Forest Lake. If the City alters the availability, access, and convenience of services, the number of demanded senior housing units will also change.

Assuming the above total demand for 2030 is met, the City of Forest Lake would need to build approximately 667 additional housing units between 2030 and 2040 to meet the Metropolitan Council's 2040 forecast. These forecasts assume ideal market conditions, willing developers, available land in appropriate zoning districts, and little influence from neighboring communities.

In the 2017 Community Survey, residents supported residential development throughout the City as opposed to being concentrated in one specific area. When asked to identify gaps in the housing market, about 40% of survey responses noted a need for single family housing units, both owner and renter occupied. Respondents also noted accessory dwelling units, senior or assisted living, and cluster development as gaps in the housing market (roughly 27% of respondents each).

Figure 4-8 – Survey Results (Housing Needs)



Source: 2017 Community Survey

The desire for single family housing units can be met through cluster development, acknowledging two community housing preferences at once. This development style allows for housing units to meet forecasted needs at appropriate densities while preserving valuable open spaces and facilitating greenway corridors throughout the City. Cluster developments can also accommodate walkability within communities and connectivity to existing neighborhoods. Accessory dwelling units are another way to preserve open spaces and natural resources, increasing density on developed lots to protect undeveloped, natural areas.

Most survey respondents reported a desire to live in Forest Lake into and through their retirement, supporting the identified housing gap of senior housing or assisted living. Accessory dwelling units are another way to facilitate aging in place, creating flexibility in living arrangements for aging residents and their caretakers. The ability of aging Forest Lake residents to stay in their community is also dependent on the City and Washington County's ability to provide needed services in the community. However, the City can be proactive in supporting senior residential housing options, detailed in Table 4-8 in Section E.

D. Affordable Housing Allocation

The Metropolitan Council prioritized housing affordability in the Thrive MSP 2040 Regional Policy and determined the allocation of affordable housing needed to meet the rising need of affordable housing across the region. Housing is considered "affordable" when no more than 30% of household income goes to housing, so households with different income levels have different thresholds of "affordable," as outlined in Table 4-4. The Metropolitan Council selected the 4-person household thresholds as the general measurement for affordable housing needs at each income level.

Table 4-4– Regional Household Income Levels

Household Size	30% AMI	50% AMI	80% AMI
1-Person	$18,050	$30,050	$46,000
2-Person	$20,600	$34,350	$52,600
3-Person	$23,200	$38,650	$59,150
4-Person	$25,750	$42,900	$65,700
5-Person	$28,440	$46,350	$71,000
6-Person	$32,580	$49,800	$76,250
7-Person	$36,730	$53,200	$81,500
8-Person	$40,890	$56,650	$86,750

Source: Metropolitan Council

The allocation of affordable housing need is calculated based on a variety of factors:

- Projected growth of households experiencing housing cost burden
- Current supply of existing affordable housing, whether subsidized or naturally occurring
- Disparity of low-wage jobs and housing for low-wage households within a community

The Metropolitan Council determined Forest Lake's share of affordable housing need is 648 units, noted in Table 4-5.

Table 4-5– Affordable Housing Allocation

At or below 30 AMI	335
From 31 to 50 AMI	164
From 51 to 80 AMI	149
Total Number	648

Communities accomplish this affordable housing allocation by designating adequate vacant land or redevelopable land at minimum densities (units/acre) high enough to make affordable housing a viable option. The cost to build per unit decreases as the number of units per acre increases. Lower per unit costs make development an option for affordable housing developers as well as market-rate developers. The affordable housing allocation does not mean the city is forced to build this number of affordable units. However, the city must ensure the opportunity for affordable housing exists by guiding adequate vacant or redevelopable land for higher densities to meet the stated share.

To determine if the city can achieve the identified number of units, it is necessary to identify which future land use designations count towards the Affordable Housing Allocation need. According to the Metropolitan Council, any residential future land use designation that has a minimum density of eight units per acre or more will count towards affordable housing allocation calculations. Table 4-6 features the future land use designations for Forest Lake and the minimum units per acre.

Table 4-6 – Future Land Use Designations

Land Use	Minimum Density (units/acre)	Qualify for Affordable Housing
Agricultural	0.05 unit/acre	No
Rural Residential	0.16 unit/acre	No
Low Density	1.5	No
Low-Medium Density	3.0	No
Medium Density	6.0	No
High Density	15.0	Yes
Mixed Use	10.0	Yes
Downtown Mixed Use	20.0	Yes

Any vacant or redevelopable land designated as High Density, Mixed Use, or Downtown Mixed Use is counted in the affordable housing allocation calculations. In Table 4-7 below, the net developable or redevelopable acres of each applicable land use have been multiplied by the minimum units per acre to determine the minimum number of units that could be developed. The Mixed Use and Town Center only require a proportion of their developable or redevelopable land to be residential, so those percentages apply to the unit count for this calculation. Developable acreage does not include unbuildable areas, such as right-of-way, open water, and wetlands.

Table 4-7 – Development Potential for Affordable Housing Allocation

Land Use	Current (2016) Developable Acres	Min Units/Acre	Min % Residential	Units
High Density	46	15.0	100%	**689**
Mixed Use	245	10.0	50%	**1,224**
Downtown Mixed Use	24	20.0	50%	**243**
Total	**315.1**	**-**	**-**	**2,156**
Staged Acres from 2021 - 2030				
High Density	**20.6**	15.0	100%	**309**
Mixed Use (Only Residential Acres)	**32.0**	10.0	100%	**320**
Downtown Mixed Use (Only Residential Acres)	**9.9**	20.0	100%	**198**
Total	**62.5**	-	-	**827**

With the available vacant land in the High Density designation, and the potential for redevelopment in the Mixed Use and Downtown Mixed Use designations, the City of Forest Lake has enough land to meet its allocation for affordable housing.

Forest Lake is taking proper regulatory measures to encourage affordable housing, including the development and implementation of an inclusionary housing policy. Regulations and incentives in the city's policy are an effective encouragement tool and to meet demand for all new housing. The City of Forest Lake is also taking an aggressive stance in planning for potential new growth within its urbanized areas and at higher residential land use densities to promote the development of life-cycle housing and affordable housing across the city. The plan identifies areas of medium and high density residential uses to provide a mix of housing options for residents and to create opportunities for affordable housing in the City.

E. Housing Implementation Plan

The table below details potential tools and resources available to the City of Forest Lake and its residents. The City will consider the following opportunities on a case-by-case basis to achieve housing goals.

Table 4-8– Housing Implementation

Housing Goal/Need	Available Tool	Opportunity and Sequence of Use	Potential Partners
Opportunities for Multi-Generational Community Living	Start-Up Loan Program	Assist first-time homebuyers with financing a home purchase and down payment assistance through a dedicated loan program. The City will work to provide information on potential resources to the best of its ability	Minnesota Housing
	Home Improvement Loans	Assist homeowners in financing home maintenance projects to accommodate a physical disability. The City will work to provide information on potential resources to the best of its ability	Washington County CDA, Minnesota Housing
	ADU Ordinance	Review and continue to support the City's existing ordinance permitting the construction of accessory dwelling units or guest homes in agricultural, rural residential, and low density zoning districts	Property Owners, Forest Lake Residents
	Tax Abatement	The City will consider tax abatement for developments including of rental units suitable for large families (two or more bedrooms).	Washington County CDA
	Home Buyer Education	The City will consider partnering with the CDA and other agencies to offer resources to homeowners pre- and post-purchase, including manufactored housing communities.	Washington County CDA
	Affordable Mortgage Products/MCPP (Minnesota Cities Participation Program)	Affordable mortgages are available through MHFA to residents through participating lenders in the Start Up and Step Up Loan programs. Borrowers must meet median income limits and interest rates are kept low by funding mortgages through a bonding allocation. First time homebuyers who are income qualified may also access down payment closing cost assistance. This service is accessed through the Homebuyer Services program. The City	Minnesota Housing

Table 4-8– Housing Implementation			
Housing Goal/Need	**Available Tool**	**Opportunity and Sequence of Use**	**Potential Partners**
		will provide information on this potential resource to the best of its ability.	
	Expedited Pre-application Process	The City will consider creating a pre-application process to identify ways to minimize unnecessary delay for projects that meet overall community land use, housing, and density goals prior to formal application process.	
	Planned Unit Developments (PUDs)	The City will consider planned unit developments to meet overall community land use, housing, and density goals that may otherwise not be permitted through regular zoning requirements.	Developers, property owners
	Fair Housing Policy	The City will consider developing a Fair Housing Policy and understands such a policy will be required to apply for LCA grants starting in 2019.	
	Site Assembly	It is unlikely the City will consider using site assembly for this purpose.	
	Super RFP	It is unlikely the City will consider supporting an application to RFP programs for this purpose.	
	Participation in Housing Related Organizations	The City will consider participating in housing related organizations to meet overall community land use, housing, and density goals.	Local and state agencies, non-profits, residents, and other relevant parties
	Livable Communities Demonstration Account (LCDA)	The City will consider support for an LCDA grant for development proposals that connect housing, jobs, retail centers, and public transportation that provide senior housing and/or a variety of housing types	Metropolitan Council
Maintenance of Existing Housing Units	Home Improvement Loans	Assist homeowners in financing home maintenance projects like roof repair, plumbing and electrical work, accommodating a physical disability, or select energy efficiency improvement projects. The City will work to provide information on potential resources to the best of its ability, including manufactured housing communities.	Washington County CDA, Minnesota Housing
	Subsurface Sewage Treatment System Repair Grant/Loan	The City will consider partnering with the County and will offer referrals to the best of its ability to the SSTS Repair Grant, which assists homeowners with noncompliant subsurface sewage treatment systems	Washington County
	Property Tax Policies	The City will consider the exploration and development of property tax policies that	Property owners,

Table 4-8– Housing Implementation			
Housing Goal/Need	**Available Tool**	**Opportunity and Sequence of Use**	**Potential Partners**
		encourage the maintenance or rehabilitation of existing owned and rented housing units	Forest Lake residents
	Foreclosure Prevention	The City will consider partnering with the CDA and other agencies to offer counseling and foreclosure prevention to homeowners, including manufactured housing communities..	Washington County CDA
	Step-Up Loan Program	Assist qualified non-first-time homebuyers with financing a home purchase or refinancing an owned home through a dedicated loan program. The City will work to provide information on potential resources to the best of its ability, including manufactured housing communities.	Minnesota Housing
	Rental License and Inspection Program	It is unlikely the City will develop rental license and inspection programs.	
	CDBG	The City will consider using a portion of the city's total CDBG allocation to develop and maintain a home/property rehab program for low and moderate income households	Washington County CDA
Development of New Affordable Housing for Households with Incomes at or Below 80% AMI	Housing Trust Fund	The City will consider the exploration and development of an Affordable Housing Trust Fund to receive grants, buyouts from affordable housing requirements, sales of affordable units subject to restrictive covenants and other funds. If developed, the City will utilize and leverage these funds to attract and increase affordable housing	
	HOME Program	The City will consider support for HOME funding applications to provide gap financing for new units affordable to owner or renter households at or below 60% AMI	Washington County CDA
	Housing Bonds	The City will consider issuing housing bonds to support developments including of units affordable to households at or below 30% AMI.	Washington County CDA, MN Housing
	Tax Abatement	The City will consider tax abatement for development proposals to construct new affordable housing units (at or below 80% AMI) in high density land uses	Washington County CDA
	Tax Increment Financing	The City will consider TIF for development proposals for new affordable housing units in high density land uses	Washington County CDA
	Tax Forfeiture Properties	The City will identify opportunities to work with affordable housing developers to provide tax forfeiture property acquisitions for the construction of new affordable housing	Affordable housing developers, non-profit organizations

Table 4-8– Housing Implementation			
Housing Goal/Need	**Available Tool**	**Opportunity and Sequence of Use**	**Potential Partners**
	Land Trust or Bank	The City will consider partnering with relevant agencies to develop a community land trust or bank to create affordable housing options for households at or below 60% AMI	Washington County CDA, developers, non-profit organizations
	Low Income Housing Tax Credit (LIHTC)	The City will consider support for LIHTC financing to develop affordable rental housing for households at or below 60% AMI	Washington County CDA
	Livable Communities Demonstration Account (LCDA)	The City will consider support for an LCDA grant for development proposals that connect housing, jobs, retail centers, and public transportation that provide affordable housing for households at or below 80% AMI	Metropolitan Council
	Local Housing Incentives Account (LHIA)	The City will consider support for development proposals that provide affordable housing for households below 80% AMI. Special consideration will be given for larger units (two or more bedrooms).	Metropolitan Council
	Planned Unit Developments (PUDs)	The City will consider planned unit developments to meet overall community land use, affordable housing, and density goals that may otherwise not be permitted through regular zoning requirements.	
	Site Assembly	It is unlikely the City will consider using site assembly for the construction of new affordable housing.	
	Super RFP	It is unlikely the City will consider supporting an application to RFP programs for the construction of new affordable housing.	
	Inclusionary Housing Policy	The City of Forest Lake currently has policy that incentivizes the development of new housing affordable to households with incomes at or below 30% AMI. Incentives may include density bonus of up to 15%, reimbursement of planning and zoning fees, sewer/water availability charges, or park dedication fees. The City will review this policy as appropriate to assess results and achievement of affordable housing goals.	Developers
Preservation of Existing Affordable Housing for Households with Incomes at or Below 80% AMI,	Tax Abatement	The City will consider tax abatement for proposals to rehabilitate affordable housing units in locations guided for high housing densities. Additional consideration will be given for units affordable to households at or below 30% AMI.	Washington County CDA
	GROW Fund	The City will consider support for gap financing funds for redevelopment projects affordable to households at or below 60% AMI	Washington County CDA

Table 4-8– Housing Implementation			
Housing Goal/Need	**Available Tool**	**Opportunity and Sequence of Use**	**Potential Partners**
Including Manufactured Housing Communities	Referrals	The City will work with the CDA to provide information on potential resources to the best of its ability.	Washington County CDA
	Preservation Strategies: 4d	The City will consider providing 4d program tax breaks to the best of its ability.	Washington County CDA
	Local Housing Incentives Account (LHIA)	The City will consider support for proposals to preserve, renovate, or maintain affordable housing for households below 80% AMI	Metropolitan Council
	Housing Improvement Area	A Housing Improvement Area is a defined area in which a city finances housing improvements from fees imposed on the properties within that same area. The City is unlikely to use this strategy to preserve existing affordable housing.	Townhome or condo associations, residents.
	City Policies	The City of Forest Lake will review policies to identify opportunities to support the preservation of affordable housing in the City. Currently, Forest Lake has a one-for-one replacement policy to address the loss of affordable housing units. The City also requires new public facility projects to be evaluated for the inclusion of affordable housing.	

V. PARKS AND TRAILS

A. Introduction-System Overview

Parks and trails provide communities with many benefits, both tangible and intangible, including making a community more livable, enhancing economic growth through tourism, preserving vital natural resources, and providing opportunities and outlets for physical fitness and mental prosperity. The intention of this section of the comprehensive plan is to guide the City of Forest Lake in the planning and development of its current and future parks, trails, and open space system, while meeting the needs of its residents, regardless of their age, health, or economic status. This chapter looks at all areas within the current city limits, which currently encompasses a total area of approximately 22,746 acres (35.54 square miles).

The City of Forest Lake Parks and Recreation Department is primarily responsible for the development and maintenance of the parks and trails system. This system currently consists of 23 parks, 18 open spaces, and a trail system comprised of nearly 16 miles of total trail connections.

B. Goals and Policies

The City of Forest Lake City Council developed four goals for the Parks and Trails system within the City. These goals were developed from and are in support of the overarching goals of the Comprehensive Plan as well as the goals, policies, and strategies identified in the 2014 Parks, Trails & Open Space Master Plan and the 2016 Parks, Trails, and Lakes Commission workshop visioning sessions.

Goal: *Provide access opportunities to parks, trails, and open spaces for all residents of Forest Lake.*

Objectives

- Consider amenities that allow for extending park use beyond daylight hours.
- Consider facilities that allow for year-round use.
- Develop park and trail facilities that provide opportunities for all ages and user groups.
- Provide spaces that allow all citizens to be physically active.
- To be a premier recreational destination for parks, trails, and lakes

Goal: *Develop parks, trails, and open spaces with consideration of preservation of and education about natural habitats.*

Objectives

- Promote an understanding of the value of open space and natural habitats.
- Preserve and protect diverse and unique ecosystems.
- Encourage biodiversity of native plants and animals.
- Provide opportunities for education in the community's parks, trails, and open spaces.
- Encourage policies for the integration of best management practices to manage storm water quality.
- Establish levels of maintenance/management for different areas.
- Promote efficiencies in design and construction.

Goal: *Develop an effective planning approach identifying improvements and maintaining parks, trails and open spaces.*

Objectives

- Develop partnerships and teaming opportunities with other agencies to enhance the community's parks, trails, and open spaces.

- Design for maintenance by City equipment.
- Provide for periodic evaluation of existing park, trail, and open space land against community need.

Goal: *Support the establishment of a network of public parks and trails to provide outdoor recreation amenities and community-wide connections to serve the health and welfare of the City's residents.*

Objectives

- Emphasize the importance of making connections to regional trails, including the Hardwood Trail.
- Promote trail and sidewalk connections between local and regional parks to create a linear system.

C. History & Past Studies (Existing Guiding Documents)

In addition to the 2014 Parks, Trails, and Open Space Master Plan (included in Appendix C), several other documents have been instrumental in the development of the parks and trail system within Forest Lake and will be referenced in this Master Plan. These documents include the following:

2002 - 2012 Park Comprehensive Plan

The City of Forest Lake's 2002 Parks, Trails, and Open Space Plan was an important document providing guidance to the community after the merger of the City of Forest Lake with Forest Lake Township in 2001. This document not only reflected the needs of the newly formed community but carried forward the vision of the merged entities. Of utmost importance is that this plan laid the basis for elected and appointed officials to acquire, manage, and maintain their parks, trails open spaces. It also provided a basis for measuring the interconnection of the City's parks and recreation resources with neighboring communities and entities. Another vital aspect of this document was to relate the importance of communication between the City, developers, and private landowners; particularly as this related to impacts on existing and future parks, trails, and open spaces.

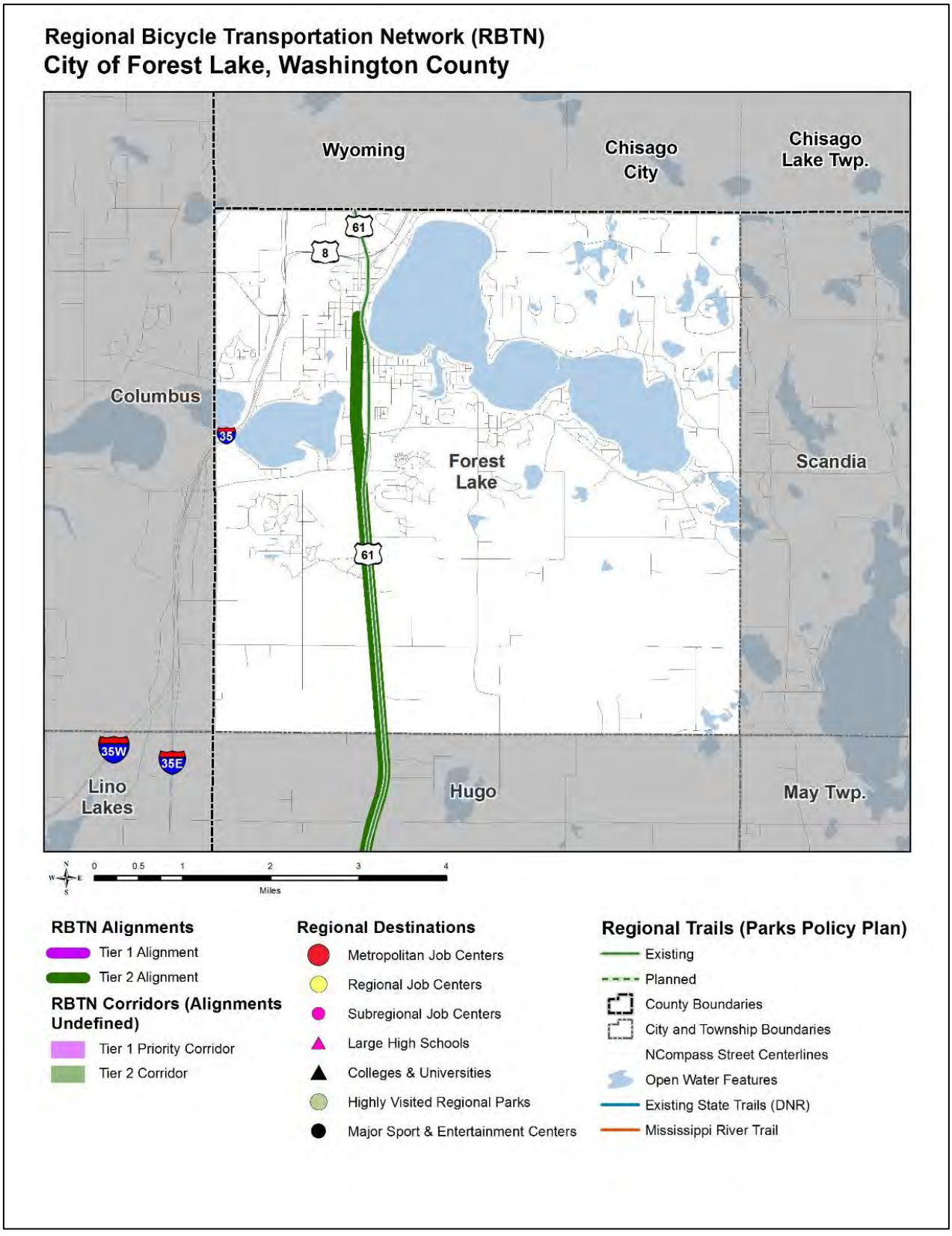
In 2016, the City of Forest Lake Parks, Trails and Lakes Commission discussed the potential of utilizing a new park classification system that centered on classifying parks based on amenities, uses, and resources as opposed to the existing classification system that was based strictly on acreage.

D. Existing Parks and Trails

1. Regional Parks and Trails

The regional park system, as identified by the Metropolitan Council, includes four main components or facility types. These include regional parks, park reserves, special recreation features, and regional trails. Within the City of Forest Lake, the Hardwood Creek Regional Trail is the only facility that is identified as being a part of this regional system. There are no regional parks, park reserves, or special recreation features located within the City of Forest Lake currently, nor are there any planned. Figure 5-1 identifies the Regional Bicycle Transportation Network (RBTN) in the City of Forest Lake.

Figure 5-1 - Regional, State and Federal Parks and Trails



Hardwood Creek Regional Trail
The Hardwood Creek Regional Trail runs through the center of the Forest Lake along Highway 61. The trail travels through Hugo and Forest Lake as it connects the Bruce Vento Regional Trail in the south, providing access to many other metro area trails. The trail also connects to the Sunrise Prairie Trail in Chisago County in the north and the Glacial Hills Regional Trail search corridor, which would ultimately provide trail access to North Branch.

The Hardwood Creek Regional Trail consists of two parallel trails, with one being paved and the other being mown turf. The paved trail, which is not groomed in the winter, is open to biking, hiking, in-line skating, snowshoeing, and cross-county skiing. The turf trail is open to horseback riding in the summer and snowmobiling (without studs/metal traction devices) in the winter. Trail amenities in Forest Lake include restrooms and water fountains at both the Headwaters Transit Center. Hardwood Creek Trail has received a number of upgrades since 2015, including resurfacing, the addition of wayfinding signage and maps, and new kiosks and benches that were installed at four locations along the trail.

2. Additional Park Facilities of Significance

In addition to the facilities included as part of the regional park system, the City of Forest Lake hosts two wildlife management areas (WMAs) within its city limits; the Hardwood Creek Wildlife Management Area and the easternmost portion of Lamprey Pass Wildlife Management Area, most of which lies in the City of Columbus.

A Wildlife Management Area is an area of natural quality for nature-oriented outdoor recreation, such as viewing of wildlife habitat, hiking, fishing, boating, camping, and trail uses. Though these areas may include active play areas, 80% of the land in wildlife management areas is typically reserved for conservation and natural resource management with less than 20% used for recreation development. Such nature-oriented areas are intended to serve several communities and a larger regional area. Managed natural areas are required to meet federal standards which are typically stricter than standards applied to city parks.

Hardwood Creek Wildlife Management Area
Hardwood Creek Wildlife Management Area consists of 583 acres on two parcels in the southeast corner of Forest Lake. Most of the area is made up of wooded wetlands and wooded upland islands. There are also several small planted prairies in the WMA. Hardwood Creek is popular for a number of recreational opportunities including hunting, cross-county skiing, snowshoeing, and snowmobiling.

Lamprey Pass Wildlife Management Area
Lamprey Pass Wildlife Management Area consists of 1,291 acres and is the second largest WMA in the metropolitan area. Lamprey Pass is covered largely by wetlands with some small fragmented areas of woodland and grassland. Howard and Mud Lakes, both located within the WMA boundaries, offer non-motorized boating opportunities to boaters all over the metro.

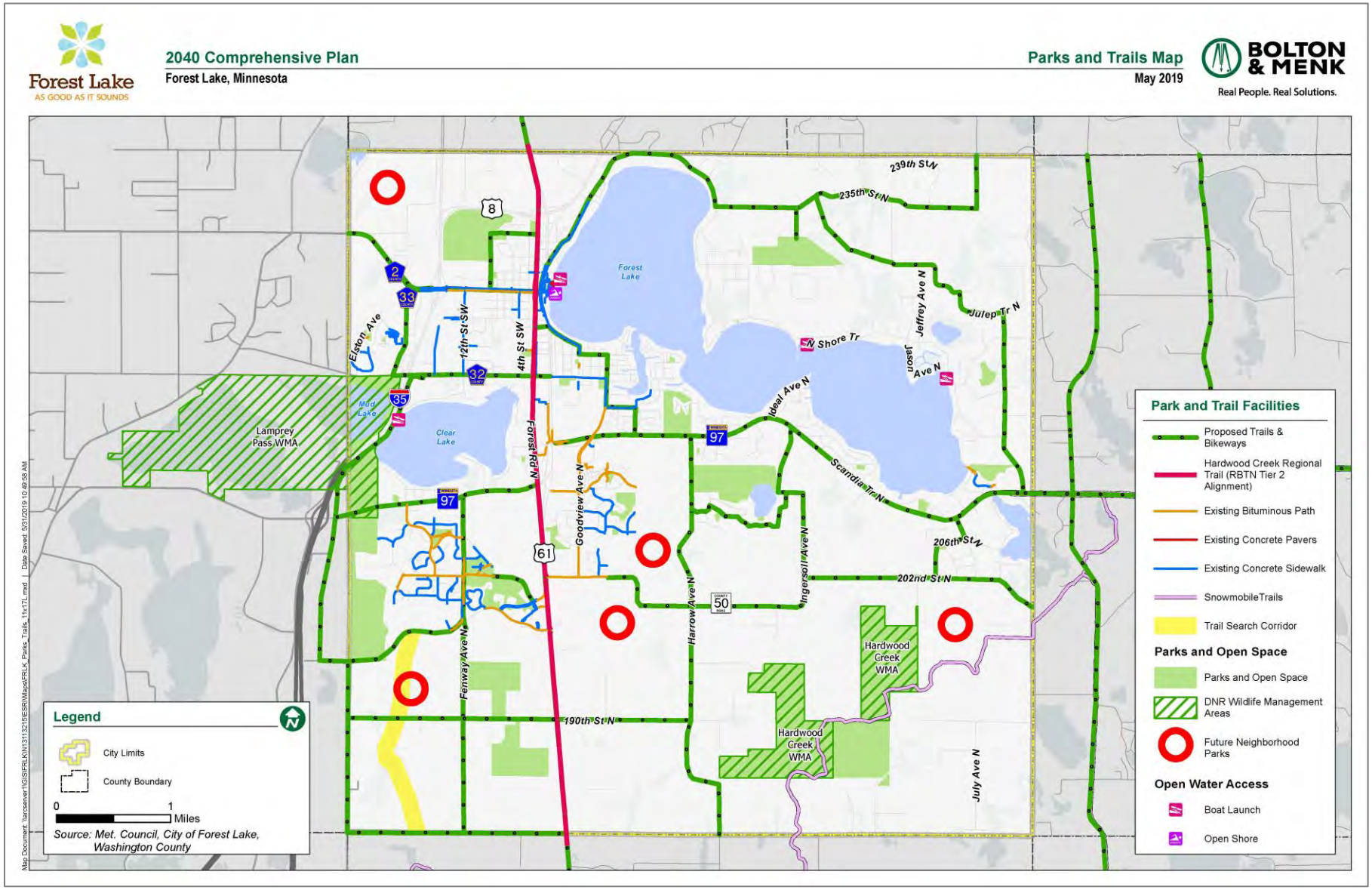
3. Local Parks

This section describes and maps the City of Forest Lake's local park system, identified in Figure 5-2. A summary of the size & available amenities at each park can be found in Table 5-1.

Table 5-1 – Park Amenities By Location															
Parks	Park Size (Acres)	Walking/Hiking Trails	Picnic Facilities	Shelter/Building	Banquet Hall/Kitchen	Restroom	Skating Rink	Playground	Ballfields	Courts	Boat/Fishing/Water	Mowed Open Space	Nature Preserve	Golf	Community Garden
Premier Parks															
Fenway Park	37.9	X		X		X		X	X	X		X			
Lakeside Memorial Park	3		X	X		X		X			X	X			
Community Parks															
Beltz Park	4		X	X			X	X	X	X		X			
Cedar Park	2.7		X	X		X		X				X			
Kulenkamp Park	65	X	X	X		X		X	X			X			
Neighborhood Parks															
Bayview Park	0.85					X		X		X		X			
Bridle Pass Park	2.6							X				X			
Clear Lake Park	1							X		X		X			
Eagle Bluff Park	0.66		X	X				X				X			
Manor Park	0.81							X				X			
Schilling Park	5								X			X			
Shawn Silva Memorial Park	2.6			X				X		X		X			
Summerfield Park	10.8	X	X	X				X	X			X			
Open Space Parks															
Bay Park	0.25											X			
Bixby Park	94											X	X		
North Shore Circle Park	0.81										X	X			
Preserve Park	0.43		X									X			
Sherwood Park	1.4														
Southview Park	1	X	X	X								X	X		
Special Use Parks															
Castlewood Golf Course	42.5													X	
Tower Park	2.6						X								X
Shields Lake Park	0.5					X	X								

Table 5-1 – Park Amenities By Location															
Parks	Park Size (Acres)	Walking/Hiking Trails	Picnic Facilities	Shelter/Building	Banquet Hall/Kitchen	Restroom	Skating Rink	Playground	Ballfields	Courts	Boat/Fishing/Water	Mowed Open Space	Nature Preserve	Golf	Community Garden
Other Parks															
Forest Hills Farms Park	24.0	X											X		
Shady Trails Park	0.73	X											X		
Schools & Private															
Southwest Junior High School Complex	10.9								X	X		X			
Central Montessori Elementary School	0.6							X		X		X			
Forest Lake Elementary School	12.4		X					X	X	X		X			
Forest View Elementary School	7.7							X	X	X		X			
Schumacher Athletic Field	3.9								X						
Maroon & Gold Ice Arena	0.9						X								
Senior Community Center	1.1			X											
Sports Center Arena	4			X			X								
Forest Hills Golf Club (Private)	116													X	

Figure 5-2 - Local Parks and Trails



Local Park Classification System

The City of Forest Lake classifies its parks based on use and the users the park serves. This classification system closely follows a classification system that was developed by the National Recreation and Park Association (NRPA) to be used as a resource to describe most types of parks. Due to the large number of parks within the city limits of Forest Lake, the majority of the NRPA recommended classifications were used and additional classifications were added to define and inventory the city's park system. Each park was classified under the category that met the broadest definition of amenities provided and the users it serves.

The Forest Lake classification of parks includes; Premier Park, Community Park, Neighborhood Park, Open Space Park, Special Use Park, and Other Park.

Premier Parks

Premier parks include parks in the community that draw the highest numbers of visitors from both within the city and from surrounding communities. These parks host larger community events such as music concert series, run/walks, tournaments, etc. These parks provide both recreational and social activities. Examples of such activities include softball tournaments, softball leagues, and Art in the Park. Premier parks also include running water and have bathroom facilities and parking lots.

There is a total of two Premier Parks within the City of Forest Lake.

Community Parks

These types of parks typically include areas of diverse use and environmental quality. Such parks meet community-based recreation needs, may preserve significant natural areas, and often include areas suited for intense recreational facilities. These parks may contain significant athletic fields, water features, walking paths, picnic facilities, and various other active and passive amenities that meet community needs and site sustainability. Community parks often serve as a venue for community athletic organizations or other recreational or social based community gatherings.

There is a total of three Community Parks within the City of Forest Lake.

Neighborhood Parks

Neighborhood parks are considered the basic unit of a community's park system and provide a recreational and social focus for residential areas. These parks desirably provide space for informal active and passive recreational activities. Park space is provided for recreational activities such as field games, court games, picnic facilities, and playground equipment. Neighborhood parks may contain amenities that serve the community as a whole. An example of this is an athletic field that is used by athletic organizations.

There is a total of eight Neighborhood Parks within the City of Forest Lake.

Open Space Parks

Open spaces may consist of several components or landscape types including but not limited to parks, trails, natural areas, and greenways. This land may be publicly or privately owned and may or may not be protected. Open space can enhance the community's character and quality of life by providing aesthetic benefits and opportunities for passive recreation, while also providing wildlife habitat.

There is a total of six Open Space Parks within the City of Forest Lake.

Special Use Park

Special use parks are areas for specified or single-purpose recreational activities, such as golf courses, nature centers, display gardens, arenas, outdoor theaters, gun ranges, or downhill ski areas. They can also

include areas that preserve, maintain, and interpret buildings, sites, and objects of archeological significance. Plazas or squares in commercial centers, as well as boulevards and parkways, are typically included in this recreational and open space type. NRPA does not have any specific standards pertaining to special use parks since the amenities provided by these areas vary widely.

There is a total of three Special Use Parks within the City of Forest Lake.

Other Parks

The other parks category includes parks and other amenities that are available for public use but may not fit into any of the other identified park categories. Within the City of Forest Lake boundaries, a substantial amount of land was dedicated as parkland as a condition of local government approval when new residential subdivisions were created. Many of these parcels are currently undeveloped and serve as areas for passive recreation for nearby residents. As platted parkland, these areas will remain City property and will continue to be enjoyed by residents for current and future recreational uses.

There are several Other Parks within the City of Forest Lake.

School & Private Parks

Schools and private parks include any school properties or privately owned properties within the city that include recreational opportunities available to the public. At schools, this may include playgrounds, walking trails, ballfields, courts, picnic amenities, etc. Privately held parks within the city often include amenities that are not offered at city owned parks, or may be targeted toward specific demographics or clientele.

There is a total of nine School & Private Parks within the City of Forest Lake.

4. Local Trails

Currently, the City of Forest Lake does not have a designated local trail system or identify specific trail routes throughout the community. There are sidewalks in many areas, and trail segments are scattered within the city limits. Recommended trail system improvements center largely on enhancing connectivity to the Hardwood Creek Trail and are discussed further in the Proposed Parks and Trails section. The Parks, Trails and Lakes Commission has expressed interest in developing a localized trail map identifying looped trail routes through the use of the existing sidewalks and other trail segments and will continue to develop new trail connections as budget and resources allow.

E. Proposed Parks and Trails

1. Regional Parks and Trails

There are continued discussions with Washington County and City staff to plan for an extension of the trail along the north side of County Road 50 (202nd Street N) from its termination near Goodview Avenue N eastward toward Big Marine Park Reserve and connect with the planned Glacier Hills Trail, which is a Regional Trail Search Corridor that runs along CSAH 4 and intersects with the Hardwood Creek Trail in Hugo. This trail alignment would allow for a bike/pedestrian loop approximately 20 miles in length. While continuing to seek partnerships with Washington County, the City will attempt to develop trail segments through grant funding and public dedications when property develops.

2. Proposed Local Park System Improvements

The Existing and Proposed Local Parks and Trails Map (Figure 5.2) includes several new proposed trails and parks that offer a local network of non-motorized transportation connections and recreational destinations. The map includes areas for four Future Neighborhood Parks in locations where significant future residential development and accompanying demand for recreational opportunities are anticipated.

The parks are planned in distinct areas to allow for geographic dispersion. Future parks are planned for the city's northwest corner, southwest quadrant, Chestnut Creek area, and in an area south of Third Lake. As funding and road reconstruction allows, the City will continue to seek and develop additional connections to the Hardwood Creek Trail to and from popular local destinations.

3. Proposed Local Trails

Future trails are primarily proposed to supplement main vehicle circulation routes and provide recreational opportunities and transportation alternatives. The Existing and Proposed Local Parks and Trails Map (Figure 5.2) illustrates how the proposed trails follow the existing and expected future local street grid.

The proposed trail map also shows a few exceptions where proposed trails are not aligned with existing and planned local streets. In the northeast section of Forest Lake, primarily along existing roads and public rights-of-way, there is a proposed trail. This trail, if continued along Highway 97 south of the lake and following other local roads adjacent to Forest Lake, could create a Lake loop. Similarly, the proposed trail along County Road 50, described in the Regional Parks and Trails section above, could link to the Glacier Hills Trail and create a 20-mile loop.

In addition, the currently undeveloped southwest quadrant of Forest Lake is an area that may see the largest number of new homes by 2040. There is a Future Neighborhood Park planned for this area. The addition of a trail could promote access to the park and extend southward to the city's southern border and connect with a proposed trail in the City of Hugo west of Fenway Avenue. The general alignment of this trail, which begins in the Headwaters Parkway area, is shown as a Trail Search Corridor in Figure 5.2.

VI. TRANSPORTATION

A. Transportation Goals and Objectives

Goal: *Encourage and maintain a safe, efficient and convenient multi-modal transportation system.*

Objectives:

- Comprehensively coordinate all transportation-related facilities as one system.
- Encourage the integration of transit systems to meet the mobility needs of all individuals.
- Continue support for transit
- As a Transit Capital Levy Community, help ensure permanent transit service and local commuter service for people who need local mobility assistance.
- Incorporate elements in development and design standards related to bicycle and pedestrian uses.
- Provide facilities for pedestrians and bicyclists in conjunction with street improvement projects, when financially feasible.
- Provide safe and convenient pedestrian and bicycle access to all recreation and school facilities within the community, when financially feasible.
- Explore the potential for using drainage and utility easements and road right-of-ways for trail development.

Goal: *Design and develop a vehicular transportation system to accommodate the various classifications of roads and to safely regulate access, traffic volumes, traveling speeds and access throughout the community.*

Objectives:

- Identify long-term planning for transportation corridors to manage access and capital improvements as development occurs.
- Develop access management standards and look towards alternative service road design to separate traffic on city streets.
- Minimize and limit vehicular access onto arterial roadways by utilizing appropriate traffic control devices.
- Discourage through traffic from penetrating residential areas on local roads.
- Incorporate the use of innovative traffic management options and technologies.

Goal: *Ensure planned transportation infrastructure, capacity, and access will accommodate proposed land uses and development.*

Objectives:

- Preserve right-of-way for identified transportation needs.
- Develop all additional elements of the street system (sidewalks, lighting, landscaping, biking accommodations, etc.) harmoniously with adjacent land uses and transportation objectives.
- Explore concepts and support transportation infrastructure connections to regional transportation networks that will support economic development and improve safety.
- Incorporate land uses and access spacing guidelines compatible with the functional classification of the regional highway system.
- Fund a Capital Improvements Program to ensure long-term street maintenance and reconstruction programs.
- Plan and design transportation facilities that preserve natural resources and existing infrastructure, where applicable.
- Consider flexibility and equity in implementing appropriate assessment procedures, such as variable terms and deferments.

Goal: *Coordinate transportation planning and system improvements with other government jurisdictions.*

Objectives:

- Work cooperatively with MnDOT and the County in studies and plans for commuter services, particularly along or feeding into the Rush Line corridor
- Explore possibilities with MnDOT, the County, and adjacent jurisdictions for a new I-35 W/E Interchange serving the southern portion of Forest Lake and surrounding areas.
- Coordinate transit service and park-and-ride improvements with County and regional jurisdictions.
- Cooperate with MnDOT, the County, and neighboring jurisdictions to provide connective pedestrian and bicycle networks

Goal: *Maintain existing service, continue improvements, and support development of the Forest Lake Airport in accordance with the Airport Layout Plan and Airport Alternative Urban Areawide Review.*

Objectives:

- Continue to pursue funding opportunities for the maintenance and expansion of the Forest Lake Airport.

Goal: *Preserve the safety of regional air traffic.*

Objectives:

- Notify MNDOT Aeronautics of any structure of a height of 200 feet above the ground
- Address Federal and State safety standards when planning the design of any object related to or affecting navigable airspace.

B. Existing Roadway Conditions

1. Existing Traffic Volumes and Jurisdictional Classification

The most basic characteristic of a given roadway is the volume of traffic that it carries. Existing traffic volumes on roadways within Forest Lake are presented on Figure 6-1. This is the most current MnDOT data. This figure also depicts number of travel lanes on higher level roadways per Metropolitan Council requirements.

Roadways are also classified on the basis of which level of government owns and has jurisdiction over them. In the case of Forest Lake, roadways are under the jurisdiction of MnDOT, Washington County, or the City. Figure 6-2 depicts the existing roadway jurisdictional classification system in Forest Lake.

Figure 6-1 - Existing Traffic Volume

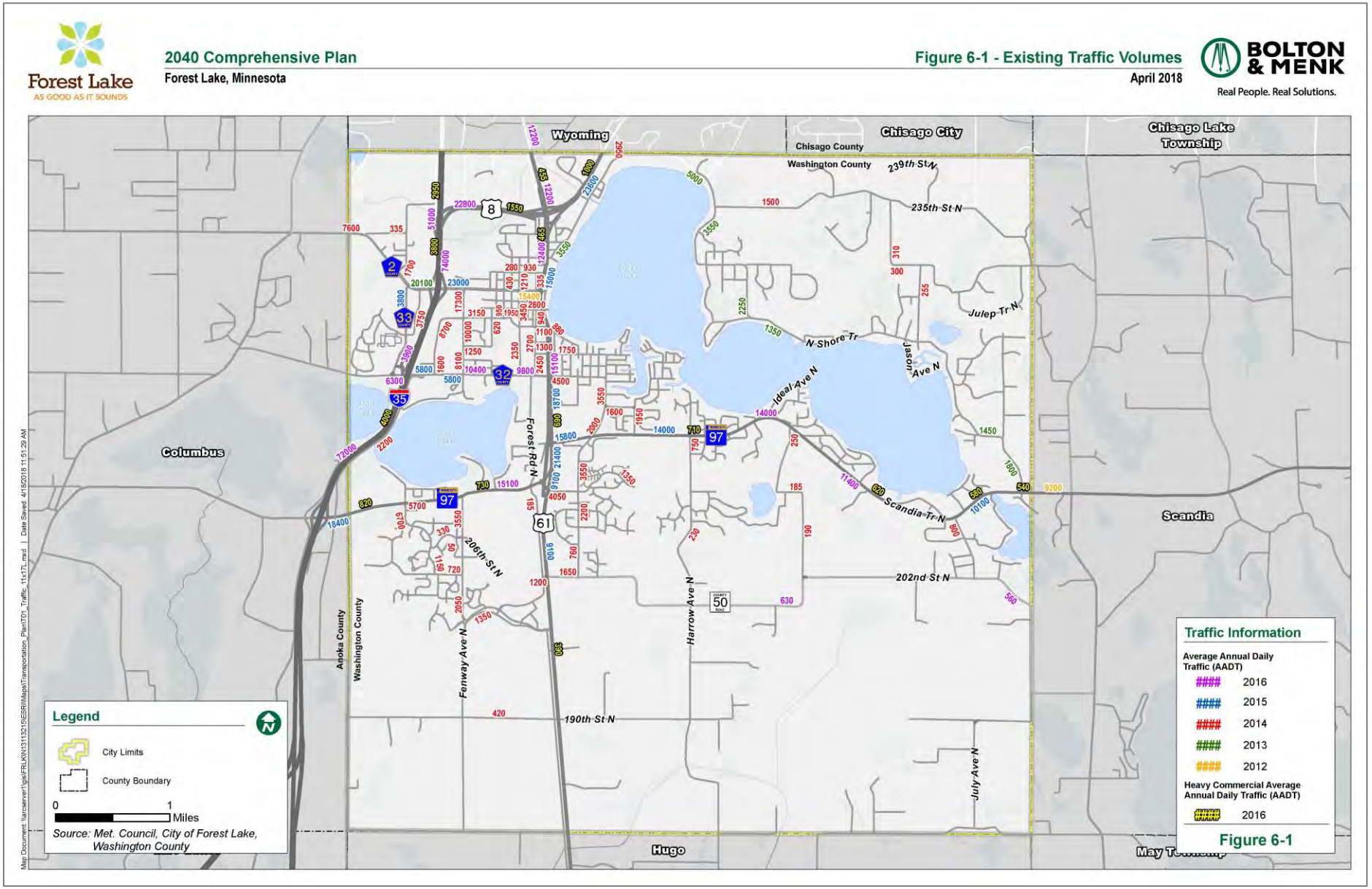
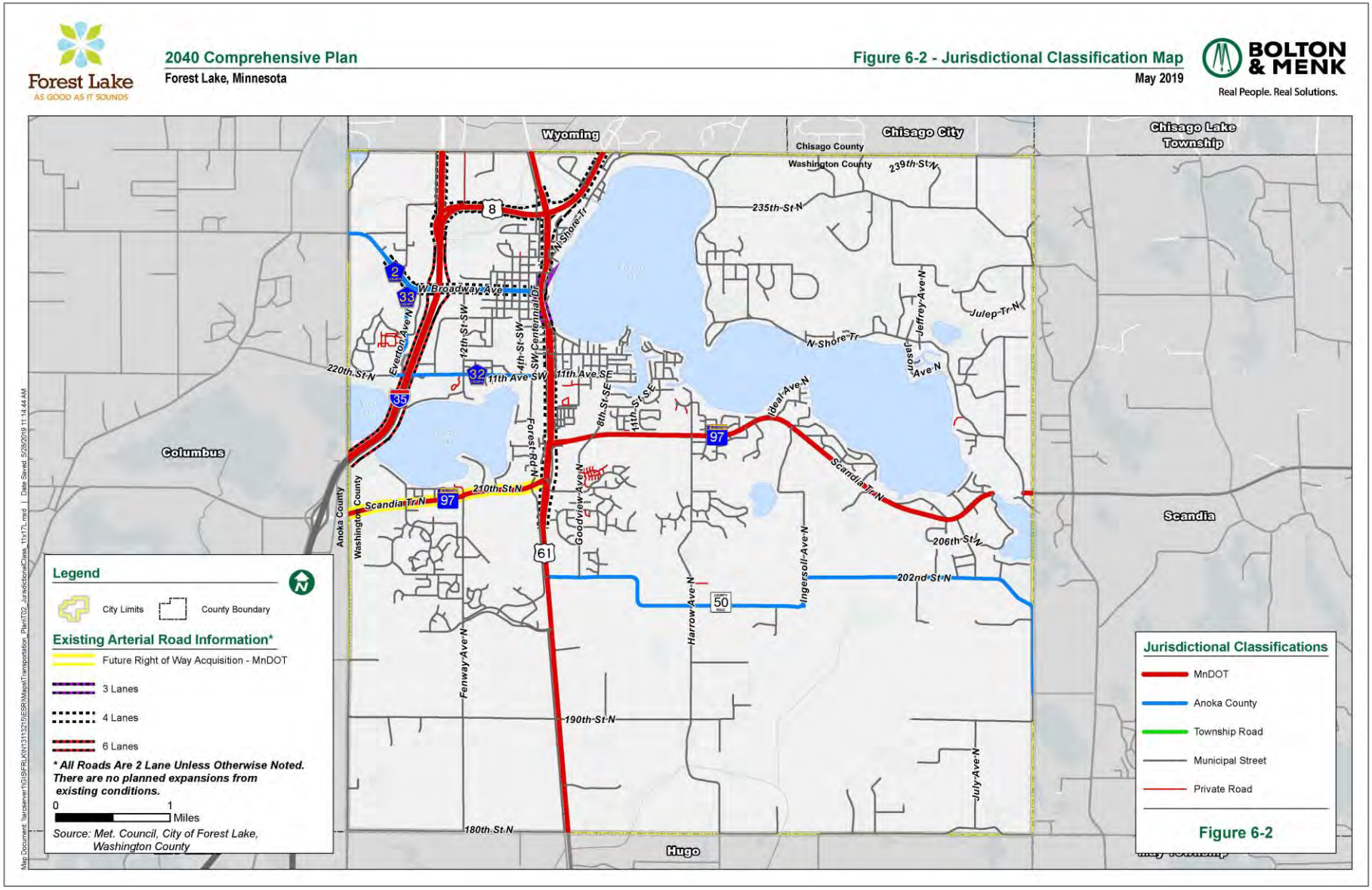


Figure 6-2 - Jurisdictional Classification Map



2. Functional Classification

The functional classification system is a roadway network that distributes traffic from neighborhood streets to collector roadways, then to minor arterials, and ultimately the Metropolitan Highway System. Roads are placed into categories based on the degree to which they provide **access** to adjacent land uses and lower level roadways versus providing higher-speed **mobility** for "through" traffic. Functional classification is a cornerstone of transportation planning. Within this approach, roads are located and designed to perform their designated function.

The roadway functional classification map for Forest Lake is presented on Figure 6-3**.** The roadway system presently consists of six functional roadway classifications:

- Principal arterial
- "A" minor arterial
- Other arterial
- Major collector
- Minor collector
- Local street

The Metropolitan Council has defined four sub-categories of "A" minor arterials: reliever, expander, connector, and augmenter. These sub-categories have to do primarily with Metropolitan Council's allocation of federal funding roadway improvements but do not translate into specific design characteristics or requirements.

For arterial roadways, the Metropolitan Council has designation authority. Local agencies may request that their roadways become arterials (or are downgraded from arterial to collector), but such designations or re-designations must be approved by the Metropolitan Council. The agency which has jurisdiction over a given roadway (e.g. Washington County or the City of Forest Lake) has the authority to designate collector status.

Principal Arterials

Principal arterials are the highest roadway classification and make up the Metropolitan Highway System. The primary function of these roadways is to provide mobility for regional trips, and they do not provide a direct land access function. They are intended to interconnect regional business concentrations in the metropolitan area, including the central business districts of Minneapolis and St. Paul. These roads also connect the Twin Cities with important locations outside the metropolitan area. Principal arterials are generally constructed as limited access freeways but may also be multiple-lane divided highways.

In Forest Lake, the principal arterials are:

- Interstate Highway 35 (I-35)
- U.S. Trunk Highway 8

"A" Minor Arterials

These roads connect important locations in the City of Forest Lake with access points of the Metropolitan Highway System and with important locations outside the city. These arterials are also intended to carry short to medium trips that would otherwise use principal arterials. While "A" minor arterial roadways provide more access than principal arterials, their primary function is still to provide mobility rather than access to adjacent land uses. The "A" minor arterial roadways in Forest Lake are identified in the table below:

Table 6-1 – "A" Minor Arterial Roadways			
Roadway	**From**	**To**	**Number of Travel Lanes (Total)**
W Broadway Avenue (CSAH 2)	West city limit	Lake Street S (TH 61)	4
Scandia Trail N (TH 97)	West city limit	East city limit	2
Forest Road N/Lake Street S (TH 61)	North city limit	South city limit	2 to 4

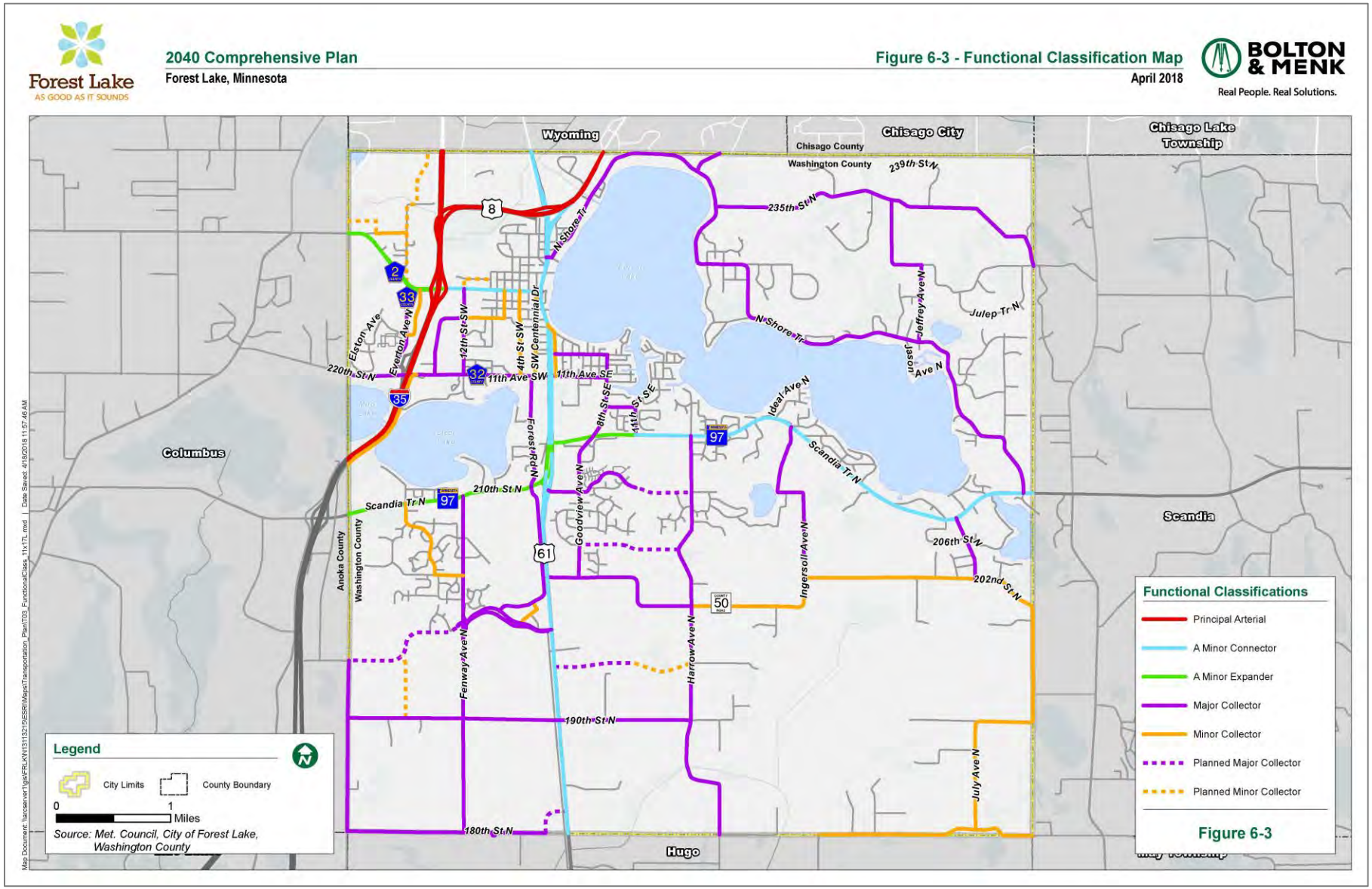
Other Arterials

In the past, this category was termed "B" minor arterials. Like "A" minor arterials, these roadways also serve more of a mobility function than access function. However, they may not have as much regional importance as "A" minor arterials and are not eligible for federal roadway improvement funding. There are currently no "other arterials" in the City of Forest Lake.

Major and Minor Collectors

Collector roadways provide a balance of the mobility and land-use access functions discussed above. They generally serve trips that are entirely within the city and connect neighborhoods and smaller commercial areas to the arterial network. Minor collectors generally are shorter in length, with lower volumes and lower speeds than major collectors. Collector roadways are identified in Figure 6-3.

Figure 6-3 - Functional Classification



3. Summary of Relevant Transportation Studies

A summary of transportation studies relevant to the City of Forest Lake's roadway system is provided below.

TH 97 and Surrounding Area Study (MnDOT, 2002)

While this study is dated, it remains important for travel within the City of Forest Lake. A number of the recommendations have been implemented, including upgrades of the two TH 97/TH 61 intersections (they were recently reconstructed as roundabouts), and traffic signal installation at the Everton Avenue and Fenway Avenue intersections, respectively. However, one of the central recommendations remains, and that is to expand TH 97 to 4-5 lanes[1] between I-35 and 11th Street SE (then CSAH 34).

Forest Lake Southwest Development Area Final Alternative Urban Areawide Review (City of Forest Lake, 2005)

This AUAR was prepared by the City of Forest Lake, collaborating with Washington County, to review anticipated development in an approximate area of 1,300 acres in an area generally bounded by the Forest Lake/Columbus border to the west, 202nd Street to the north, TH 61 to the East, and 190th Street on the south. Two development scenarios were evaluated. Both scenarios included a mix of residential, institutional, office, and light industrial land uses, with residential being the predominant use. While this study is somewhat dated, it is still relevant because the economic recession beginning in 2008 kept anticipated development from happening on the schedule anticipated in 2005.

The AUAR projected that the AUAR development would generate an additional 28,775 daily drips under Scenario 1, and an estimated 36,430 daily trips under Scenario 2. The AUAR assumed development of an east-west parkway between TH 61 and the westerly project border (connecting ultimately with Hornsby Street in Columbus to the west). The easterly portion of this roadway has been completed as Headwaters Boulevard, between TH 61 and Fenway Avenue.

The AUAR makes geometric recommendations for the following intersections which will provide primary access to and from the study area:

- TH 61/190th Street North
- TH 61/proposed parkway (now constructed as Headwaters Boulevard)
- TH 97/Everton Avenue
- 97/Fenway Avenue

These recommendations either have already been implemented, or will be implemented as required by on-going development of the study area.

In addition, the AUAR has following primary findings regarding adjacent Trunk Highways:

- TH 97 would need to be upgraded from two lanes to a 4-5[2] lane design to accommodate a 20-year traffic volume projection of 27,000 vehicles per day. The AUAR identifies that this finding is consistent with the recommendations of the TH 97 corridor study which had been conducted in 2002.
- At full buildout of the study area traffic volumes on TH 61 south of TH 97 will be 18,000 to 20,000 vehicles per day and that this will require an upgrade from two lanes to a 4-5 lane design.

[1] Two lanes in each direction plus center left turn lanes.
[2] Two lanes in each direction plus center left turn lanes.

TH 61 Aesthetics & Water Quality Improvements Planning Study (City of Forest Lake, 2012)

Prior to this study, the City of Forest Lake had improved its downtown roadways and streetscapes, creating more pedestrian friendly connections around the commercial core and to the lakefront. As a major link between TH 97, the downtown area, and TH 8, TH 61 offers opportunities to extend these improvements both north and south. The purpose of this study was to provide a flexible guide to implementing these improvements. In general, the primary goal was to improve the aesthetics and water quality of the TH 61 corridor.

The corridor is broken into three districts (excluding the core downtown area):

- North Gateway District (TH 8 to 2nd Avenue Northwest)
- Neighborhood/Commercial District (2nd Avenue Southwest to CSAH 83/11th Avenue)
- South Gateway District (CSAH 38/11th Avenue south to TH 97/Scandia Trail)

The study included extensive public outreach. Planning level recommendations were made appropriate to each of the three districts, respectively, regarding streetscaping, non-motorized access and comfort, and surface water management.

CSAH 23/TH97 at I-35 Project Summary Report (Anoka County with study partners, 2015)

This study was led by Anoka County, and study partners included MnDOT, Washington County, the City of Columbus, the City of Forest Lake, Federal Highway Administration (FHWA), the Metropolitan Council, and Rice Creek Watershed District. Its primary goals were to develop a preferred design concept for the proposed reconstruction of the interchange at I-35 and CSAH 23/TH 97, and to evaluate connecting roadway improvements. This study was important for Forest Lake because the current interchange experiences severe westbound-to-southbound backups during the a.m. peak travel time, stretching well into Forest Lake on TH 97.

Based on a review of multiple interchange design concepts, the study recommended a diverging diamond concept. This type of design facilitates heavy left turn movements onto the freeway, while also limiting right-of-way needs and potential environmental/social impacts. The study also provides recommendations regarding connecting roadway improvements. It recommends that TH 97 be expanded to a four-lane divided design between the interchange and relocated Hornsby Avenue just west of the Columbus/Forest Lake border. It projects that 2030 traffic volumes on TH 97 to the east of the interchange to range from 24,000 to 30,000 vehicles per day. It identifies that no expansion of TH 97 east of relocated Hornsby Avenue has been planned or programmed by MnDOT. The proposed interchange reconstruction scheduled to begin in 2018 and be completed in 2019.

Intersection Control Evaluation (ICE) Study – TH 97 at Goodview Avenue/8th Street (City of Forest Lake, 2017)

The intersection at TH 97/Goodview/8th Street currently has signal control. However, there are safety concerns with the intersection based on factors including:

- A pronounced skew of the northerly and southerly legs relative to TH 97
- The presence of a high school and a junior high school directly south-southwest of the intersection
- A pedestrian fatality at the intersection in June of 2016

The primary alternatives evaluated in the ICE report included: a) continuing with signal control, but realigning the minor legs to eliminate or at least reduce the existing intersection skew, and b)

reconstruction of the intersection as a roundabout. Both alternatives included a pedestrian overpass of TH 97 west of the intersection.

Based on the evaluation in the ICE, the roundabout concept was selected as the preferred alternative. The roundabout design was superior from a vehicular and pedestrian safety perspective and was comparable to the no/reduced skew signalized alternative in terms of project operations. The roundabout and signalized alternatives were also comparable from a cost perspective.

The City has taken the lead on project development. MnDOT has contributed funds for their share of the roundabout improvements in 2020. The City may seek additional funding for their share through competitive grants or state aid funds, or some combination thereof.

TH 97 Access Management Study (MnDOT with study partners, currently underway)

MnDOT is currently leading this study with Washington County, the City of Forest Lake, the City of Scandia, and the Metropolitan Council as project partners. The study limits extend from TH 61 to CSAH 15 (Manning Avenue) in Scandia. All but a small portion of the corridor is within Forest Lake. The primary measures under review include:

- Access closure/consolidation
- Roadway widening for continuous shoulder
- Dedicated left and right turn lanes at strategic intersections

The primary benefit resulting from the measures being studied would be enhanced safety conditions. The study is nearing completion.

4. Transportation Planning and Development Issues

The locations described under this heading correspond with the location codes on Figure 6-4**.**

Interchange Connections

New I-35 W/E Interchange Serving Southern portion of Forest Lake – 180th Street Alignment *(Map Location 1)*

To support anticipated future development, the Forest Lake City Council wishes to advance the concept of using the 180th Street alignment to provide linkage to I-35W and I-35E. It is anticipated that linkage to I-35W would only be to the south, and the linkage at I-35E would be to the north and south. This concept would require further coordination with other agencies including MnDOT, Washington County, Anoka County, as well as the cities of Columbus, Hugo, and Lino Lakes. Pending coordination with these agencies and general agreement regarding the concept to be advanced, there are formal steps that would need to be taken to further develop that concept and secure the necessary approvals. These are summarized below.

MnDOT Metro District/Metropolitan Council/FHWA *Interchange Planning Review* process

This is a planning level process based largely on qualitative information. This would be a Type I Proposal. The primary goal of this process is to evaluate conformity with the Appendix F criteria in the Metropolitan Council's *Transportation Policy Plan*. These criteria dictate that the proposed project should:

- Support the Metropolitan Council's Regional Development Framework and Transportation Plan
- Support local comprehensive plans
- Access only principal arterials or A minor arterials
- Maintain operational integrity of the mainline

- Demonstrate objective need
- Typically provide minimum spacing as follows:
  - One-mile spacing within the I-494/I-694 beltway
  - Two-mile spacing outside the I-494/I-694 beltway

Federal Highway Administration Interstate Access Request

If the finding of the *Interchange Planning Review* process is that the project can move to the next level of development, the *Interstate Access Request* process would be initiated. This would be based on more technical data and analysis than the preceding process. National Environmental Policy Act (NEPA) review needs to be completed prior to this step. This would likely be an Environmental Assessment, or possibly an Environmental Impact Statement.

The steps in this process include:

- An early coordination meeting to assess project's need and feasibility (MnDOT Project Manager, FHWA Area Engineer, State Geometrics Engineer, Metro District Traffic Engineer, Metro District Traffic Engineering Freeway Analyst, along with City and County representatives).
- If the early coordination meeting results in "Proceed" determination, City and County would prepare a draft Engineering and Operational Analysis, including a conceptual layout. This would need to go through multiple MnDOT and FHWA reviews/approvals before final FHWA approval.

I-35/TH 8 Connections to North *(Map Location 2)*
With the upcoming I-35 resurfacing and interchange improvement project (2018/2019), the current westbound to southbound flyover will be replaced with a loop ramp at this location. The northbound to eastbound ramp will continue. The City supports, as part of a future project, southbound to eastbound and westbound to northbound connections as well.

Non-Interchange Studies/Improvements

CSAH 32 (11th Street SW)/4th Street SW/Forest Road N *(Map Location 3)*
CSAH 32 is a major collector roadway with a bridge over I-35. 4th Street is identified by the City as a minor collector, linking CSAH 32 with CSAH 2 and providing access to a range of land uses, most notably three schools: Forest View Elementary School, Forest Lake Elementary School, and Forest Lake Area Learning Center. High density residential housing is proposed east of 4th Street.

Washington County will be reconstructing this stretch of CSAH 32 in 2022 or 2023. It is recommended that a study be performed to evaluate the best configuration for this intersection when it is reconstructed. It will be very important to provide safe and effective pedestrian accommodations at this location due to the proximity of schools and other factors. Another important factor to consider is the potential for curving Forest Road to the west to be the southerly leg of this intersection. This would provide north-south continuity between TH 97 and CSAH 2, a distance of over 1.5 miles. It may also enable the CSAH 32/4th Street SW intersection to meet warrants for some type of traffic control and would improve access spacing along CSAH 32.

CSAH 33 (Everton Avenue N) from CSAH 2 (Broadway Avenue W) to CSAH 32 (222th Street N) *(Map Location 4)*
A project that will be implemented in the same timeframe as the CSAH 32 project will be CSAH 33 reconstruction between CSAH 2 and CSAH 32. This roadway provides an important linkage on the west side of I-35, particularly with the addition of the CSAH 32 bridge over I-35. The City will coordinate with Washington County to ensure that appropriate design factors are included such as effective access

for adjacent businesses, and non-motorized facilities and connections.

TH 61/1st Street/South Lake Shore Drive/4th Avenue *(Map Location 5)*
These four roadways, including a one-way northbound TH 61 service road, come together in a manner which can be confusing to motorists and cause awkward turning movements. It is recommended that a study be performed to evaluate ways to simplify access design in this area and therefor improve operational and safety conditions. Pedestrian accommodations will also be an important topic.

12th Street between CSAH 2 and 5th Avenue *(Map Location 6)*
12th Street is identified by the City as a major collector connecting CSAH 2 and CSAH 32. Between CSAH 2 and 3rd Avenue, it is a four-lane undivided roadway with no center left turn lanes; south of this it transitions to two-lane undivided. The ¼ mile stretch between CSAH 2 and 3rd Avenue provides access for large commercial outlets including a Walmart Supercenter, an Aldi grocery store, an Office Max and Northern Tool and Equipment. Other commercial outlets with access to this stretch of 12th St include a Holiday Station and fast food restaurants. This stretch carries approximately 17,300 vehicles per day based on 2014 data. There is a Target store south of 3rd Avenue and west of 12th Street.

This is one of the busiest stretches of local roadway within Forest Lake. It is recommended that a study be conducted at this location to identify operational and safety improvements. Intersection improvements should be evaluated at the main access to Walmart approximately 900 feet south of CSAH 2 as well as at the 12th Street/3rd Avenue intersection.

12th Street between 5th Avenue and CSAH 32 *(Location 7)*
This stretch of 12th Street is under-designed relative to its status as a major collector in the City's road network with traffic volumes up to 10,000 vehicles per day (vpd). It is a narrow roadway with no shoulders, inconsistent and outdated drainage design, and inadequate pedestrian accommodations. It was slated for reconstruction in the mid- to late-2000s, but the decision was made to defer this project until after other major projects in this general portion of the City had been completed. This project now needs to be revisited. The project could also include transitions north to 3rd Avenue.

TH 61/4th Avenue NW/NE *(Map Location 8)*
The block bounded by TH 61, 4th Avenue NW, Hardwood Creek Regional rail, and 3rd Avenue NW is currently undergoing redevelopment. There currently are multiple intersections along 4th Avenue in the vicinity of the TH 61/4th Avenue NW/NE intersection, including an existing westerly TH 61 frontage road connecting 3rd Avenue NW and 4th Avenue NW, and North Shore Drive. With the additional traffic anticipated with the redevelopment referenced, it is recommended that the TH 61/4th Avenue NW/NE intersection area be studied to evaluate access improvements which would provide operational and safety benefits into the future.

North Shore Drive (TH 61 to TH 97) *(Map Location 9)*
This is a former County State Aid Highway which continues to serve a major collector function as a City roadway. In contrast to its function, it has a high concentration of driveways and has limited non-motorized accommodations. It has poor sight lines at a number of locations. A common complaint of local residents is that speeds along this roadway are too high for safe vehicular and non-motorized conditions. A speed study of this roadway was conducted in 2017; on the basis of this study, the legal speed limit was lowered from 40 miles per hour (mph) to 30 mph between Greenway Avenue and Heath Avenue, and from 40 mph to 35 mph between Heath Avenue and TH 97.

Further analysis of this roadway is recommended. Issues/improvements to evaluate include:

- Potential transition to urban section design to allow improvements within tight right-of-way
- Improved non-motorized facilities

TH 97 Access Management and Safety Improvements *(Map Location 10)*
As discussed previously, MnDOT, coordinating with other agencies including the City of Forest Lake, is currently conducting the *TH 97 Access Management Study* covering the segment from TH 61 to CSAH 15 (Manning Avenue) in Scandia. The study addresses closing/consolidating access points where feasible and appropriate, and making safety improvements at key intersections including Harrow Avenue and North Shore Trail. The City of Forest Lake will continue to work with MnDOT to evaluate and implement the recommended improvements to improve safety conditions along this stretch of TH 97.

TH 97 at Goodview Avenue/8th Street SE *(Map Location 11)*
While this intersection is within MnDOT's TH 97 access management study area, the City of Forest Lake took the lead on studying improvements at this specific location. This study and its recommended roundabout and pedestrian overpass have been summarized under an earlier heading. The City has taken the lead on advancing this project. MnDOT has contributed funds to cover their portion of the roundabout improvements in 2020. The City may seek additional funding for their share through competitive grants or state aid funds, or some combination thereof.

TH 97 between I-35 and TH 61 *(Map Location 12)*
As referenced earlier in this Transportation Chapter, the *TH 97 and Surrounding Area Study* (MnDOT, 2002) recommended that TH 97 would ultimately need to be expanded to 4-5 lanes[3] between I-35 and 11th Street (then CSAH 34). The upcoming reconstruction and expansion of the I-35/TH 97 interchange should significantly alleviate existing westbound queuing and congestion issues along this stretch, which is the most pressing need. However, current traffic volumes are at the upper bound of the planning level capacity of a 2-lane highway such as TH 97. The 2040 projected volume for this stretch of roadway ranges from 30,500 to 35,000 vehicles per day (see Roadway System Plan section, and Figure 6-6), which greatly exceeds this capacity threshold. The City will coordinate with MnDOT and Washington County to plan for the expansion of this roadway. This will include evaluating upgrades to the intersections at Fenway Avenue and Everton Avenue, respectively, and will include applicable right-of-way acquisition.

TH 97 at Forest Road N *(Map Location 13)*
MnDOT in the past has considered restricting access at this intersection. Forest Road would not support this type of restriction, because Forest Road represents a key access link for this part of the City. It provides the sole access roadway for over 75 residences between Clear Lake and Forest Road, north of TH 97. In addition, it provides an important route for emergency Police response from the new City complex between TH 61 and Forest Road south of CSAH 32. The City desires at least partial access at this location in the form of a right-in/right-out or ¾ intersection (right-in/right-out plus eastbound left turns) be maintained. If access does need to be limited, this would provide support for the consideration of a roundabout at Fenway Avenue North to facilitate motorists traveling south on Forest Road who wish to proceed east on TH 97 or north/south on TH 61. In addition, the City recommends future plans for an overpass bridge for Forest Road over TH 97 when the segment of TH 97 between I-35 and TH 61 is improved as referenced above.

Harrow Avenue Right-of-Way Acquisition and Expansion *(Map Location 14)*
Harrow Avenue is currently a narrow 2-lane roadway which was designed for generally rural use. As extensive anticipated development takes place in the central portion of the City, Harrow Avenue will become an increasingly important urban major collector roadway. Design needs should be evaluated regarding the appropriate ultimate design for this roadway, which would at minimum include shoulders, dedicated left and right turn lanes, improved drainage, and non-motorized accommodations including a multi-purpose trail. Right-of-way will need to be secured, accordingly.

County Road (CR) 50 Alignment and Trail *(Map Location 15)*
CR 50 (202nd/200th Street/Keystone Avenue/192nd Avenue) runs from TH 61 on the west to CSAH 15

[3] Two lanes in each direction with center left turn lanes.

(Manning Avenue in Scandia) to the east. Thus, it is almost entirely within the City of Forest Lake. It has an unusual alignment within the central portion of Forest Lake, in that it drops south approximately ¼ mile for a 1 and ½ mile stretch. This results in four right angle turns.

The City and Washington County should coordinate to evaluate future alignment options for this roadway. One alternative would be to smooth the transition between the 200th Street alignment and the 202nd Street Alignment east of TH 61. Another may be to connect the 200th Street alignment south to Headwaters Parkway at TH 61. An important consideration in this analysis would be the potential to construct a multi-purpose trail adjacent to the roadway. CR 50 represents the best roadway alignment to provide a continuous east-west trail in Forest Lake east of TH 61.

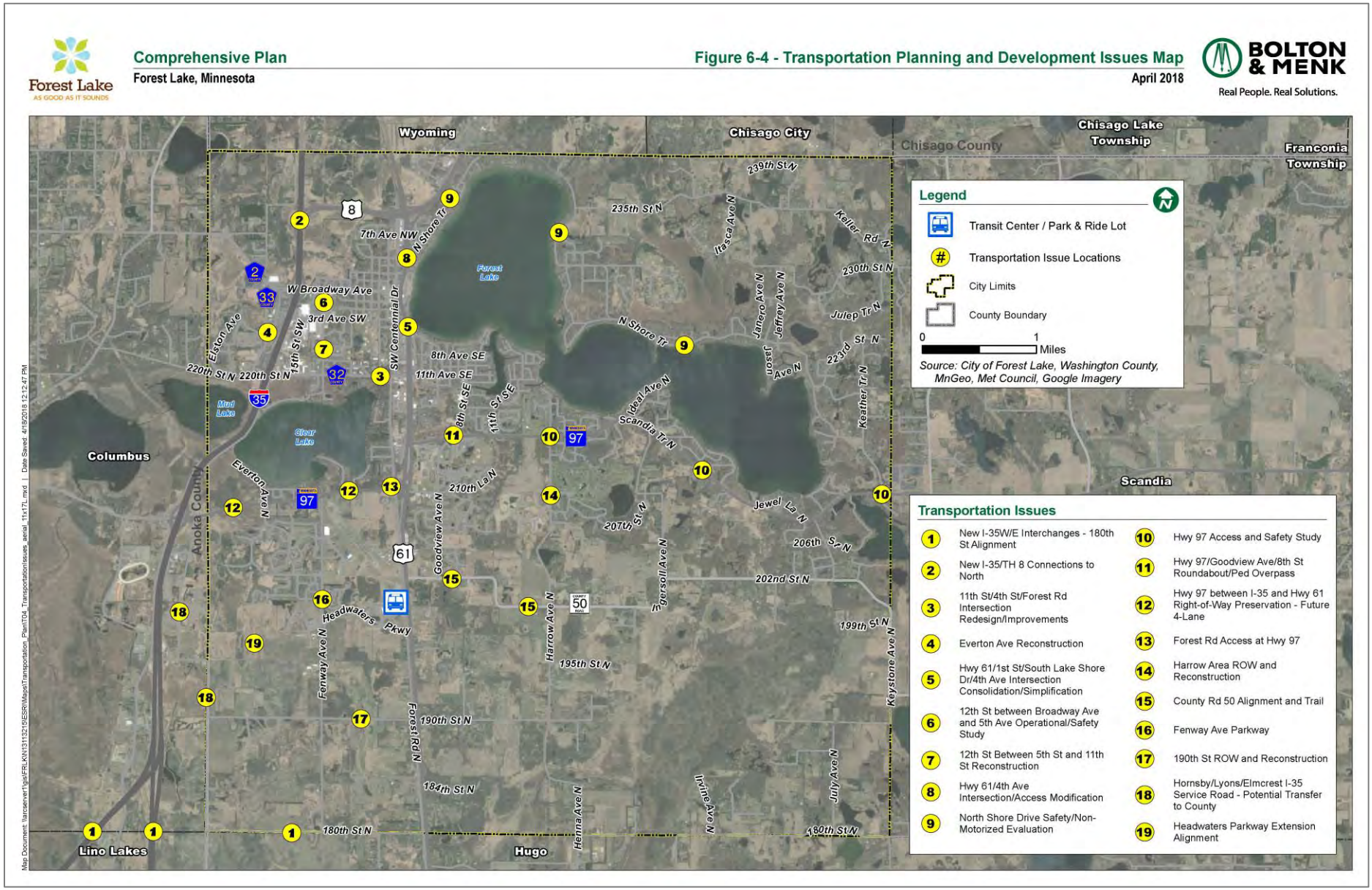
Fenway Avenue Parkway *(Map Location 16)*
Fenway Avenue south of 202nd Street is planned as a parkway design. The alignment of the current unimproved segment of Fenway Avenue may vary when the road is improved to accommodate a parkway design. The required right-of-way for the future improvements will be more than a standard City collector street. Also, the existing segment of Fenway Avenue may be modified to a parkway design by installing landscaped islands in some areas where the existing center turn lane is not necessary.

190th Street Right-of-Way Acquisition and Expansion *(Map Location 17)*
As referenced early in this Transportation Chapter, 190th Street is the southern border of the *Southwest Development Area AUAR* study area. It is currently a rural gravel roadway. As development in the AUAR area moves south, 190th Street will need to be upgraded accordingly, consistent with its status as a major collector roadway. Design needs should be evaluated to determine the appropriate ultimate design for the roadway. This would include right-of-way identification and acquisition.

Hornsby Street/Elmcrest Avenue/Lyons Street (24th Street in Hugo) *(Map Location 18)*
The City envisions that these roadways should be improved to provide a continuous easterly I-35 support roadway linking the existing interchange at TH 97 south to Anoka CSAH 14 (Main Street)/Washington CSAH 8 (Frenchman Lake Road) just east of I-35E in Centerville/Hugo. This concept requires coordination with the City of Columbus and Washington County. This road would also support a new interchange between the existing ones at TH 97 and Anoka CSAH 14. The City envisions that this roadway would most appropriately be transferred to Washington County.

Headwaters Parkway Extension *(Map Location 19)*
Consistent with the recommendations of the previously referenced *Southwest Development Area AUAR*, Headwaters Parkway has been constructed between Fenway Avenue and TH 61. Construction of this roadway west of Fenway Avenue has also commenced. Evaluation is required regarding the design, alignment, and ultimate westerly terminus of Headwaters Parkway west of Fenway Avenue. This evaluation would consider the improvements to and alignment of Hornsby Street/Elmcrest Avenue/Lyons Street referenced above.

Figure 6-4 - Transportation Issues



C. Roadway System Plan

1. 2040 Traffic Projections and Capacity Deficiency Analysis

Transportation Analysis Zones and Estimated 2040 Volumes
Transportation Analysis Zones (TAZs) are used to project future traffic volumes. Each TAZ has demographic and employment information that translates to vehicular trip origins and destinations. A map of Forest Lake TAZs is provided in Figure 6-5. The anticipated future land use patterns discussed in the Land Use chapter of this Comprehensive Plan were assumed for the 2040 TAZ allocations identified in Table 6-2, below**.**

Table 6-2 – 2040 Forest Lake TAZ Data

TAZ	*2020*			*2030*			*2040*		
	HH	*Pop*	*Jobs*	*HH*	*Pop*	*Jobs*	*HH*	*Pop*	*Jobs*
2264	142	355	320	250	600	330	300	705	335
2265	200	500	160	250	600	165	300	704	168
2266	410	1,025	500	500	1,200	510	600	1,409	518
2267	700	1,750	990	1,650	3,960	1,020	1,835	4,312	1,101
2268	900	1,995	980	960	2,020	990	1,100	2,585	1,012
2269	300	750	1,330	310	780	1,340	350	822	1,363
2270	270	675	770	280	690	770	300	705	774
2271	350	875	440	390	936	520	450	1,057	600
2272	1,000	2,870	654	1,250	3,027	1,019	1,500	3,525	1,255
2273	90	225	230	200	480	260	250	588	301
2274	620	1,550	390	690	1,656	460	1,000	2,350	522
2275	1,604	4,010	650	1,677	4,089	700	1,800	4,230	752
2276	750	1,890	150	780	1,980	150	1,000	2,350	185
2277	360	800	120	380	900	130	425	997	175
2278	360	900	70	380	912	80	450	1,057	80
2279	66	180	6	70	180	6	100	235	6
2280	98	200	10	98	220	10	100	235	13
2281	20	50	10	20	60	10	30	70	10
2282	90	225	0	90	235	0	110	259	0
2283	270	675	20	275	675	30	300	705	30
TOTAL	**8,600**	**21,500**	**7,800**	**10,500**	**25,200**	**8,500**	**12,300**	**28,900**	**9,200**

Source for totals: Metropolitan Council

Estimated 2040 traffic volumes for roadways in Forest Lake are presented in Figure 6-6. These projections are based on the following methodology:

- Review of forecasts from the 2030 Forest Lake Comprehensive Plan
- Historic trend analysis for volumes on individual roadway segments
- Consideration of local context and anticipated development patterns
- Comparison with the results of Washington County's 2040 forecasts and other studies where appropriate

Figure 6-5 - TAZ

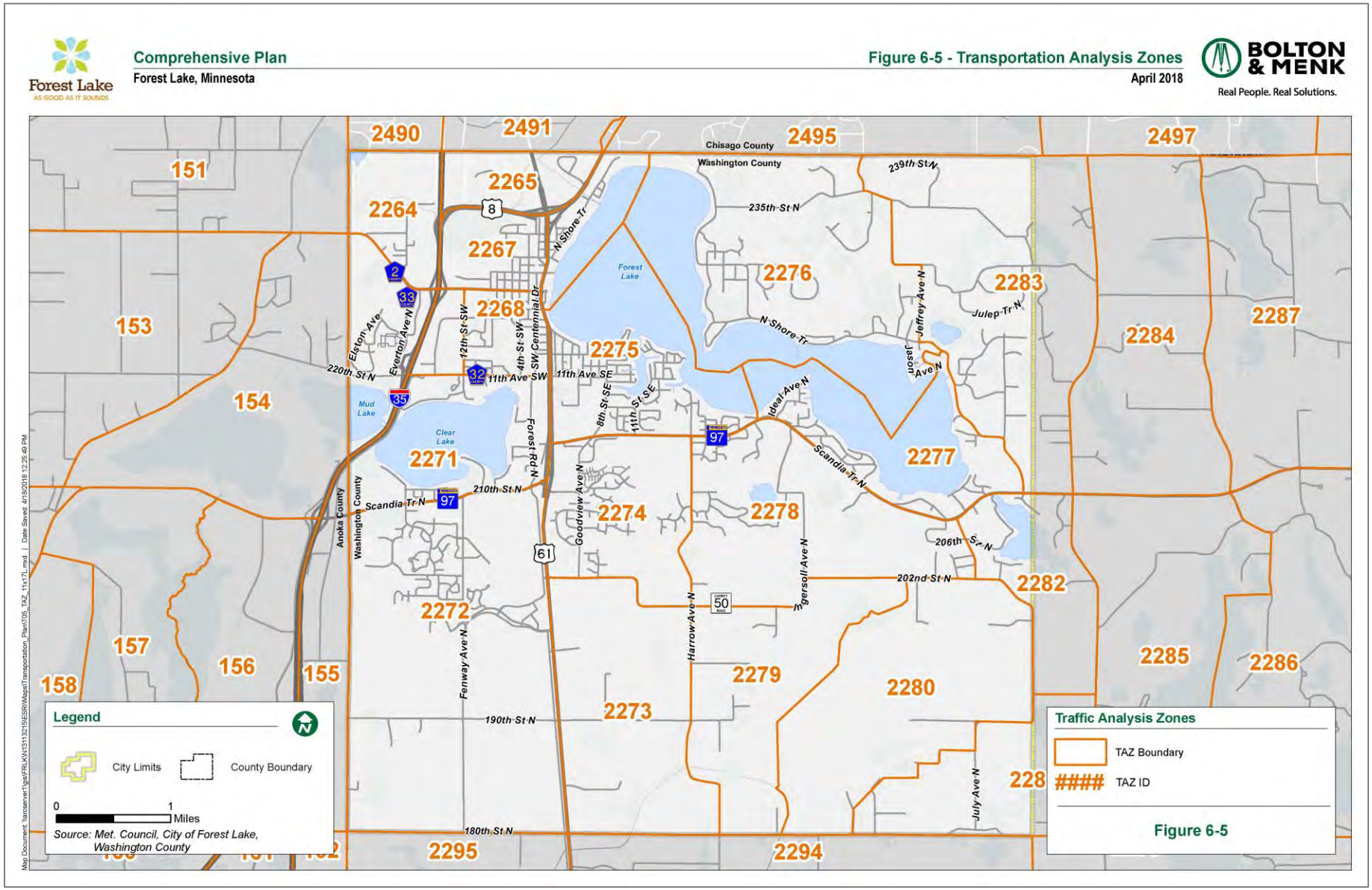
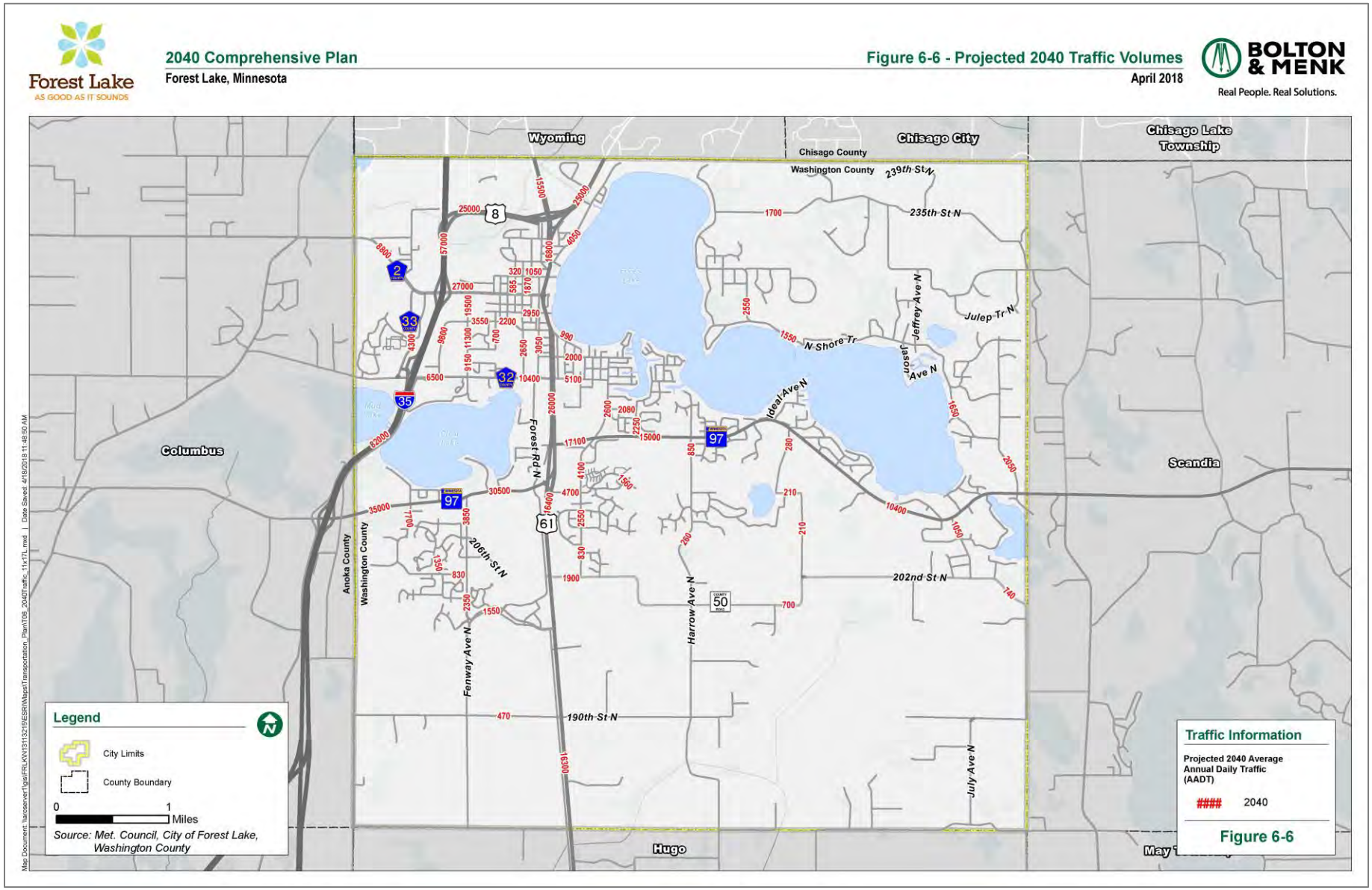


Figure 6-6 - Projected 2040 Traffic Volumes



2. Future Capacity Deficiencies and Recommendations

A planning-level assessment was performed to identify roadway segments where segment capacity problems (congestion) could occur by 2040. The volumes were taken from the 2040 projections discussed above. The capacity is based on typical capacity levels for different and configurations of roadways as summarized in Table 6-3.

Table 6-3 – Planning Level Roadway Capacity by Roadway Type

Roadway Type	Capacity
2-lane local/residential road	1,000
Rural 2-lane minor collector	7,700
Urban 2-lane minor collector	1,700
Rural 2-lane undivided major collector/minor arterial	16,000
Urban 2-lane undivided major collector/minor arterial	11,000
Urban 3-lane major collector/minor arterial	22,000
Urban 4-lane undivided major collector/minor arterial	22,000
Urban 4-lane divided minor arterial	32,000
Rural 4-lane expressway	61,000
Rural 4-lane freeway	71.000
Rural 6-lane freeway	107,000

Source: Bolton & Menk, Inc., Sixth Edition HCM methods

The results of this assessment are summarized in Table 6-4.

Table 6-4 – Projected 2040 Congestion Levels

Roadway	Segment	Congestion Condition
Scandia Trail N (TH 97)	West city limit to Goodview Avenue N/8th Street E	Over capacity
Scandia Trail N (TH 97)	Goodview Avenue/8th Street E to Harrow Avenue N	Approaching capacity*
Forest Boulevard N (TH 61)	South city limit to Scandia Trail N (TH 97)	Over capacity
Lake Street S (TH 61)	4th Avenue SW/S Shore Drive to W Broadway Avenue (CSAH 2)	Over capacity
Forest Boulevard N (TH 61)	TH 8 to north city limit	Approaching capacity*
West Broadway Avenue (CSAH 2)	I-35 to Lake Street S (TH 61)	Approaching capacity*
12th Street SW	W Broadway Avenue (CSAH 2) to 3rd Avenue SW	Approaching capacity*

*85% of planning level capacity

It can be seen that most of the roadway segments projected to be approaching or over capacity in 2040 are either on state (TH 97, TH 61) or county highways (CSAH 2). The City of Forest Lake will coordinate with MnDOT and Washington County to monitor congestion levels on these roadways and plan for improvements as appropriate. It may be noted that projected 2040 volumes on Scandia Trail N (TH 97) between I-35 and Forest Road N (TH 61) greatly exceed capacity, and in fact are currently at the upper bound of capacity; further information is provided in the previous Transportation Planning and Development Issues section (Issue/Map Location 12). 12th Street SW south of W Broadway Avenue (CSAH 2) has also been discussed in the Transportation Planning and Development Issues section (Issue/Map Location 6).

Please note that this review covers long term assessment for **roadway segments only**. It does not cover individual intersection locations which may require more short term and detailed study.

3. Future Functional Classification

The roadway functional classification map is provided as Figure 6-3. This includes planning level alignments for collector roadway extensions.

4. Future Jurisdictional Classification

The City of Forest Lake proposes the consideration of improving Hornsby Street//Lyons Street/Elmcrest Avenue as an easterly I-35/I-35E service road extending south to Anoka CSAH 14 (Main Street)/Washington CSAH 8 (Frenchman Lake Road) just east of I-35E in Centerville/Hugo. The City feels that this roadway would most appropriately be under County, rather than local, jurisdiction.

The City understands that MnDOT and Washington County have considered a jurisdictional transfer of TH 61 to the County.

5. Access Management

Access management refers to balancing the need for connections to local land uses (access) with the need for network-level movement (mobility) on the overall roadway system. By functional classification category, this may be summarized as follows:

- Arterials generally have limited access in the form of driveways and low volume side streets because their role in the network is to support relatively long, high speed traffic movements
- Collectors link local streets to arterials and allow a greater degree of access, given their combined mobility/access function
- Local streets have relatively few limits on access because their primary function is to provide access to adjacent land uses

Appropriate access control preserves capacity on arterial and collector streets, and improves safety conditions, by separating local turning movements and conflicts from higher-speed "through" traffic. Moreover, it concentrates higher volume traffic linkages at intersections controlled with traffic signals, roundabouts, or other measures.

MnDOT and Washington County Roadways in Forest Lake are identified in Figure 6-2. For MnDOT roadways, MnDOT access management guidelines apply. Similarly, for County roadways, Washington County's access management guidelines apply. MnDOT's access management guidelines are described in detail in their Access Management Manual.[4] When reviewing MnDOT's access guidelines, Hwy 97 in Forest Lake is classified as 5B (urban/urbanizing minor arterial). Washington County access management guidelines may be found in the Transportation section of their current Comprehensive Plan.[5] Summary access management tables for MnDOT and Washington County, respectively, are provided in Appendix D.

Land use planning and subdivision regulation are the responsibility of the City. In conjunction with local land planning, Forest Lake requires that new land development comply with MnDOT and County access management guidelines for roadways under these agencies jurisdiction, respectively. The City will work with MnDOT and Washington County to consolidate driveway and street access to collector and arterial roadways where applicable and feasible.

For City streets that are collector roadways, the City's access management guidelines closely follow Washington County's guidelines. It is recognized that these guidelines cannot be met in all cases. However, such exceptions are subject to review and approval by the City.

[4] http://www.dot.state.mn.us/accessmanagement/resources.html
[5] https://www.co.washington.mn.us/DocumentCenter/View/125

6. Right-of-Way Preservation

Arterial Roadways
Consistent with Metropolitan Council requirements for 2040 Comprehensive Plans, Figure 6-2 identifies that right-of-way needs to be preserved in the TH 97 corridor for the expansion of this road to a 4-lane facility. This acquisition is the primary responsibility of MnDOT. The City will coordinate and support as appropriate. The City will also coordinate with MnDOT regarding any right-of-way needs for potentially expanding TH 61 south of TH 97.

City Collector Roadways
The need for right-of-way acquisition for City collector roadways falls into two primary categories:

- Expanding/improving existing roadways
- Constructing new alignments

As discussed in the Transportation Planning and Development Issues section, the primary existing roadways that will need to be upgraded, and right-of-way may be required, include the following:

- Harrow Avenue
- 190th Street
- 180th Street
- Fenway Avenue (conversion to parkway)

At a planning level, future collector alignments are depicted on Figure 6-3. These alignments may require further study and/or coordination prior to right-of-way acquisition.

D. Transit

1. Transit Market Area

The Metropolitan Council has identified Forest Lake as a Freestanding Town Center in the 2040 Transporation Policy Plan. In addition , the TPP identifies three other Transit Market Areas within the City of Forest Lake: Market Areas III (with Emerging Market designation) IV and V. As identified in Appendix G of the Metropolitan Council's 2040 Transportation Policy Plan (TPP), the characteristics of and typical transit service for these category areas are summarized:

- *Freestanding Town Center:* areas that historically grew independently of Minneapolis and St. Paul and are still separated from the urban and suburban areas of the metro by rural land. Because of their concentrated downtowns laid out in a traditional urban form, these areas have a Transit Market Index value that would indicate Market Area III or better. However, their relatively small population and land area, as well as their distance from other transit-supportive land uses, limits the potential for local fixed-route transit.

- *Transit Market Area III*: has moderate density but tends to have a less traditional street grid that can limit the effectiveness of transit. It is typically urban with large portions of Suburban and Suburban Edge communities. Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route service is not viable.

  With an *Emerging Market* overlay, this area has been identified as a location that has a higher potential for transit usage than its surrounding market areas. These areas are currently too small or non-contiguous to support a higher level of transit service. Focusing growth in an around these areas to connect to other areas of higher potential transit use will present good opportunities for future transit improvement.

- *Transit Market Area IV*: has lower concentrations of population and employment and a higher rate of auto ownership. It is primarily composed of Suburban Edge and Emerging Suburban Edge communities. This market can support peak-period express bus services if a sufficient concentration of commuters likely to use transit service is located along a corridor. The low density development and suburban form of development presents challenges to fixed-route transit. General public dial-a-ride services are appropriate in Market Area IV.

- *Transit Market Area V:* has very low population and employment densities and tends to be primarily rural communities and Agricultural uses. General public dial-a-ride service may be appropriate here, but due to the very low-intensity land uses these areas are not well-suited for fixed-route transit service.

2. Current and Planned Service and Facilities

The current and planned transit service and facilities in the City of Forest Lake are depicted on Figure 6-7 and summarized below:

Scheduled Bus Service

- Metro Transit Bus Service
    - *Routes 275 and 288*: Both enter Forest Lake from the west providing service along Scandia Trail N (TH 97), turning south onto Fenway Avenue N, and then left onto Headwaters Parkway near its intersection with Forest Boulevard N (TH 61). At this location, the routes loop around Forest Road N back to Headwaters Parkway. Route 275 provides access to St. Paul and Route 288 to Minneapolis.
- Planned improvements:
    - *2018-2020*: New circulator route (Route 221) in Forest Lake connecting to Forest Lake Transit Center. Route would run every 60 minutes via Cub Foods, Everton Ave, Broadway, 220th St, 12th St, Highway 61, 11th Ave, 8th St, Goodview, 202nd St, County Rd 50, and Forest Rd.

Transit Facility

- Forest Lake Transit Center located on Forest Road N. This Park & Ride facility contains 306 parking spaces and serves both Route 275 and 288. The facility can be accessed by either Fitzgerald Trail N or Forest Road N.

No future transit facilities have been identified at this time.

Rush Line Corridor

The Rush Line corridor is an 80-mile corridor between St. Paul and Hinckley, roughly following the path of TH 61 and I-35. The Rush Line Corridor was evaluated for bus and rail alternatives within a 30-mile study area between Forest Lake and Union Depot in downtown St. Paul starting in 2014. This evaluation built on the 2009 *Rush Line Corridor Alternatives Analysis*. Following a three-year development and evaluation process coupled with extensive public outreach, a Policy Committee recommended a 13-mile bus rapid transit (BRT) route between Union Depot and downtown White Bear Lake as the locally preferred alternative, or LPA, to be part of continuing planning and funding solicitation actions. The next step in the planning process for Rush Line BRT includes further discussion regarding opportunities for connector bus service between Forest Lake and White Bear Lake along existing roadways (see inset of Figure 6-8, below). The City supports efforts to link businesses and residents to local transportation alternatives and regional transit.

Figure 6-7 - Transit Service and Facility

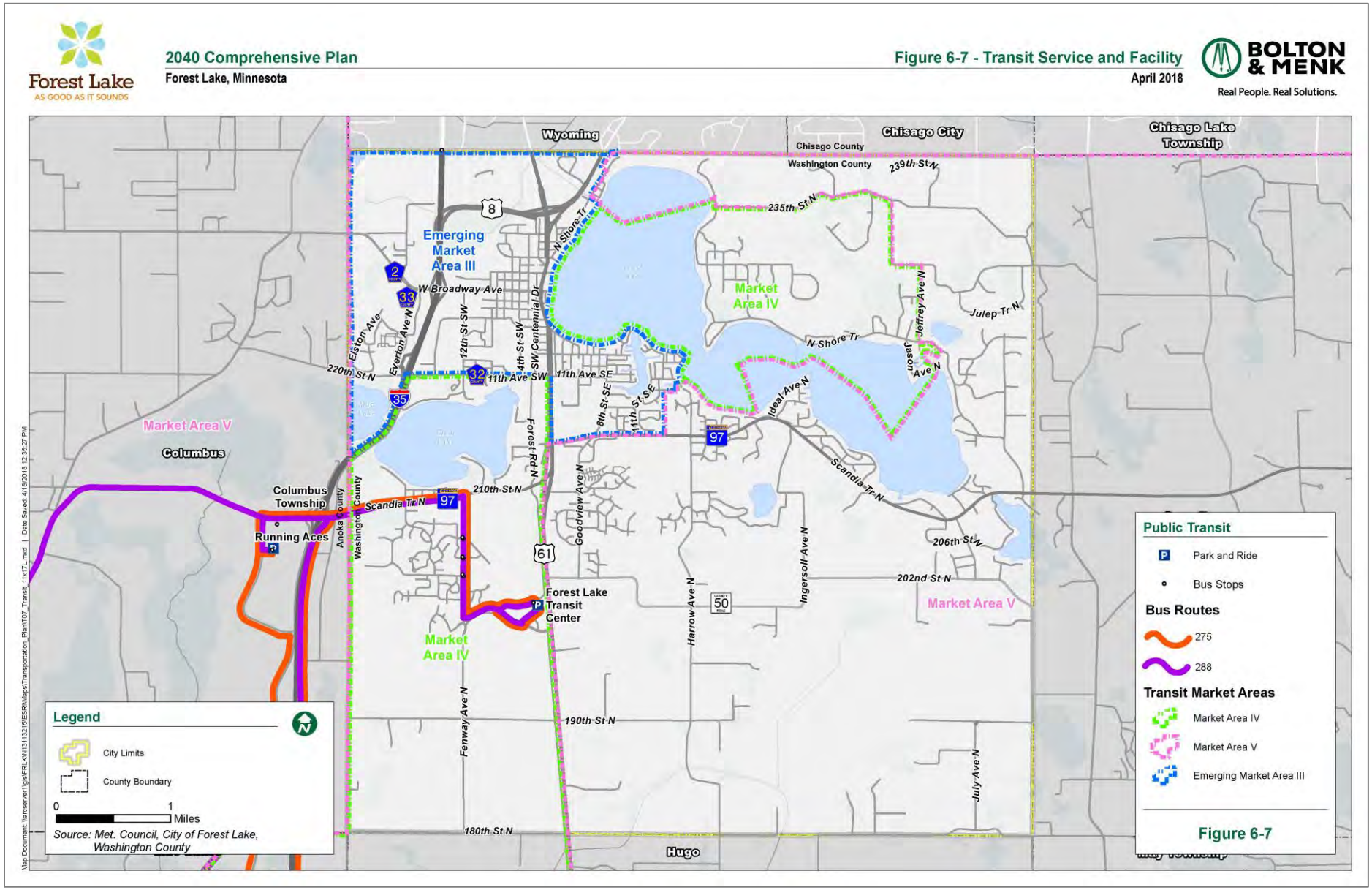
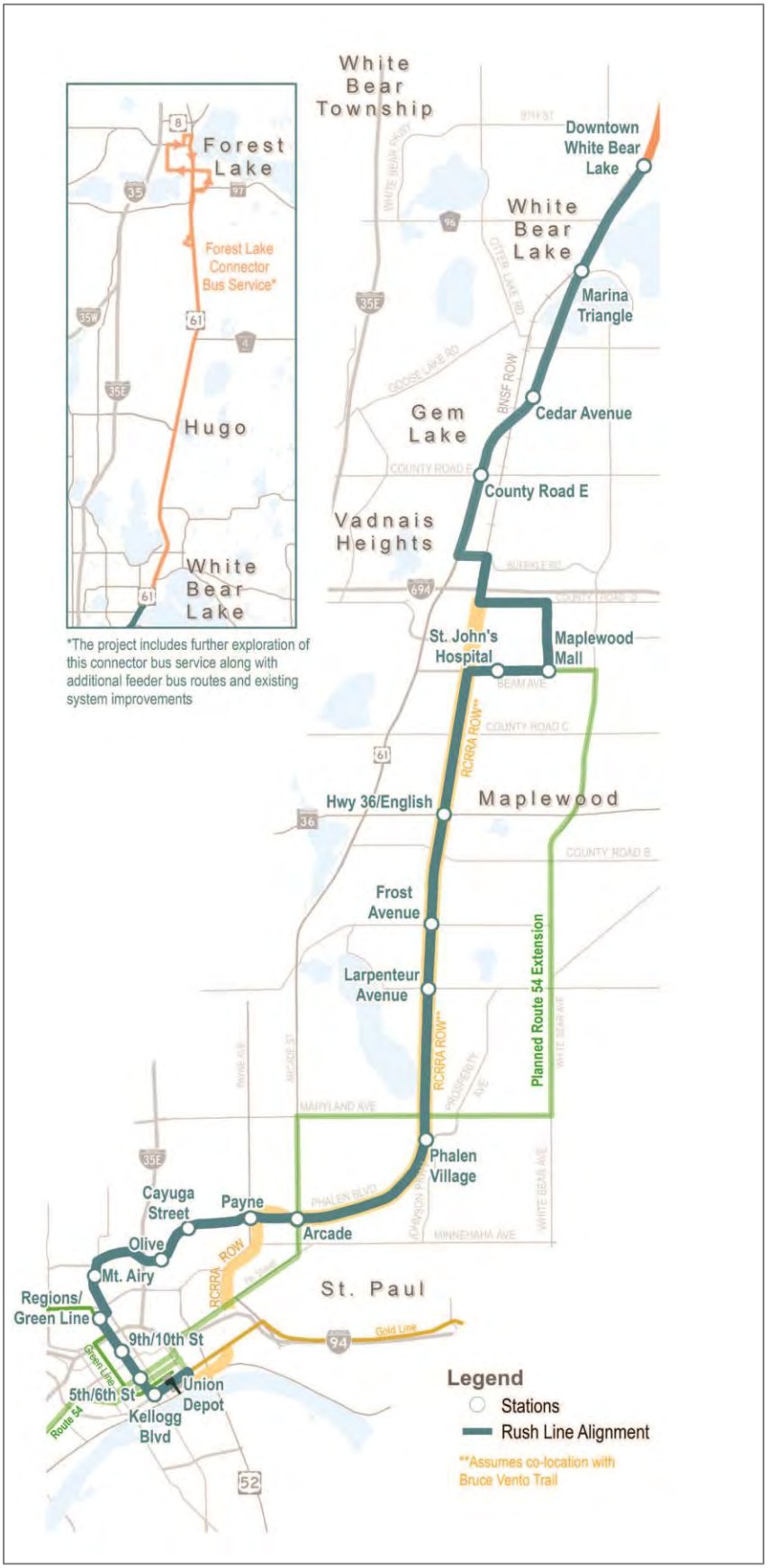


Figure 6-8 - Rush Line Corridor and Connector Exploration



Dial-a-Ride Service
Demand responsive transit service for all communities in Washington County is provided by Metropolitan Council Metropolitan Transportation Services (MTS) and consists of complementary services that are compliant with Americans with Disabilities Act (ADA) as well as general public dial-a-ride services.

- Transit Link – The Twin Cities' dial-a-ride minibus or van service for the general public where regular route service is not available within ½ mile (1/4 mile in winter). Fares are based on time of day and distance traveled.

These services are anticipated to continue in their current form into the foreseeable future.

E. Non-Motorized Transportation

In 2014, the City of Forest Lake prepared a *Parks, Trails, and Open Space Master Plan*. The primary goals of this document were to:

- Document existing resources
- Evaluate and understand on-going maintenance requirements and associated costs
- Provide a unified vision for facility improvements to meet the outdoor recreational needs of a growing and vibrant community

Material from the 2014 Master Plan is summarized in the Parks and Trails chapter of this Comprehensive Plan with updated information as appropriate. Existing and planned trail facilities are identified on Figure 5-2 within the Parks and Trails chapter**.**

The most important trail facility in Forest Lake is the Hardwood Creek Regional Trail. This is a Washington County trail that extends along an old railroad bed adjacent to Hwy 61 from Frenchman Road in Hugo to the Washington/Chisago County line in Forest Lake, a distance of 9.5 miles. There are actually two side-by-side trails; the paved portion is for bikers, hikers, in-line skaters, skiers, and snowshoeing, and the adjacent turf trail portion is for horses in the summer and snowmobiles in the winter. A key goal that the City has is to improve bicycle and pedestrian connections to this regional resource.

As seen on Figure 5-2 from the Parks and Trails chapter of this Comprehensive Plan, there are various local trail sections associated with different developments and roadway corridors. However, they are not yet sufficiently linked together within an overall network. Making these linkages an important goal for the City, which has identified an extensive list of specific projects, organized into First Priority, Second Priority, Third Priority, and Long Range Improvements (see Trails Implementation Plan map from the previously referenced *Forest Lake Parks, Trails & Open Space Master Plan* in Appendix E). Moving through these projects in a systematic manner will not only improve non-motorized access to specific features such as parks, schools, and work locations, but will also create an overall network of enduring value for existing and future residents. Through its development plan review process, the City will continue to require sidewalks and trails to ensure connectivity within developments as well as connectivity to the overall non-motorized network as it continues to expand. The City will continue to actively solicit funding through competitive grant programs to assist in its trail development program and will continue to coordinate with Washington County regarding regional trail planning and development.

F. Freight

Freight movement is not a major issue in Forest Lake. There are no railways, barge facilities, or truck/intermodal freight terminals within the City. Most truck traffic is generated in the area generally bounded by I-35 to the west, CSAH 2 to the north, 12th Street to the east, and CSAH 32 to the south. This area has a high percentage of retail and light industrial land use relative to the rest of Forest Lake. As discussed in the Transportation Planning and Development Issues portion of this Transportation chapter, it is recommended that a study or studies be performed to improve 12th Street through this overall area.

CSAH 2 was recently reconstructed by Washington County, and 32 is scheduled to be reconstructed in 2022 or 2023. CSAH 33 on the west side of the freeway is also scheduled to be reconstructed in this timeframe. Heavy Commercial Average Annual Daily Traffic (HCAADT) counts for principal and A-minor arterial roadways are depicted in Figure 6-1.

G. Aviation

The City of Forest Lake owns and operates the Daniel A. Deponti Municipal Airport ("the Airport"). This facility is located in an area generally bounded by TH 97 to the north, TH 61 to the east, the 202nd Street alignment to the south, and Fenway Avenue to the west (see Figure 6-9). It has one runway, which converted from a turf to a paved facility in 2016. The runway dimensions are 2,700 feet in length by 75 feet in width. It also has a parallel taxiway, an Arrival/Departure building, an aviation fueling station, and 15 privately-owned hangar buildings. It is categorized as an Intermediate Airport in the State Aviation System Plan. It is not a federally funded airport. Operating information for the 12-month period ending April 30, 2017 includes the following:

- 33 based aircraft (32 single-engine aircraft and one helicopter)
- Average 22 aircraft operations per day (landings plus takeoffs)
- 81 percent local general aviation users
- 19 percent transient general aviation users (aircraft based elsewhere)

With the recent runway improvement, it is anticipated that the Airport will play an expanding role in the regional aviation system. The City is not planning any airport expansions at this time. Additional hangar facilities may be developed in the future. There is sufficient land on the Airport for additional hangar facilities.

Through the Forest Lake Airport Zoning Ordinance (Chapter 153.44 of the overall City Code), airspace protection is provided to protect against hazards to air navigation. This includes controlling the height of structures adjacent to the Airport. In addition, any person(s) proposing a structure 200 feet or more above ground level located within the City shall notify and obtain the approval of the Federal Aviation Administration (FAA) and the MnDOT. Any proposed construction or alteration must include notification to the FAA should such activity contain a potential hazard to air navigation or electronic interference. These requirements are defined by federal regulations code CRF – Part 77.

The Forest Lake Airport Zoning Ordinance also defines safety zones and associated land use and structure restrictions at the ends of the runway and surrounding the Airport to ensure the safety of people and property in the surrounding area. These provisions are consistent with MnDOT's airport land use control template. No changes to this template are anticipated in the near future for facilities the size of Forest Lake Airport.

Airport noise has been raised as an issue in the past. The City will coordinate with residents regarding noise concerns. Operations at the Airport involve relatively small aircraft. There is not intensive development under the flight path of either runway end. Development adjacent to the Airport is controlled by the Forest Lake Airport Zoning Ordinance referenced above.

Figure 6-9 - Forest Lake Airport

VII. WATER RESOURCES

A. Sanitary Sewer

1. Forecast Table

The municipally owned sanitary sewer system provides service to approximately 75% of the residents and businesses in the City of Forest Lake while the remainder are served by privately owned individual sewer treatment systems. Based on Metropolitan Council population, household, and employment forecasts and existing conditions, the City of Forest Lake is anticipated to have the following sewer demands, as detailed in Table 7-1.

Table 7-1 – Population, Housing, & Employment Sewer Allocation Forecasts

	Forecast Component	2010	2020	2030	2040
Population	MCES Sewered	15,689	18,728	22,145	25,579
	ISTS/SSTS	2,688	2,772	3,055	3,321
Households	MCES Sewered	6,075	7,610	9,409	11,114
	ISTS/SSTS	940	990	1,091	1,186
Employment	MCES Sewered	6,449	7,800	8,500	9,200
	ISTS/SSTS	0	0	0	0

2. Existing System

Forest Lake's wastewater system currently consists of nearly 479,300 lineal feet of gravity sewer, 2,100 sanitary sewer manholes, 82,200 lineal feet of force main and 46 sanitary sewer lift stations. Capacities of the existing lift stations are presented in Table 7-2. The existing sanitary sewer system is shown in Figure 7-1. All of this infrastructure ultimately connects to the Metropolitan Council Interceptor 7029.

Forest Lake's system makes several connections at different locations with the primary connection point at 210th Street North and Highway 61 (CL4.1). Interceptor 7029 travels south through Forest Lake to meter number 043 (Metropolitan Council Lift Station L02) at the border with the City of Hugo. The treatment facility, Metropolitan WWTP, is designed to treat an average flow of 251 million gallons per day.

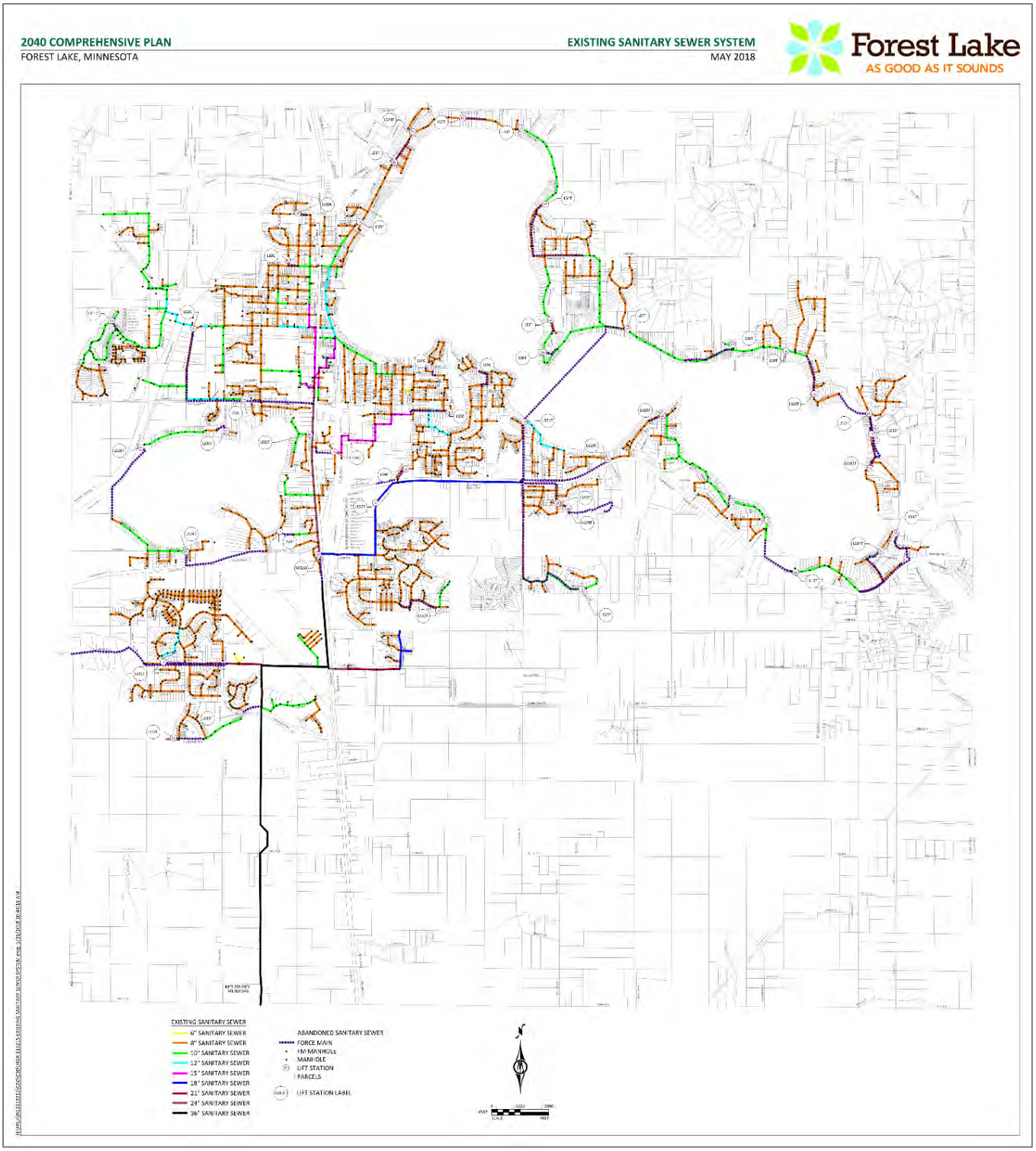
In addition to Forest Lake's flows, a portion of Columbus is currently sending sewage flow across the Forest Lake city limits and ultimately connect to the Met Council sewer at 202nd Street at Fenway Avenue. An intercommunity agreement between the City of Forest Lake and Columbus was executed in 2001 and requires a minimum available capacity from Forest Lake of 1.13 million gallons per day for flows from Columbus. Their current quarterly unmetered data available from the Metropolitan Council is approximately 29,000 gal/day.

Table 7-2 – Design Capacity of Existing Lift Stations

Lift Station Number	GPM
1T	175
2T	190
3T	330
4T	250
5T	220
6T	220

Table 7-2 – Design Capacity of Existing Lift Stations	
Lift Station Number	**GPM**
7T	420
8T	140
9T	240
10T	130
11T	150
12T	230
13T	120
14T	130
15T	170
16T	314
17T	350
18T	500
19T	627
20T	230
21T	1150
22T	210
23T	260
24T	310
25T	110
26T	200
27T	170
28T	150
29T	80
30T	10
31T	800
32T	310
33T	430
34T	84
1C	450
2C	1150
3C	500
4C	100
5C	200
6C	630
7C	200
8C	250
9C	350
10C	200
11C	300

Figure 7 -1 – Existing Sanitary Sewer System



3. Ultimate Sanitary Sewer System

Metropolitan Council Actual and Projected Wastewater Flow

Table 7-3 shows actual and projected MGD flows for the city's wastewater into Interceptor 7029.

Table 7-3 – Projected Community Wastewater Flows (MGD)			
2018	**2020**	**2030**	**2040**
1.60	1.80	1.98	2.17

The Metropolitan WWTP has sufficient capacity for future needs. Current flows average 178 million gallons per day. Planned 2040 capacity is 251 million gallons per day. Planned long-term capacity will be 280 million gallons per day. The City of Forest Lake will work with developers to encourage orderly development within existing sewer service areas before opening the next staged development area and expanding sewer services.

City Projected Wastewater Flow

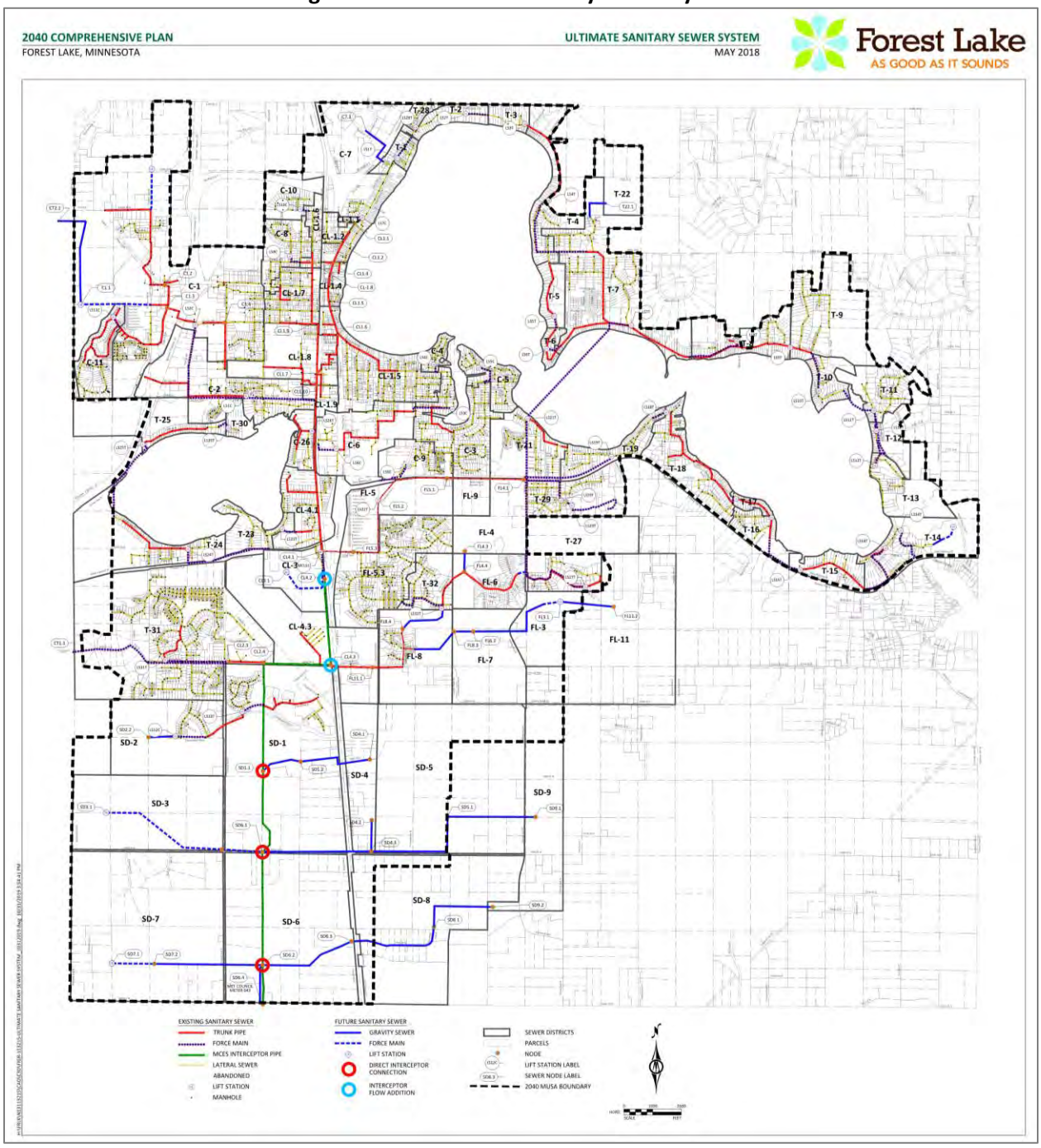
The flow projections presented in Table 7-3 are updates based on changes to the future land use plan from the 2030 Comprehensive Plan and are an update to the City's Comprehensive Sewer Plan dated November of 2008. The revised Municipal Urban Service Area (MUSA) for 2040 has also been incorporated into this update. Figure 7-2 shows the ultimate sanitary sewer system, sewer district areas and the 2040 MUSA. The updated ultimate average sanitary flow rates for the five districts are shown in Table 7-4.

Table 7-4 – Average Flows for the Full Development System	
Sewer District	**MGD**
Forest Lake District	1.0521
Clear Lake District	0.7846
City District	1.6750
Township District	2.0435
South District	3.1501
Total	8.7053

The total estimated average flow from the Table 7-4 is 8.70 MGD. This exceeds the Metropolitan Council projected average flow for 2040 by a factor of 4 to 1. One reason for this is that Forest Lake's ultimate build out will not occur by 2040. The other reason the average flow shown above is four times the 2040 flow projected by Metropolitan Council is that the purpose of the sewer model is to conservatively estimate demand at the municipal level so that no City trunk is undersized for its projected sewershed. Typical land use categories allow for a wide range of uses and the chance remains that localized heavy users of sanitary sewer capacity might locate in Forest Lake. To cover this possibility, Forest Lake continues to use the conservative design rates to design its ultimate system.

The City of Forest Lake and City of Columbus have engaged in conversations regarding the potential to provide sanitary sewer service through Forest Lake to a 230 single family unit development in the northeastern portion of Columbus.

Figure 7 -2 – Ultimate Sanitary Sewer System



Existing/Proposed Pipe Capacities for the Ultimate System

Tables 7-5 through 7-8 show the updated pipe capacities based on the changes to the 2040 future land use for each of the sewershed districts. These capacities reflect the 2040 condition that accounts for current land use and the expected changes in land use. The City of Forest Lake has analyzed wet and dry weather sanitary service flows in the downtown area in 2019 to develop a hydraulic model in 2020. The City will continue to build a regional sanitary system hydraulic model that will further identify current pipe capacities and impacts to future land use changes. As these results are generated, information will shared with Metropolitan Council.

The ultimate build out of the Forest Lake System will cause the need to increase the capacity of the system in a few locations. The City shall monitor these locations and address capacity issues as development continues to occur.

Table 7-5 - Existing/ 2040 Future Pipe Capcities for the Ultimate System: Forest Lake District

From Node	To Node								Capacity					
									Inlet Control		Outlet Control			
		(MGD)		(in)	(ft)	(ft)	(ft)	(%)	(cfs)	(MGD)	(cfs)	(MGD)	(MGD)	
FOREST LAKE DISTRICT														
FL4.1	FL5.1	2.21	Existing	18	2400	921.2	918.3	0.12	10.1	6.52	3.7	2.36	2.36	1.07
FL5.1	FL5.2	2.23	Existing	18	3410.0	918.3	914.0	0.13	10.1	6.52	3.7	2.41	2.41	1.08
FL5.2	FL5.3	2.61	Existing	18	2330	914.0	812.3	4.36	10.1	6.52	21.9	14.17	6.52	2.50
FL5.3	CL4.1	3.13	Existing	18	1000	911.6	901.3	1.03	10.1	6.52	10.7	6.89	6.52	2.08
FL4.3	FL4.4	0.23	Existing	10	2900	890.6	812.3	0.28	1.7	1.10	1.2	0.75	0.75	3.19
FL4.4	FL8.4	1.25	Proposed	18				0.12	10.1	6.52	3.6	2.35	2.35	1.87
FL8.4	FL11.1	1.48	Existing	21				0.09	14.8	9.56	4.8	3.07	3.07	2.07
FL11.2	FL3.1	0.74	Proposed	12	1000	912.0	910.0	0.20	3.7	2.39	1.6	1.03	1.03	1.39
FL3.1	FL6.2	1.01	Proposed	6" FM	4000	910.0	940.0	-	-	-	-	-	-	-
FL6.2	FL8.3	1.44	Proposed	15	1900	919.6	916.3	0.17	6.4	4.13	2.7	1.74	1.74	1.21
FL8.3	FL11.1	1.91	Existing	18	3400	915.6	911.5	0.12	10.1	6.52	3.6	2.36	2.36	1.23
FL11.1	CL4.3	3.41	Existing	21	1500	911.5	910.0	0.10	14.8	9.56	5.0	3.24	3.24	0.95

Table 7-6 - Existing/ 2040 Future Pipe Capcities for the Ultimate System: Clear Lake & City District

From Node	To Node								Capacity					
									Inlet Control		Outlet Control			
		(MGD)		(in)	(ft)	(ft)	(ft)	(%)	(cfs)	(MGD)	(cfs)	(MGD)	(MGD)	
CLEAR LAKE & CITY DISTRICT														
LS10C	CL1.8	0.11	Existing	4" F.M.	330		898.8	-	-	-	-	-	-	-
LS8C	CL1.8	0.16	Existing	6" F.M.	450	889.5	898.8	-	-	-	-	-	-	-
CL1.8	CL1.9	0.35	Existing	15	2100	898.8	895.6	0.15	6.4	4.13	2.5	1.63	1.63	4.70
CL1.9	CL1.7	0.54	Existing	15	2000	895.6	892.5	0.16	6.4	4.13	2.5	1.64	1.64	3.03
LS7C	CL1.1	0.28	Existing	4" F.M.	250	886.1	904.6	-	-	-	-	-	-	-
CL1.1	CL1.2	0.30	Existing	8	410	904.6	903.3	0.32	1.4	0.90	0.7	0.44	0.44	1.48
CL1.2	CL1.4	0.33	Existing	10	750	902.1	900.2	0.25	1.7	1.10	1.1	0.71	0.71	2.13
CL1.4	CL1.5	0.57	Existing	10	850	900.2	898.3	0.22	1.7	1.10	1.0	0.67	0.67	1.16
CL1.5	CL1.6	0.95	Existing	12	1650	898.3	895.2	0.19	3.7	2.39	1.5	1.00	1.00	1.05
CL1.6	CL1.7	1.12	Existing	15	1560	895.2	892.5	0.17	6.4	4.13	2.7	1.74	1.74	1.56
CL1.7	CL1.10	1.47	Existing	21	400	892.5	890.8	0.43	14.8	9.56	10.3	6.67	6.67	4.54
CL1.10	CL4.1	4.36	Existing	24	5300	890.8	869.2	0.41	20.7	13.37	14.4	9.33	9.33	2.14
LS26C	CL4.1	0.11	Existing	8" F.M.	50			-	-	-	-	-	-	-
LS4C	LS3C	0.11	Existing	4" F.M.	1800			-	-	-	-	-	-	-
LS5C	LS3C	0.15	Existing	4" F.M.	4000			-	-	-	-	-	-	-
LS9C	LS3C	0.26	Existing	4" F.M.	3100			-	-	-	-	-	-	-
LS3C	LS6C	0.61	Existing	8" F.M.	1500			-	-	-	-	-	-	-
LS6C	CL1.7	1.31	Existing	8" F.M.	2610			-	-	-	-	-	-	-
LS11C	LS2C	0.22	Existing	6" F.M.	300			-	-	-	-	-	-	-
LS2C	CL1.10	2.60	Existing	12" F.M.	6952			-	-	-	-	-	-	-
LS1C	CL1.10	0.74	Existing	6" F.M.	55									
CL4.1	CL4.2	7.24	Existing	16" F.M.	900			-	-	-	-	-	-	-
CL3.1	CL4.2	0.37	Proposed	6" F.M.	1500			-	-	-	-	-	-	-
CL4.2	CL4.3	7.81	Existing	36	1500	911.7	910.5	0.08	57.0	36.82	18.9	12.19	12.19	1.56
CL4.3	CL2.4	10.28	Existing	36	3845	910.5	906.9	0.09	57.0	36.82	20.4	13.18	13.18	1.28
CL2.3	CL2.4	4.42	Existing	21	750	910.0	906.9	0.41	14.8	9.56	10.2	6.58	6.58	1.49
CL2.4	SD1.1	12.96	Existing	36	3950	906.9	903.7	0.08	57.0	36.82	19.0	12.26	12.26	0.95
CT1.1	CL2.3	3.50	Existing	12" FM	7000			-	-	-	-	-	-	-
CT2.1	C1.1	0.23	Proposed	6" FM	5280			-	-	-	-	-	-	-
C1.1	C1.3	0.50	Proposed	8" FM	2500			-	-	-	-	-	-	-
C1.3	LS2C	1.67	Existing	12	1280			0.22	3.7	2.39	1.7	1.08	1.08	0.65
C1.2	C1.3	0.68	Existing	10	850			0.28	1.7	1.10	1.2	0.75	0.75	1.10
C1.4	LS2C	1.03	Existing	10	270			0.28	1.7	1.10	1.2	0.75	0.75	0.72

Table 7-7 - Existing/ 2040 Future Pipe Capcities for the Ultimate System: Township District

From Node	To Node								Capacity					
									Inlet Control		Outlet Control			
		(MGD)		(in)	(ft)	(ft)	(ft)	(%)	(cfs)	(MGD)	(cfs)	(MGD)	(MGD)	
TOWNSHIP DISTRICT														
LS13T	LS12T	0.24	Existing	4" F.M.	980	902.0	925.0	-	-	-	-	-	-	-
LS12T	LS11T	0.38	Existing	4" F.M.	430	915.0	915.0	-	-	-	-	-	-	-
LS11T	LS10T	0.59	Existing	4" F.M.	1370	904.4		-	-	-	-	-	-	-
LS10T	LS9T	0.70	Existing	4" F.M.	1225	895.0	897.7	-	-	-	-	-	-	-
LS9T	LS8T	1.08	Existing	4" F.M.	102			-	-	-	-	-	-	-
LS8T	LS7T	1.44	Existing	4" F.M.	1963			-	-	-	-	-	-	-
C7.1	LS1T	0.51	Proposed	10	1600	905	901.0	0.25	1.7	1.10	1.1	0.71	0.71	1.39
LS1T	LS2T	0.56	Existing	4" F.M.	980	888.3	897.0	-	-	-	-	-	-	-
LS28T	LS2T	0.05	Existing	4" F.M.	60	889.9	895.5	-	-	-	-	-	-	-
LS2T	LS3T	0.74	Existing	4" F.M.	780	888.4	899.8	-	-	-	-	-	-	-
LS3T	LS4T	0.80	Existing	4" F.M.	60	891.3	898.8	-	-	-	-	-	-	-
LS4T	LS7T	1.01	Existing	6" F.M.	3795	888.8	906.8	-	-	-	-	-	-	-
T-22.1	LS7T	0.24	Proposed	8				0.20	1.4	0.90	0.5	0.35	0.35	1.45
								-	-	-	-	-	-	-
LS5T	LS6T	0.08	Existing	4" F.M.	850	890.7	893.8	-	-	-	-	-	-	-
LS6T	LS7T	0.13	Existing	4" F.M.	572	891.8	900.0	-	-	-	-	-	-	-
								-	-	-	-	-	-	-
LS7T	LS21T	3.07	Existing	10" F.M	5211	889.0	858.8	-	-	-	-	-	-	-
								-	-	-	-	-	-	-
LS14T	LS15T	0.35	Existing	4" F.M.	2560			-	-	-	-	-	-	-
LS15T	LS16T	0.49	Existing	4" F.M.	1640			-	-	-	-	-	-	-
LS16T	LS17T	0.62	Existing	4" F.M.	75			-	-	-	-	-	-	-
LS17T	LS18T	0.65	Existing	4" F.M.	370			-	-	-	-	-	-	-
LS18T	LS19T	0.92	Existing	6" F.M.	525			-	-	-	-	-	-	-
LS19T	FL4.1	1.07	Existing	8" F.M.	1820			-	-	-	-	-	-	-
LS21T	FL4.1	0.21	Existing	8" F.M.	2270			-	-	-	-	-	-	-
LS29T	FL4.1	0.32	Existing	6" F.M.	1860			-	-	-	-	-	-	-
LS27T	FL4.4	0.79	Existing	8" F.M.	5920			-	-	-	-	-	-	-
LS32T	FL5.3	0.15	Existing	6" F.M.	1845			-	-	-	-	-	-	-
LS32T	FL8.4	0.15	Proposed	6" F.M.	1845			-	-	-	-	-	-	-
LS30T	LS25T	0.08	Existing	4" F.M.	580			-	-	-	-	-	-	-
LS25T	LS24T	0.21	Existing	4" F.M.	3068			-	-	-	-	-	-	-
LS24T	LS23T	0.47	Existing	6" F.M.	3395			-	-	-	-	-	-	-
LS23T	CL4.1	0.61	Existing	4" F.M.	516			-	-	-	-	-	-	-
LS31T	CL2.3	1.42	Existing	10" F.M.	2240			-	-	-	-	-	-	-

Table 7-8 - Existing/ 2040 Future Pipe Capcities for the Ultimate System: South District															
From Node	To Node								Capacity						
									Inlet Control		Outlet Control				
		(MGD)		(in)	(ft)	(ft)	(ft)	(%)	(cfs)	(MGD)	(cfs)	(MGD)	(MGD)		
SOUTH DISTRICT															
SD2.2	SD2.1	0.12	Existing	6" F.M.	3600	872.0	906.0	-	-	-	-	-	-	-	
SD2.1	SD1.1	0.47	Proposed	12	2600	906.0	903.7	0.09	3.7	2.39	1.1	0.68	0.68	1.44	
SD4.1	SD1.2	0.24	Proposed	12	2100	925.0	920.0	0.24	3.7	2.39	1.7	1.12	1.12	4.71	
SD1.2	SD1.1	0.73	Proposed	12	1300	920.0	905.0	1.15	3.7	2.39	3.8	2.47	2.39	3.27	
SD1.1	SD6.1	14.26	Proposed	36	3300	905.8	900.2	0.17	57.0	36.82	27.5	17.75	17.75	1.24	
SD3.1	SD3.2	1.16	Proposed	8" F.M.	5000	885.0	905.0	-	-	-	-	-	-	-	
SD3.2	SD6.1	1.16	Proposed	12	1300	905.0	900.2	0.37	3.7	2.39	2.2	1.39	1.39	1.20	
SD9.2	SD5.1	0.24	Proposed	10				0.22	1.7	1.10	1.0	0.66	0.66	2.74	
SD5.1	SD4.3	1.97	Proposed	15	1750	920.0	910.0	0.57	6.4	4.13	4.9	3.15	3.15	1.60	
SD4.2	SD4.3	2.11	Proposed	12	600	920.0	910.0	1.67	3.7	2.39	4.6	2.97	2.39	1.13	
SD4.3	SD6.1	2.11	Proposed	18	6000	910.0	900.2	0.16	10.1	6.52	4.2	2.74	2.74	1.30	
SD6.1	SD6.2	16.00	Existing	36	4000	900.2	897.0	0.08	57.0	36.82	18.9	12.19	12.19	0.76	
SD7.1	SD7.2	1.99	Proposed	12" F.M.	1500	890.0	908.0	-	-	-	-	-	-	-	
SD7.2	SD6.2	1.99	Proposed	15	3700	908.0	897.0	0.30	6.4	4.13	3.5	2.28	2.28	1.14	
SD9.1	SD8.1	0.11	Proposed	8				0.40	1.4	0.90	0.8	0.49	0.49	4.58	
SD8.1	SD6.3	1.44	Proposed	15	2980	910.0	902.0	0.27	6.4	4.13	3.3	2.16	2.16	1.50	
SD6.3	SD6.2	1.55	Proposed	15	3400	902.0	897.0	0.15	6.4	4.13	2.5	1.60	1.60	1.03	
SD6.2	SD6.4	18.28	Proposed	42	1250	897.0	896.8	0.08	95.0	61.37	28.5	18.38	18.38	1.01	

4. Inflow and Infiltration (I/I)

The Metropolitan Council has instituted an Inflow/Infiltration Surcharge Program. The fundamental policy statement summarizing this program is that the Metropolitan Council "will not provide additional capacity within its interceptor system to serve excessive inflow and infiltration." The Council establishes inflow and infiltration thresholds for each of the communities that use its system. Communities that exceed this threshold are required to eliminate this excess flow within a reasonable timeframe.

An estimate of clear water flow contribution was generated using approximately 7 years of record to compare the average winter quarter (abse, dry weather) flows (assumed January to March) to the average daily and peak flow (wet weather flow). Table 7-9 is an estimate of the clearwater contribution from Forest Lake.

Table 7-9 – Estimate of Clearwater					
Year	Average Daily Flow (MGD)	Base Flow (MGD)	Year I/I	Peak Daily Flow (MGD)	Peak I/I
2011	1.537	1.521	1%	1.96	22%
2012	1.407	1.223	13%	1.93	37%
2013	1.458	1.257	14%	1.84	32%
2014	1.574	1.239	21%	2.11	41%
2015	1.550	1.282	17%	1.87	31%
2016	1.627	1.490	8%	1.71	13%
2017	1.607	1.529	5%	2.06	26%
2018	1.575	1.350	14%	1.87	28%

The Metropolitan Council identified Forest Lake as a community with observed excess I/I on its original list, based on exceeding its goals for 2001 and 2003 and therefore the potential for future issues. In 2004,

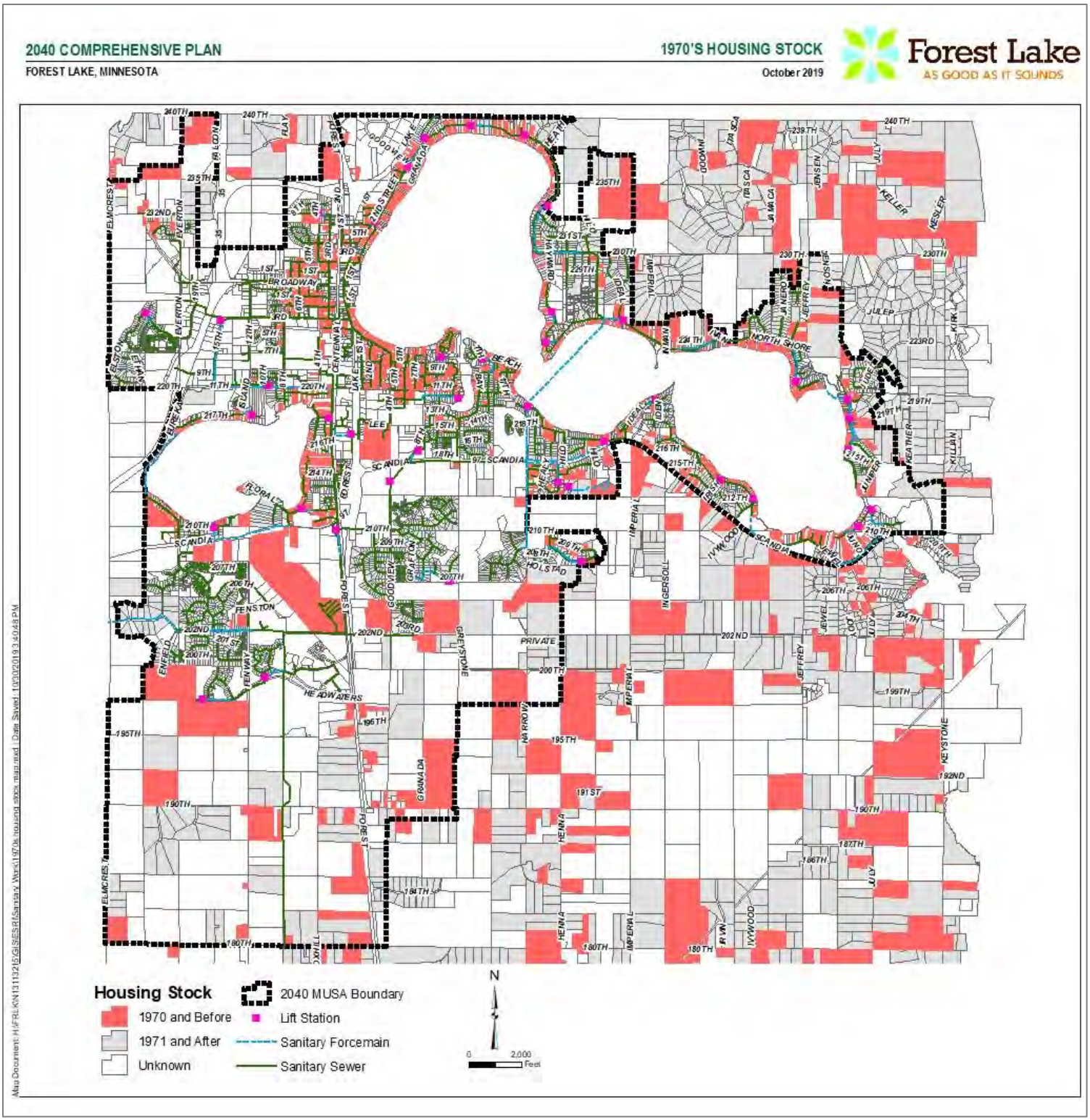
the City completed an I/I removal program and is continuing to work to reduce and determine its I/I sources.

Figure 7-3 identifies the housing stock in Forest Lake to identify neighborhoods with the highest likelihood of failing service connections. The City has 1,514 structures built prior to 1970 (approximately 17%) and 5,076 built after 1970 (approximately 56%) and 2427 (approximately 27%) are unknown (structure counts are City wide). The City continuously identifies failing services during street reconstruction projects and replaces all services from the lateral or trunk sewer line to the right of way.

The City has participated in the Metropolitan Council's I/I Grant Program to help with financing the costs of making improvements to the system and continue to make progress in reduction. The City of Forest Lake has made several efforts to locate the sources of I/I and reduce the flow values which include the following:

- In conjunction with the City's annual street improvement project, identified in their capital improvement plan, the City takes a proactive approach to clean and televised all sanitary sewer mains and inventory all structures for deficiencies including inflow and infiltration. The repair work is then incorporated into the project.
- In May of 2009, the City adopted the Illicit Discharge Detection and Elimination Plan which guides City Staff in addressing observed or complaint driven illicit discharges.
- When potential problems are found to be coming from private property, they are then further investigated for possible illegal discharge of stormwater by sump pump or roof leader connections. Appropriate corrective action is then initiated with the affected property owners.
- The City continues to implement the components of the I/I Elimination Program implemented in 2004.
- The City also has implemented stringent requirements for new sanitary sewer and home construction. The new sewer construction is pressurized and tested prior to approval and acceptance by City staff. New home construction is required to provide hard plumbing of sump pumps to the outside of homes.
- In 2015, the City replaced 2,320 LF of sanitary sewer pipe and lined approximately 20,600 lineal feet of gravity sewer.
- In 2017, a major sanitary sewer lift station project was awarded and is currently under construction. The project included reconstruction/replacement of 12 lifts stations throughout the City. At two of the sites the existing forcemains were also replaced. The City will continue to make improvements to the existing stations. Additional lift station improvement projects have been included in the City's Capital Improvement Plan.
- In 2019, a downtown sanitary sewer system study was initiated by measuring actual wet and dry weather flows. In 2020, a hydraulic model of the rapidly redeveloping downtown corridor will be developed to identify current and future capacity needs. This information will be shared with Metropolitan Council when completed.
- The City will continue to model other areas of the City to generate a comprehensive hydraulic model. The model will be used to strategically target areas with knonw I&I issues and identify capacity needs. This information will be shared with Metropolitan Council when completed.

Figure 7 -3 – Housing Stock



The City of Forest Lake has implemented the following policies to minimize I/I in new and existing sewer systems:

- City inspection of all publicly installed sewer systems to verify compliance with City Standards.
- Adoption of Construction Engineer Association of America (CEAM) Standard Utility Specifications for pressure testing of lines between manholes.
- Video inspection of all newly constructed sewer lines before project acceptance.
- Jet clean and vacuum all VCP sewer lines on a three (3) year cycle and all other exisitn pipe on a four (4) year cycle. Video inspection of existing sewer lines on an annual basis to the extents practicable.
- Require solid manholes covers with concealed pick holes.
- Periodic visual inspection of manholes. Make repairs as necessary.
- Do not allow discharge of residential drainage systems (sump pumps, drain tiles, roof drains, etc.) into the sanitary sewer system per City Code § 52.23 DRAINING RAIN OR SURFACE WATERS INTO SEWER SYSTEM PROHIBITED. Any existing connections will be disconnected upon discovery. (See Appendix I)
- Require disconnection of any potential existing residential drainage systems that are connected to the sanitary sewer system.

The following strategies are used by the City of Forest Lake to achieve the aforementioned objective and policies:

- Ensure inspectors for utility projects have adequate knowledge and training to enforce City Standards for construction.
- Require developer's of newly constructed sewer lines to submit video inspection tapes for review by City staff prior to project acceptance.
- Provide funding to Public Works to annually televise and inspect existing sanitary sewer lines and make necessary repairs.
- Enforce City Code, § 52.23 DRAINING RAIN OR SURFACE WATERS INTO SEWER SYSTEM PROHIBITED. (See Appendix I)
- The City has budgeted and prepared a Capital Improvement Plan that includes replacing lift stations, completing mainline lateral replacements, and completing lining projects.

Implementation Plan:

- The City will maintain the current plan, policies and objectives to maintain the integrity of the sewer system.
- Periodic and routine maintenance of the system will identify areas needing repair to limit potential I/I. Financing will come from the Sewer Fund.
- The City will enforce the City Code requiring disconnection of illegal sewer connections on a complaint basis, or as identified by other means.
- The City Building Inspectors will inspect newly constructed sewer service connections, interior to buildings, to verify that they comply with the current building code.
- The City will review their Capital Improvement Plan annually.

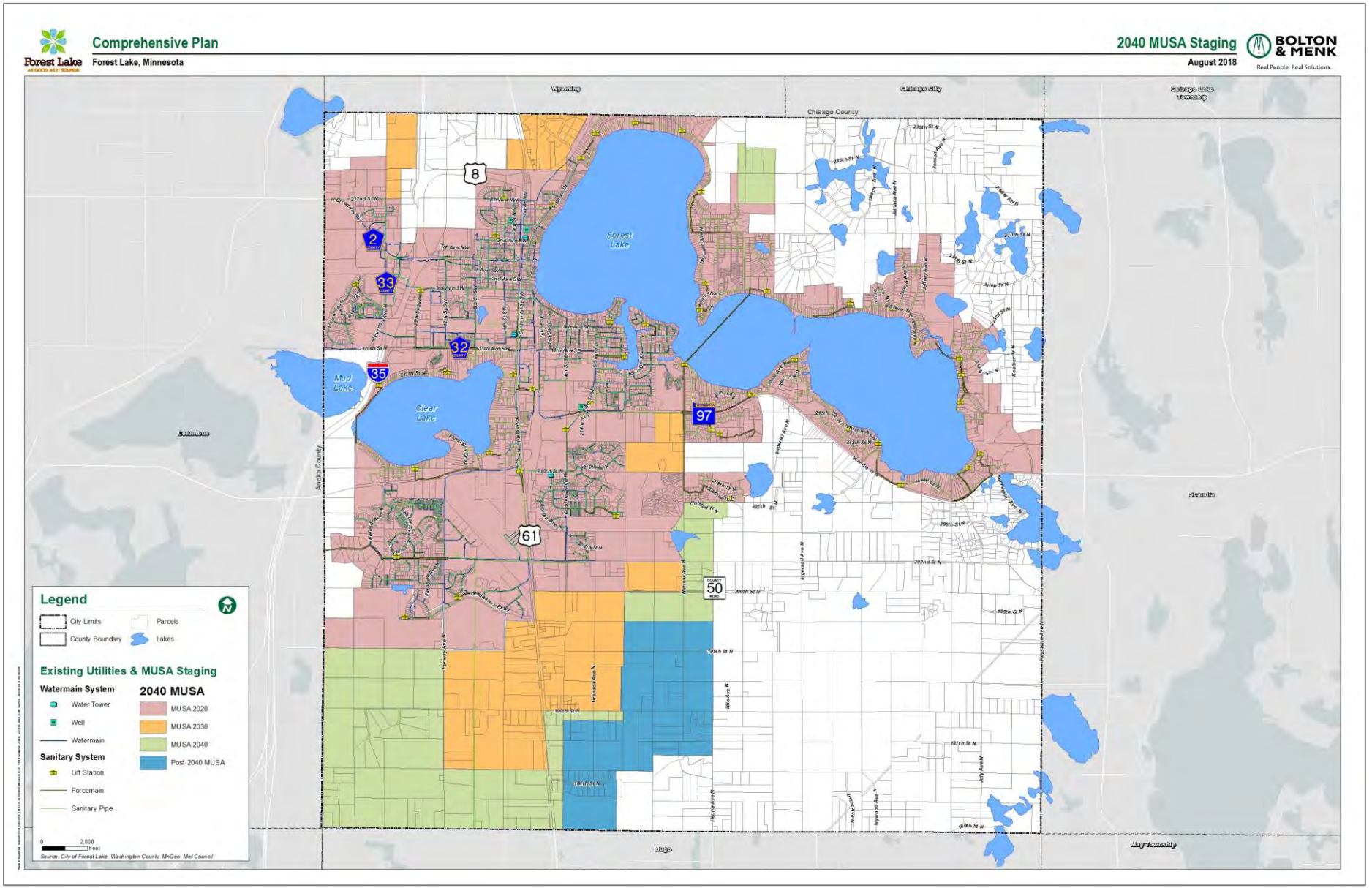
5. Sanitary Sewer System Expansion

To accommodate projected household and employment growth, the City of Forest Lake is anticipating staged MUSA expansion as shown in Figure 7-4 and detailed in Table 7-10. The values in Table 7-10 are the incremental increases expected during each time period. This aligns with future land use plan detailed in Chapter II. The anticipated distribution of forecasted housing units and job growth relative to the location of the Metropolitan forcemain interceptor are detailed in Table 7-11.

Table 7-10 – Staging for Wastewater Expansion				
	2018-2020	**2021-2030**	**2031-2040**	**Post 2040**
Acres Added to Service Area	639	736	1,025	795
Flow Location - CL4.2	0.11	0.18	0.04	0.00
Flow Location - CL4.3	0.11	0.18	0.08	0.00
Flow Location - SD1.1	0.18	0.40	0.00	0.00
Flow Location - SD6.4	0.00	0.21	0.98	0.63
Estimated Capacity (MGD)	0.4	0.97	1.1	0.63
Type of Facilities	Municipality	Municipality	Municipality	Municipality

Table 7-11 – Housing & Employment Forecast Projected Sewer Allocation				
	Forecast Component	**2020**	**2030**	**2040**
Households	North of MCES L1	3516	4347	5135
	South of MCES L1	4094	5062	5979
Employment	North of MCES L1	2123	2313	2504
	South of MCES L1	5677	6187	6696

Figure 7-4 - 2040 MUSA Staging



6. Community and Subsurface Treatment Systems

There are approximately 940 individual sewage treatment systems (ISTS) in the city. Most systems are located on larger rural residential lots and are shown in Figure 7-5.

All individual sewage treatment systems within the City of Forest Lake are required to be permitted through Washington County in accordance with Washington County Development Code - Chapter 4 Subsurface Sewage Treatment System Regulations. The County SSTS ordinance includes requirements for:

- Compliance Inspections of existing systems
- Permitting and inspection of new and replacement systems
- Site review
- Maintenance requirements
- Operating permits for Type IV Advanced Sewage Treatment Systems.

Existing, non-compliant systems located in the City are included in the Washington County 2040 Comprehensive Plan Properties located within a reasonable distance and within the current MUSA boundary are reviewed for the feasibility to connect to the public sanitary sewer system.

Figure 7-5 - Individual Sewer Treatment Systems

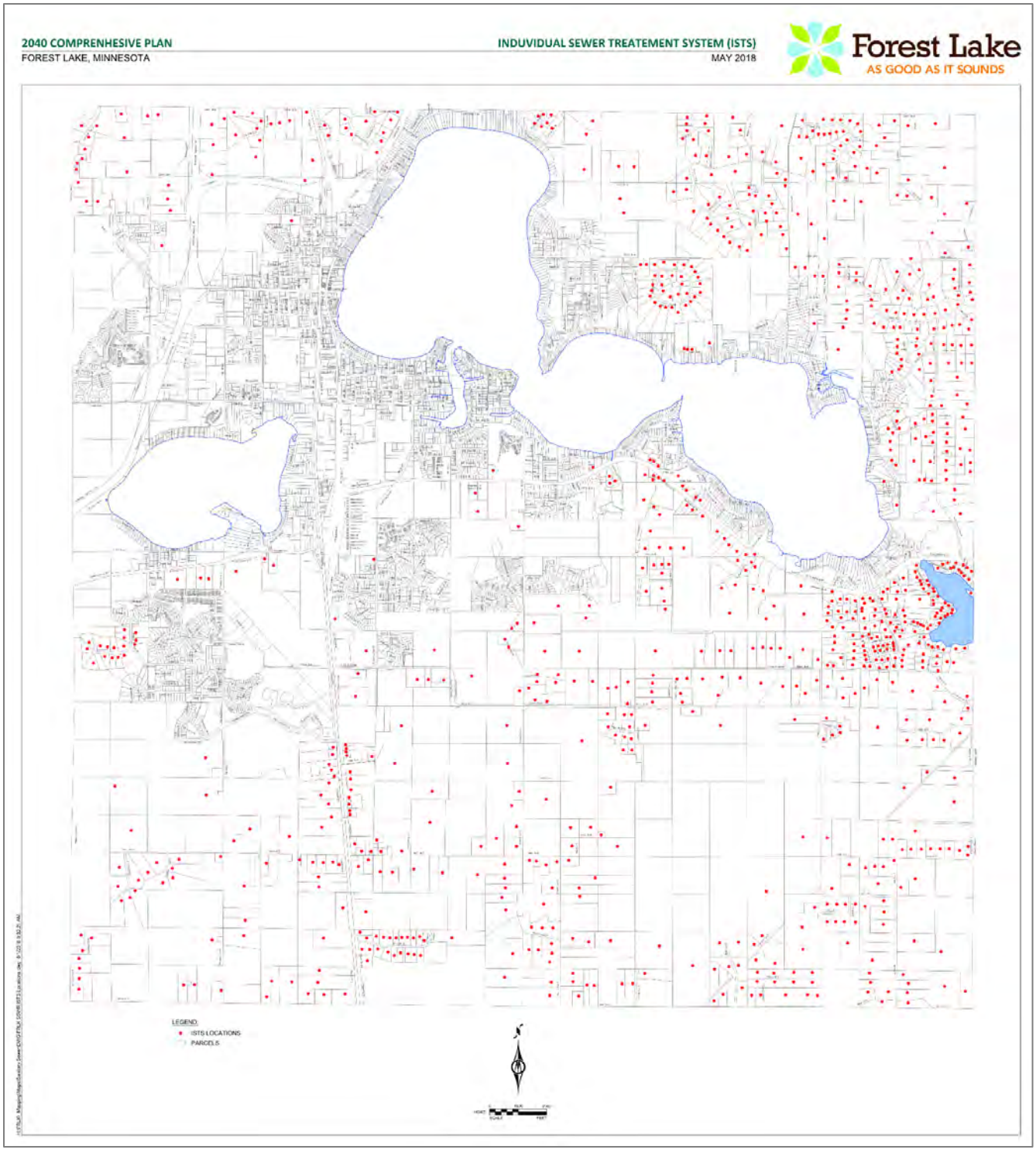
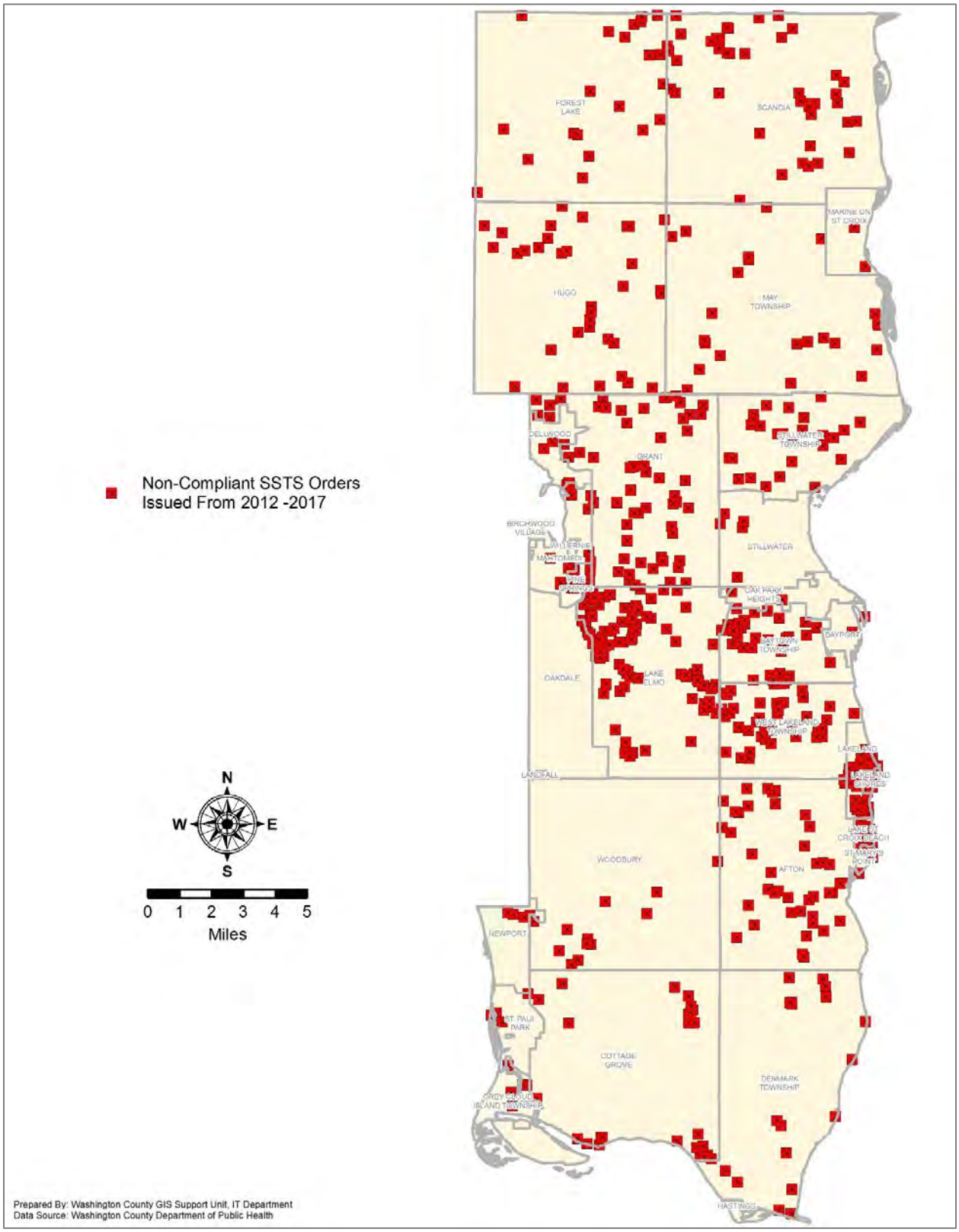


Figure 7-6 – Non-Compliant Individual Sewer Treatment Systems, Washington County



B. Surface Water

1. Background

The City completed its Surface Water Management Plan (SWMP) and it was adopted in (DATE PENDING). The plan serves as a comprehensive planning document to guide the City in conserving, protecting and managing its surface water resources. The plan has been developed to meet the requirements of Minnesota Statutes 103B and Minnesota Rules 8410, to be consistent with the goals and policies of the Metropolitan Council's Water Resources Policy Plan, and the goals and policies of the two watershed districts that have jurisdiction within the City: Rice Creek Watershed District and Comfort Lake Forest Lake Watershed District. The plan and its amendments will be adopted by the City as an element of this Comprehensive Plan.

The SWMP includes a detailed description of the City's natural resources, including water resources, past studies and inventories, and current surface water management. An assessment of the existing and potential water resource and stormwater related concerns within the City and associated corrective actions are provided. The SWMP also includes goals and policies to address the long-term surface water management needs in the City, and outlines the regulations, standards, practices, projects and funding that will be needed to implement the goals and policies. The SWMP also includes an inventory and classification of the City's wetlands and a corresponding management plan.

2. Watershed Districts

Forest Lake is part of two watershed districts, Comfort Lake-Forest Lake Watershed District (CLFLWD) and Rice Creek Watershed District (RCWD). The Districts are political subdivisions of the State of Minnesota, established under the Minnesota Watershed Law. The Districts' general missions are to conserve natural resources through development planning, flood control, and other conservation projects, based upon sound scientific principles. As required under the Metropolitan Surface Water Management Act, both Districts have adopted a Watershed Management Plan, which contains the framework and guiding principles for the Districts in carrying out its statutory purposes. Watershed district boundaries are shown in Figure 7-7.

a) Comfort Lake-Forest Lake Watershed District (CLFLWD)

The northern half of the city is located in the Comfort Lake-Forest Lake Watershed District, a 17.2 square miles area encompassing both Sylvan and Forest Lake. Drainage from the watershed enters the Sunrise River, a tributary of the St. Croix River. The CLFLWD most recent watershed management plan was created in 2011 with revisions adopted and approved by the BWSR in August 2015. The plan contains the goals, objectives, and actions of the CLFLWD and guides the watershed's activities until 2021.

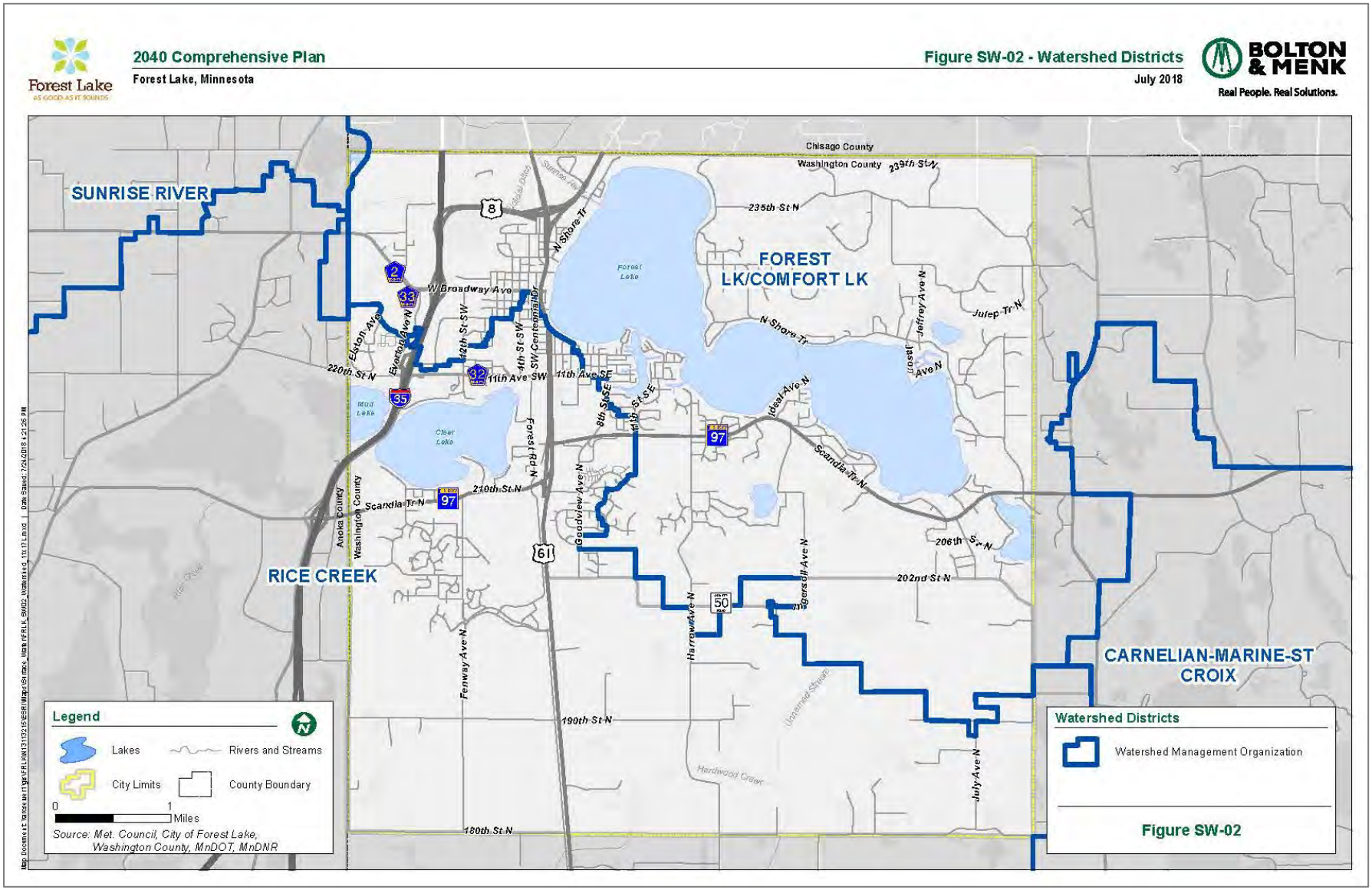
The CLFLWD plan has eight core goals areas:

- Floodplains
- Lakes
- Streams
- Wetlands
- Uplands Resources
- Groundwater
- Public Education
- Interagency Coordination

The City of Forest Lake is currently partnering with the Comfort Lake-Forest Lake Watershed District on several projects and studies. The Forest Lake Diagnostic Study will update diagnostic data for the lake and develop a comprehensive, site specific implementation plan to reduce phosphorus loads in the lake.

The Shields Lake Stormwater Harvest Project is a multi-phase project to reduce phosphorus loads in Shields Lake, and ultimately Forest Lake. This includes an irrigation water reuse project and a whole lake alum treatment of Shields Lake. The Shields Lake Fish Barrier project will decommission an existing electric fish barrier located between Shields and Forest Lake and replace it with a mechanical fish barrier. A fish barrier is desired at this location to prevent the migration of carp.

Figure 7-7 - Watershed District



b) Rice Creek Watershed District

The Rice Creek Watershed District encompasses the southern half of the City. The southern half of the City is included in the Hardwood Creek Planning Region, and the western half of the City in the Rice Creek Watershed District is part of the Upper Rice Creek Planning Region. The area within Forest Lake is approximately 18.4 square miles. The primary issues within the Upper Rice Creek Planning Region are related to the need to use existing agricultural drainage systems to serve lands currently in agricultural production, the future need to use these systems as the primary trunk system for stormwater conveyance as the land develops, and management of existing natural resources. The primary issues within the Hardwood Creek Planning Region are related to water levels within Rice Lake, the lack of a well-defined regulatory floodplain along the Hardwood Creek, and appropriate management methods for Hardwood Creek and its riparian corridor.

The RCWD's 2010 Watershed Management Plan has eight objectives:

- Increase knowledge, awareness, and capacity for decision-making among District constituents
- Manage water systems for their ecological and community value
- Recognize the origin and interconnectedness of water systems while planning for current and future needs
- Improve diversity and ecological integrity of wetlands
- Minimize damage to infrastructure and property caused by flooding and excessive runoff
- Capitalize on open space opportunities to enhance water quality, reduce runoff volume, and enhance ecological resources
- Incorporate groundwater into the decision-making process
- Manage District property and resources responsibly

In 2012, the Rice Creek Watershed District worked with the City of Forest Lake to address water quality concerns in Clear Lake. A management plan was developed to restore biological integrity, install best management practices throughout the watershed, foster stewardship, and more effectively communicate with the public about Clear Lake. These goals will be addressed through both short-term and long-term projects, with short-term projects focusing on the next 10-20 years and long-term plans extending beyond 2032.

The SWMP provides an inventory of land and water resources within the City including a description the physical setting, available and pertinent water resources data, regulatory setting, and past studies and agreements related to surface water resources. The SWMP summarized the City's and other agencies' respective regulatory controls related to surface water management and protection, shown in Table 7-11.

Table 7-11 – Summary of Regional Controls			
Description	**City[1]**	**RCWD**	**CLFLWD**
Land use (zoning, subdivision approval, etc.)	X		
Grading	X	X	X
Wetland Conservation Act	X	X	
Stormwater rate control	X	X	X
Stormwater quality treatment	X	X	X
Stormwater infiltration	X	X	X
Erosion and sediment control	X	X	X
Illicit discharges to storm drainage system	X		
Shoreland management zoning	X		
Floodplain	X	X	X
Dredging	X	X	X
Stream crossings	X	X	X
Wetland water buffers	X	X	X
Land preservation	X		
Wetland restoration	X	X	X
Project maintenance	X	X	X

The MPCA has designated the City of Forest Lake as an NPDES Phase II MS4 community (MN Rules 7090). The City has completed and submitted its NPDES Phase II Permit Application and Stormwater Pollution Prevention Plan. The SWMP notes that implementation of the SWPPP has and will be a cornerstone of the City's efforts to control pollution from surface water runoff, manage its stormwater system, and educate its residents and developers on these issues. Forest Lake's most recent application for NPDES coverage was submitted in 2014. The permit application outlined Forest Lake's Stormwater Pollution Prevention Plan (SWPPP) to address six minimum control measures:

1. Public education
2. Public involvement
3. Illicit discharge detection and elimination
4. Construction site runoff control
5. Post-construction runoff control
6. Pollution prevention in municipal operations

3. Land & Water Resource Inventory

The City of Forest Lake has a number of surface water resources. Defining features include Forest Lake and Clear Lake, popular recreation and fishing lakes within the city. In addition, there are a number of smaller lakes including Sylvan, Mud, Higgins, Shields, Cranberry, Twin, and Elwell Lakes. The Sunrise River begins as an outlet from Forest Lake. Important creeks found within the city include portions of Rice Creek and Hardwood Creek.

Sylvan Lake is listed as a priority lake by the Metropolitan Council because of its good water quality.

Clear Lake is 432 acres and has a maximum depth of 28 feet. Clear Lake is a popular lake for recreation and for its aesthetics. There is also a strong presence of walleye, black crappie, and bluegill in Clear Lake. While the lake has excellent water quality and clear water, the lake has high levels of mercury and suffers from nutrient loading due to run-off from the lake's 2,554 acre watershed. Development has increased along Highway 61 and the surrounding area, which is expected to continue is accordance with the Land Use Plan in this Comprehensive Plan. As development continues within the lake's watershed, measures

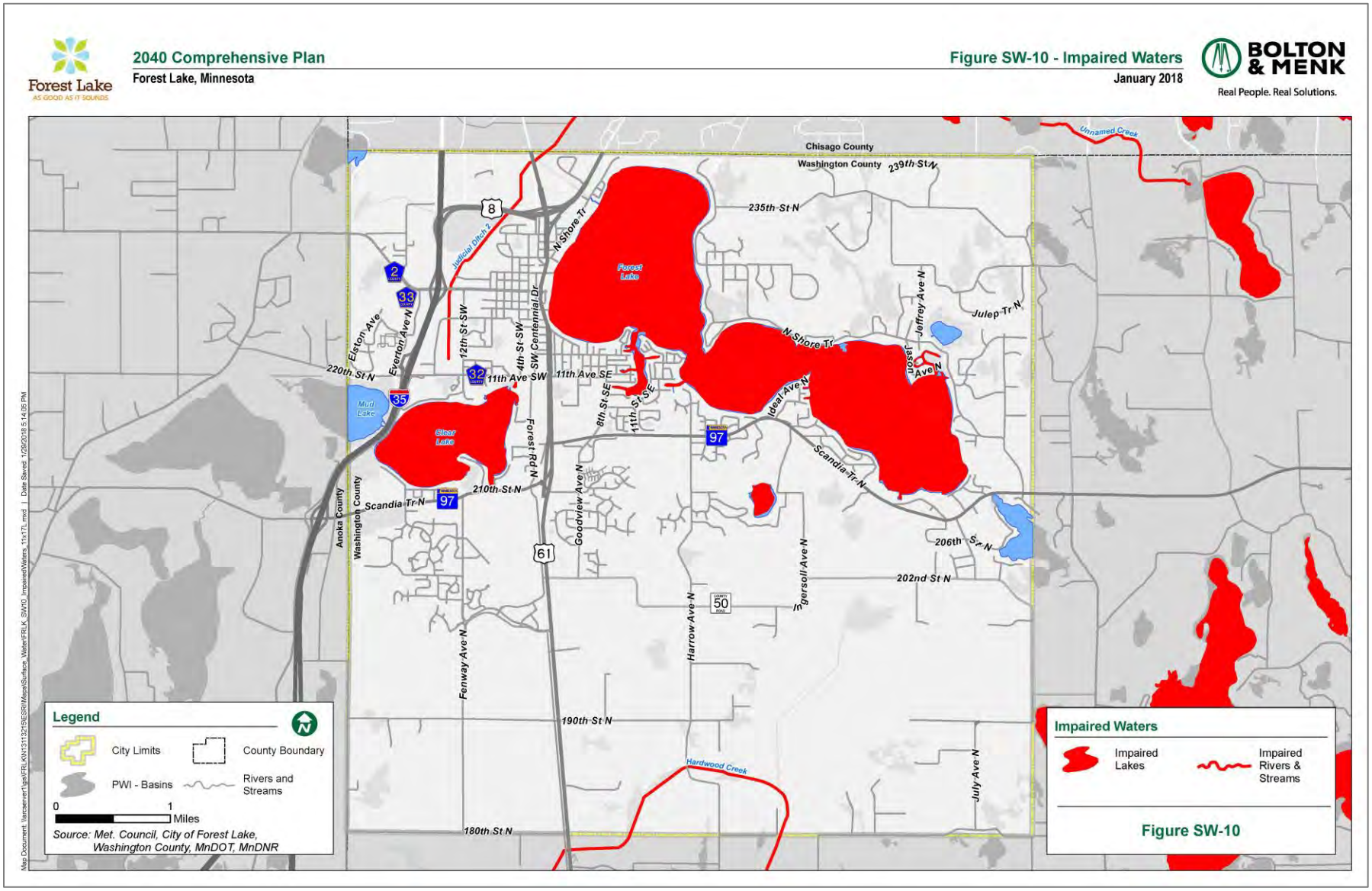
will need to be taken be the city, Rice Creek Watershed District, and Washington County to prevent and offset additional runoff from entering the lake.

Forest Lake is an impaired lake with high levels of PCBs and mercury. Clear Lake also has high levels of mercury and nutrient loading. Both lakes are listed as priority lakes by the Metropolitan Council due to their size and recreational value and are shown in Figure 7-8. This priority list is a way for the Metropolitan Council and partners to focus resources.

4. Problems & Corrective Actions

The SWMP provides an assessment of the existing and potential water resource and stormwater related concerns within the City and associated corrective actions. The identified problems and possible corrective actions are organized by Watershed District and relate to both water quality and quantity.

Figure 7-8 - Impaired Waters



5. Surface Water System Goals & Policies

The SWMP notes that the City has a strong interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development, redevelopment, and fiscal responsibility. The key, overall goals of the SWMP are summarized in Table 7-12.

The plan also notes that the completion of several plans or efforts that are recently completed or currently in process that will influence future management of surface waters in the City. These include the CLFLWD updated Watershed Management Plan and Rules, RCWD updated Water Management Plan, the Forest Lake Diagnostic Study and Implementation Plan and Rules and MPCA efforts to complete TMDL studies. The City has and will continue to incorporate the results of these efforts in the SWMP and its goals and strategies as they are completed.

The plan identifies a variety of policies that the City will use to achieve its goals for surface water management. These include using existing provisions of the City Code, or updating some provisions to achieve goals for surface water management, protection of wetlands, shorelands and floodplains, and controlling erosion and sedimentation. The plan also notes that the completion of several plans or efforts that are recently completed or currently in process that will influence future management of surface waters in the City. The City has and will continue to incorporate the results of these efforts in the SWMP and its goals and strategies as they are completed.

Table 7-12 – Summary of Goals and Policies

#	Goal	Policies to Support Goal
1	Flood Protection	Reduce potential for flooding, control excessive rates of runoff and volume.
2	Stormwater Runoff Quality	Improve runoff water quality through regulation of development, erosion and sediment control, and education of proper fertilizer use.
3	Protection of Valuable Resources	Set stormwater management standards, preserve and enhance wetlands, and protect shorelines and slopes. Monitor and document changes in surface water resources.
4	Surface Water System - Design, Construction, Regulation and Use	Regulate the construction of the surface water system through standards and review, enforcement procedures, inspection and maintenance requirements.
5	Surface Water System - Operation and Maintenance	Manage the surface water system through inspection and maintenance, good housekeeping practices and education.
6	Natural and Recreational Resources - Preservation, Enhancement and Maintenance	Preserve and enhance natural and recreational resources through riparian connectivity.
7	Erosion and Sediment Control	Control or eliminate soil erosion and sedimentation. Establish standards and specifications for conservation practices and planning activities that minimize erosion and sedimentation.

6. Wetland Inventory & Assessment Report

The preparation of the SWMP included an inventory and assessment of wetlands within the City. This effort built on previous work by RCWD and the City. The City's assessment focused on wetlands near the High School and Industrial Park areas. For areas not included in the Wetland Inventory and Assessment Report, Section 6.3.2 of the SWMP lists the steps necessary to determine a wetland's stormwater susceptibility. The wetland assessment used the Minnesota Routine Assessment Method (MnRAM 3.0) to

assess the values of the wetlands in Forest Lake based on their ability to perform desired functions, such as improving water quality, reducing flow rates, and providing fish and wildlife habitat. The assessment evaluates characteristics such as plant community diversity and structure, connectivity to other habitat types, location in the watershed and a wide range of other factors. The SWMP includes policies for managing wetlands in Forest Lake. The City is the responsible LGU for management of wetlands in CLFLWD, and will administer the Minnesota WCA. RCWD is the current LGU for WCA projects within their watershed district. The City and/or RCWD should be contacted to verify the current LGU for WCA administration at the time of permitting. This will include assuring no net loss of functions and values of wetlands within the City. Local watershed management organization requirements will be applied to wetlands included in their management plans.

7. Implementation Plan

The SWMP includes a list of surface water management related activities that the City needs to continue or commence implementation of and their related costs, detailed in Table 7-13. These projects are generally prioritized by water quality and quantity concerns, alignment with the City's CIP, and other funding opportunities and stakeholder needs.

Table 7-13 – Anticipated Surface Water Management Activities

Project	Improvement Cost Estimate* (thousands of dollars)		Approximate Project Timeline	Funding Source
	Low	High		
190th Street North Drainage Improvements	100	150	2020+	RCWD/City
Heath Avenue Court North Drainage Improvements	50	100	2020+	CLFLWD/City
Green Valley Estates Drainage Improvements	100	300	Unknown	City
Implement the TH61 WQ and Aesthetics Plan	400	900	Ongoing	MnDOT/County/City/RCWD/CLFLWD
Castlewood Golf Course Parking Lot	20	30	2019+	CLFLWD/BWSR/City
Implement Enhanced Street Sweeping Plan	15	50	Ongoing	CLFLWD/RCWD/City/BWSR
Forest Road Water Quality Structure (South)	80	150	2020	City/BWSR/RCWD
Stormwater Pond Assessment	70	110	2018	City
City Center Stormwater Reuse Project	100	300	Unknown	RCWD/City
Comprehensive Hydraulic and Water Quality Modeling	50	120	Ongoing	City
Everton Townhome Stormwater Reuse	250	750	Unknown	RCWD/BWSR/City
LELA School Stormwater Reuse	250	750	Unknown	RCWD/City/Private
Judicial Ditch 4 Watershed Analysis and Development Planning	15	30	2018-2019	RCWD/City
Forest Lake Dead End Streets	TBD		2019+	CLFLWD/City
Shields Lake Water Quality Improvements	TBD		2018	CLFLWD/City
Judicial Ditch 4 Drainage Improvements	TBD		2020+	RCWD/City
Public & Private Drainage Ditch Maintenance	TBD		Ongoing	City/RCWD/CLFLWD
Total	**1485**	**3710**		

**Cost estimates include only stormwater related improvements and are subject to change. Costs will be analyzed annually as project timelines are realized.*

C. Water Supply

1. Local Water Supply Plan

a) Introduction

An approved Local Water Supply Plan (previously called Water Emergency and Conservation Plan) is required by the Minnesota Department of Natural Resources (DNR) for any public water supplier that provides service to more than 1,000 people. The plan is to be updated by the public water suppliers once every ten years. According to Minnesota Statute 103G.219, the plan must address supply and demand reduction measures and allocation priorities. The plan also requires water suppliers to identify alternative sources of water for use in an emergency. The public water suppliers must employ water use demand reduction measures before requesting approval from the Commissioner of Health to construct a public water supply well, or prior to requesting an increase in the authorized volume of water appropriation. Demand reduction measures must include evaluation of conservation rate structures, a public education program, and may include a toilet and showerhead retrofit program. The DNR provides a template for preparing a plan that fulfills the requirements set forth by the Minnesota Statutes. The Local Water Supply Plan in its entirety is attached in Appendix F. Also included in this plan/appendix is a map of existing water lines in the City of Forest Lake.

Minnesota Statute 473.859 requires that all units of government within the seven-county Metropolitan area complete a Water Supply Plan as part of the local comprehensive process. In addition to the DNR required information, the plan must also include information consistent with the Metropolitan Land Use Planning Act.

It is the policy of the City of Forest Lake to provide potable water to all customers within the water service area in quantity sufficient to meet their consumption needs for fire flow requirements. All water supplied by the city will conform to requirements of the Safe Drinking Water Act, State and Federal regulations pertaining to water systems operation. The water supply plan provided within this document should not change or affect the current City Comprehensive Plan.

b) Water Demand Projections

Table 7-14, below, originates in the Water Supply Plan and displays recent historical water use data for the City. The total water pumped has generally increased over the last decade, although the highest peaks were in 2012-2013 during a very dry period. Another important figure is the percent of water unaccounted for in the system. A good goal is to keep this amount under 10%, and in recent years it has continued to decrease, dipping as low as 5.9% in 2013. A sharp increase was seen in 2015, and the cause of this merits investigation. Both average and maximum daily water demand have remained relatively steady with served population, with each seeing a peak during the aforementioned dry period in 2012-2013. Finally, both residential per capita and total per capita daily water demand have decreased some in the most recent years, with better education and awareness of water usage possibly being a factor.

Table 7-14 – Historic Water Demand															
Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supplier Services	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	9355	3580					0.0	372.3	0		1.020				109.0
2006	9591	3437					0.0	378.1	0		1.036				108.0
2007	9619	3774	289	80.72	0	0	369.9	380.0	0	2.6%	1.041	2.67	7/1/07	82.4	108.2
2008	9787	3803	247	64.00	22.166	0	333.2	425.8	0	21.8%	1.167	2.44	8/20/08	69.1	119.2
2009	10054	3791	314	49.08	22.918	0	387.4	458.7	1.794	15.5%	1.257	2.82	6/3/09	85.5	125.0
2010	10064	3829	332	49.08	0	0	382.3	425.4	1.383	10.1%	1.166	2.08	5/30/10	90.3	115.8
2011	10033	3863	273	70.75	0	0	345.7	435.9	1.879	20.7%	1.194	2.31	6/8/11	74.6	119.0
2012	10365	3862	308	83.68	15.478	0	408.7	473.1	1.900	13.6%	1.296	2.40	9/4/12	81.3	125.1
2013	10347	3910	277	93.11	57.021	0	429.9	456.8	2.680	5.9%	1.251	2.76	8/27/13	73.4	120.9
2014	10360	3987	263	85.27	41.681	0	391.1	420.6	1.586	7.0%	1.152	2.30	8/8/14	69.4	111.2
2015	10584	4032	259	85.00	0	0	345.5	423.3	1.528	18.4%	1.160	2.14	8/3/15	67.0	109.6
Avg. 2010 2015	10292	3914	285	84	19	0	383.9	439	1.8	12.6%	1.20	2.33	N/A	76.0	116.9

c) Water Demand Projections

Table 7-15 provides the projected demands for the City of Forest Lake. Projected total population comes from the most recent Metropolitan Council 2040 forecasts. These differ from the calculated population projections presented in the 2016 Water Supply Plan. The average and maximum day demand were calculated using per capita per day average provided in Table 7-14. The projected demands were determined assuming that in the future the population served will increase with the total population. Not all new residents of Forest Lake may be connected to city water, but as the system expands it is assumed that some existing residents that were not previously served will be connected. Average daily demand assumed 121 gallons per capita per day (gpcd), while for maximum daily demand a peaking factor of two was applied, based on historical trends.

Table 7-15 - Projected Water Demand					
Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2016	20,344	11,121	121	1.346	2.691
2017	20,633	11,379	121	1.377	2.754
2018	20,922	11,668	121	1.412	2.824
2019	21,211	11,957	121	1.447	2.894
2020	21,500	12,246	121	1.482	2.964
2021	21,870	12,616	121	1.527	3.053
2022	22,240	12,986	121	1.571	3.143
2023	22,610	13,356	121	1.616	3.232
2024	22,980	13,726	121	1.661	3.322
2025	23,350	14,096	121	1.706	3.411
2030	25,200	15,946	121	1.929	3.859
2040	28,900	19,646	121	2.377	4.754

The City's water production and treatment system consists of three operating supply wells and three treatment facilities. These are adequate to meet the current water demands, although it would be beneficial to construct a second well to supply WTP 2, which is fed by a single well. This second well would ensure that having a single well out of service could not shut down an entire treatment facility. Based on the population growth projections, the City will need both additional production and treatment

capacity in the future. A new well for increased production may need to be added within the next decade. A new treatment facility, similar in design to the existing ones, will likely be needed not long after 2020. More information on current and future water demands, and the water supply system in general, can be found in the 2015 Forest Lake Water System Plan (Appendix F) and the 2016 Water Supply Plan (Appendix G).

In addition to the natural population growth of the Forest Lake, possible water system interconnections are currently being considered with the adjacent communities of Columbus and Hugo. If one or both of these interconnections were to be made, it would likely significantly alter the projected future water demands, as well as the schedule for constructing new wells and treatment & storage facilities.

2. Assessing and Protecting the Water Source

Management of groundwater in the Forest Lake area should be focused on prevention of human-caused contamination from spoiling future water supplies. The Mt. Simon aquifer is relied upon to supply the municipal water supply wells. As such, this aquifer should be the focus of efforts to prevent impacts from contamination. The Mt. Simon aquifer is considered to be relatively low in vulnerability and has less likelihood of becoming contaminated than shallower aquifer units. At present, the City of Forest Lake has an approved Wellhead Protection Plan in place for Well Nos. 3, 4, and 5. As future wells are added to the city's water supply system, the Wellhead Protection Plan will be expanded to encompass the areas that supply these wells. A side benefit of Wellhead Protection Planning is that it raises awareness in the community of the importance of groundwater protection in general. Overall efforts to protect the city's water supply wells should also result in greater protection to the shallow aquifer(s) that supply the area's private wells.

The City of Forest Lake also supports the Washington County Groundwater Plan as it provides a county-wide framework for the protection and conservation of groundwater resources. The Groundwater Plan "ownership" and implementation falls to every community, watershed organization and state agency with a vested interest in protecting Washington County's groundwater resources.

VIII. COMMUNITY FACILITIES

A. Community Facilities Goals and Objectives

Goal: *Provide all core municipal services and infrastructure efficiently and cost effectively.*

Objectives:

- Encourage all governmental units to maintain their buildings and facilities at the highest standards to serve as examples for private development.
- Evaluate the level of public service provided and the associated costs of services; to ensure that the highest levels of safety, accessibility and services are provided in the community.
- Compare the level of administrative maintenance and emergency response services to community- wide needs and objectives to provide efficient and responsive services to residents and businesses.
- Require that all new developments pay representative costs for capacity within and connection to the public utility system.
- Approve extensions to local utilities only when based on an adopted subdivision plan that contains development staging consistent with city trunk utility plans.
- Maintain standards to minimize inflow and infiltration into the sanitary sewer system, including identification of illegal sump pump connections.
- Ensure adequate and cost-effective maintenance and expansion of public utilities and facilities to serve existing development and accommodate new development.
- Ensure safe neighborhoods and crime prevention measures in the community.

Goal: *Encourage cooperation and joint service initiatives with other community, city, county and school district officials and organizations.*

Objectives:

- Increase the City's level of participation with other governmental jurisdictions and explore potential joint initiatives concerning planning and development of public infrastructure.
- Work with other city, county and local community organizations to provide and enhance special area events and attractions.
- Encourage and support education availability and excellence in the City.

B. Existing Conditions

The City of Forest Lake is a full-service community, home to many facilities enjoyed and used by the public. The Washington County Library is valued by residents and students for its literary and research amenities. This same facility provides location for the Headwaters Service Center in the Headwaters Development. Private healthcare demands in Forest Lake are served by the clinics, two nursing homes, and North Memorial Ambulance Services. Recreational facilities include the Forest Lake YMCA, three golf courses and its many parks, lakes, local and regional trails. Most of the City's community facilities are identified on Figure 8.1 – Community Facilities Map.

Public buildings include the Post Office, City Center (combined with Police and Fire), and Senior Community Center, in addition to the City's compost site, Washington County's Hardwood Creek Library and Service Center, churches and schools. Major highways and the Daniel A. Deponti Airport connect the city to the rest of the metropolitan region and beyond. The Aviation chapter of the Comprehensive Plan contains more information about the airport.

Other recreational opportunities are offered at many facilities in the City, contributing to year-round recreational activity. Castlewood Golf Course, a nine-hole public golf course owned and operated by the

City, is situated near Forest Lake's southern shore. Private, 18-hole courses include Forest Hills Golf Club, which looks out over Shields Lake, and Tanner's Brook Golf Course, located south of the Daniel A. Deponti Airport. The City operates two lighted ice hockey rinks during the winter, located in Tower Park. The City also operates an open outdoor skating rink at Beltz Park. Year-round swimming, classes, and other activities are also available for residents at the YMCA.

The City of Forest Lake is part of Independent School District 831 (Forest Lake Area Schools). District 831 serves all or parts of the Cities of Columbus, East Bethel, Forest Lake, Ham Lake, Hugo, Lino Lakes, Marine on St. Croix, Scandia, Stacy, and Wyoming, and Linwood and May Townships. The district includes seven elementary schools, one 7-8th grade middle school, a senior high, and an alternative learning center, of which all but five of the elementary schools are located in the City of Forest Lake.

In 2015, area voters passed a bond referendum that funded improvement and facility updates to School District properties. The construction included consolidating all 7th and 8th grade junior high students into the Forest Lake Area Middle School building on Goodview Avenue, with an expansion of classroom, gymnasium, and science lab spaces to accommodate the additional students, and an expansion of athletic facilities and classroom space at the Forest Lake High School, with the inclusion of 9th grade students there as well.

Additional academic institutions in Forest Lake include St. Peter Elementary School (a private Catholic school), Lakes International Language Academy (a Mandarin Chinese and Spanish immersion charter school), and the North Lakes Academy (a grades 5-12 private charter school).

Portions of Forest Lake are within the metropolitan urban services area (MUSA), which is the area within the Seven County Metropolitan Area served by Metropolitan Council-run wastewater treatment systems. Public sewer service, as well as public water service is available in the more intensely developed areas of the City (most of the former City area east of Interstate 35, as well as land in the former Township surrounding Forest Lake, Clear Lake, the Headwaters area, and along parts of Highway 61).

Forest Lake also has a diverse roadway network. In-town transportation needs are served by the local street grid as well as by County Roads 2, 32 and 33, State Highway 97, U.S. Highways 8 and 61, and Interstate 35. These highways also make feasible highway commercial business areas, and they serve Forest Lake's commuter needs by connecting the community directly to St. Paul and other parts of the metro area, as well as to Duluth, northern Minnesota, and western Wisconsin. A north-south regional bike trail (Hardwood Creek Regional Trail) runs through Forest Lake. The northern terminus of the Rush Line Corridor is in downtown Forest Lake, with express bus service envisioned to link the city with downtown St. Paul and destinations in between along the U.S. Highway 61 and Interstate 35-E corridor.

Currently, express bus service connects a park-and-ride lot at the Forest Lake Transit Center with down-town St. Paul and downtown Minneapolis to serve rush hour commuters with six boardings each weekday. The Forest Lake Transit Center is located next to the Hardwood Creek Library and Service Center in the Headwaters Development.

C. Community Facility Planning

New Public Works Facility

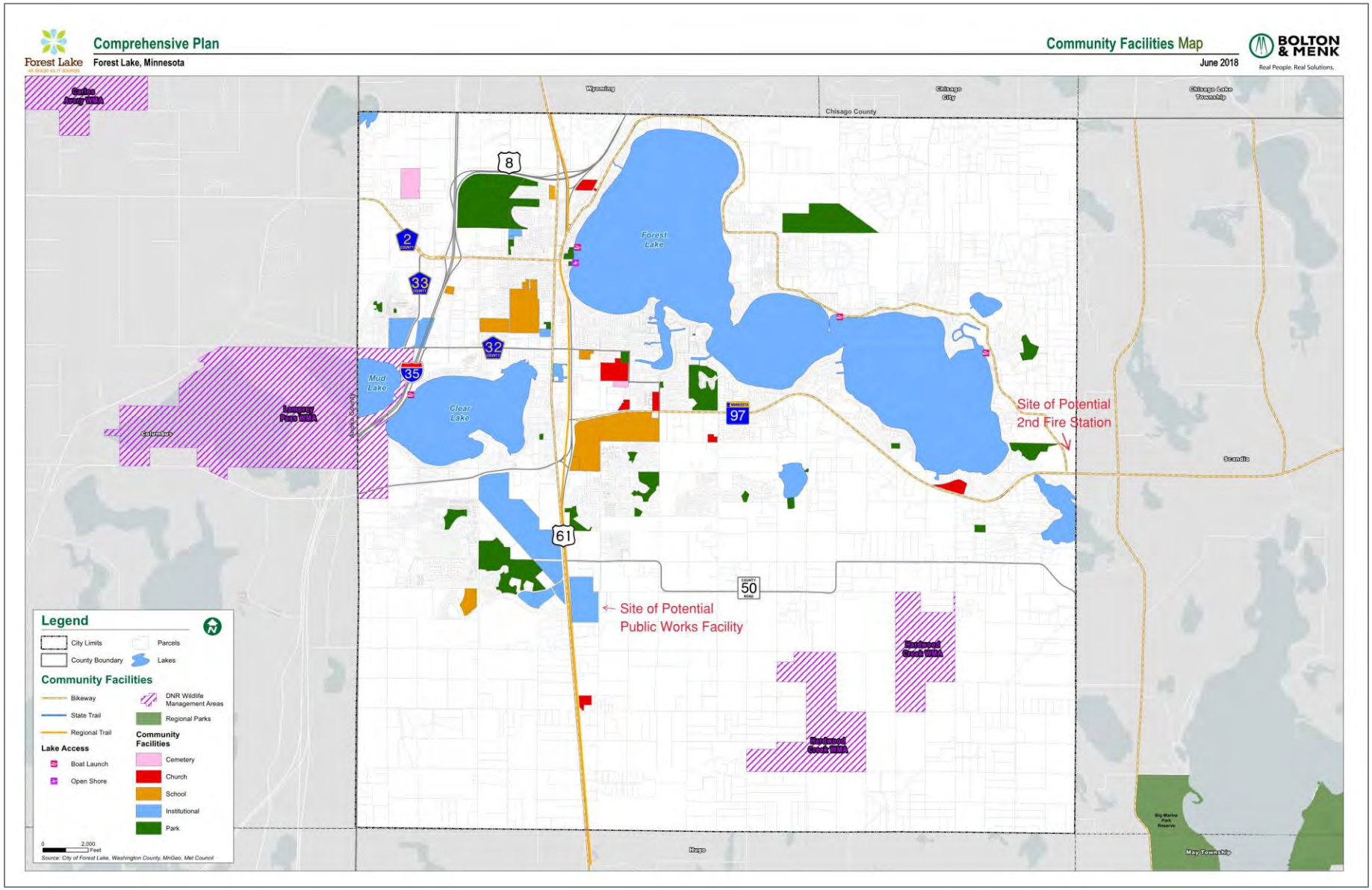
Following the 2014 occupation of the City Center on Lake Street South Department of Public Works staff and operations moved to the former Fire Station on Fourth Street SW by Tower Park and the old water tower. Staff offices were relocated from the old Town Hall, but some equipment and vehicles remain at that site near the intersection of Highways 97 & 61. Recognizing that the city's compost site on Highway 61 located under the airport approach zone represents an opportunity to consolidate all public works operations and equipment at one location, a new public

works facility location is envisioned on the City-owned 55- acre property.

An Additional Fire Station

The location of second Fire Department station within Forest Lake was designated near the intersection of North Shore Trail and Highway 97 in the Future Land Use map of the 2030 Comprehensive Plan. The purpose of the potential fire station would be to better serve the emergency response needs for residents who dwell on the eastern side of Forest Lake. There are no current plans to construct the second fire station but future needs may require an additional facility.

Figure 8-1 - Community Facilities Map



IX. IMPLEMENTATION

The Comprehensive Plan creates a vision for the City of Forest Lake and guides land use and infrastructure improvements so that the City can meet the needs of the community in the future. The vision of the plan can only be realized if the plan is used. Tools to implement the plan will vary in that some will be reactive, such as zoning and subdivision ordinances that guide private developments, and others will be proactive, such as the City's Capital Improvement Program (CIP) for undertaking public improvement projects.

A. Official Controls

To achieve the goals and objectives of this Comprehensive Plan, the City of Forest Lake has adopted a Development Code to establish regulations for zoning, subdivision of land, and shoreland and floodplain areas.

1. Zoning

City zoning codes regulate land use to promote the health, safety, order, convenience, and general welfare of all citizens. They regulate location, size, use and height of buildings, the arrangement of buildings on lots, and the density of population within the City. The City's zoning districts effectively guide development in Forest Lake.

The City of Forest Lake is divided into several zoning districts, outlined below and shown in Figure 8-1. There are also three overlay districts established by the City outside of shoreland and floodplain overlays. The zoning ordinance specifies the permitted and allowed accessory uses in each district as well as procedures for permitting conditional uses or obtaining variances in special situations. The zoning ordinance contains performance standards and lot dimensional standards in order to assure compatible land uses in the community.

- **Conservancy:** The Conservancy (C) District is intended to provide special regulatory protection for those areas that contain valuable natural resources or other similar resources; to foster, preserve, and promote sensitive development; to preserve areas that are not suitable for intensive agricultural production or development due to wetlands, woodlands, steep slopes, scenic views, bedrock formations, and/or other physical features of unique natural and biological characteristics.

- **Agriculture:** The Agriculture (A) District is intended to preserve areas for interim or permanent agricultural use; preserve the rural character of outlying areas of the city; to allow a mix of large lot residential development and agriculturally related uses in areas of the city not yet served by public sewer; and to broaden the choice of residential living styles within the city.

- ***Agriculture Preserve Overlay:*** The Agriculture Preserve (AP) District is intended to preserve areas for interim or permanent agricultural uses as well as to preserve the rural character of outlying areas of the city. This overlay is intended to allow a mix of large lot residential development and agriculturally related uses in areas of the city not yet served by public sewer and to broaden the choice of residential living styles within the city. The AP District is a statutory agriculture district with special tax and assessment benefits**.**

- **Rural Residential:** The Rural Residential (RR) District is intended to provide areas for low density housing in rural areas of the city; to allow a mix of large lot residential development and agriculturally related uses in areas of the city not served by public sewer; and to broaden the choice of residential living styles in the city.

- **Single Family Residential:** The Single-Family (SF) Residential District is intended to provide permanent areas for low density, medium, and large lot single-family urban development to broaden the choice of residential living styles in the city. This district establishes areas for the development of single-family detached housing in areas of the city within public sewer.

- **Mixed Residential, Single Family, and Townhouse:** The Mixed Residential, Single-Family, and Townhouse (MXR-1) District is intended to allow a mix of single-family detached and single-family attached housing (with a maximum of eight units per building) at a more typical single-family density. This is intended to reflect the character of its transitional setting on the fringe of the urbanized area of the city served by public sewer and water and to broaden the choice of residential living styles in the city. The mix of detached and attached housing units shall reflect a minimum 60% detached single-family and maximum 40% attached or detached townhouse dwelling ratio in any given residential subdivision. A conventional subdivision of traditional single-family housing units is also allowed.

- **Mixed Residential, Single and Two Family:** The Mixed Residential, Single and Two-Family (MXR-2) District is intended to establish areas for the development of a mixture of single and two-family housing and to restrict encroachment on incompatible uses. This is intended to broaden the choice of residential living styles in the city and to promote quality development.

- **Mixed Residential:** The Mixed Residential (MXR-3) District is intended to provide areas offering a variety of housing types, including single-family attached and detached dwellings and multi-family structures to retain the environment and character of less intensive styles of multiple-family residence areas by establishing building and lot area requirements. This is intended to broaden the choice of residential living styles in the city and to promote quality development by following a thorough application, review, and approval process.

- **Multiple-Family Residential:** The Multiple-Family Residential (MF) District is intended to establish areas for the development of multiple dwelling structures with a maximum density of 15 units per net acre. This is intended to maintain a residential character in areas with high density, multiple-family development, broaden the choice of residential living styles in the city, set limitations on housing development density, and promote quality development by following a thorough application, review, and approval process.

- **Neighborhood Commercial:** The purpose of the Neighborhood Commercial (NC) District is to allow single multi-use commercial buildings containing convenience retail and service commercial uses at major intersections on small neighborhood scale sites where public sewer is available and sites are designated in the City of Forest Lake Comprehensive Plan. The district is intended to accommodate the basic needs of neighborhoods that would not otherwise have convenient access to retail areas in the city.

- **Broadway Business:** The Broadway Business (B-1) District is intended to establish areas for the location and development of professional offices, administrative offices, limited neighborhood and community-oriented retail, and health care services and facilities that are expected to develop with a high level of amenities, such as landscaping and architectural controls. The intention of this district is to:
    - Encourage a complex of compatible and mutually supportive health care services and facilities;
    - Allow transitional reuse of existing buildings until market conditions warrant redevelopment;
    - Enhance redevelopment potential by prohibiting uses that would impede redevelopment;

- Capitalize on the high volume of traffic and potential customers;
- Ensure an appropriate physical relationship with the surrounding neighborhood, including acceptable traffic operations on local streets;
- Provide a district that is related to and may reasonably adjoin high density or other residential districts.

- **Highway Business/ Commercial:** The Highway Business (B-2) District is intended to accommodate an adequate supply of businesses and services that primarily serve the community and regional needs; to keep retail and service businesses that are oriented to motorists in close proximity to thoroughfares and access from regional highways in areas that are appropriately designated on the Comprehensive Plan; and to encourage grouping of compatible and mutually supportive business uses and services.

- **Limited Industrial Business:** The Limited Industrial Business (B-3) District is to provide a district that supports a mix of industrial and commercial development.

- **Industrial:** The Industrial (I) District is intended to provide an area where industrial, business service, and office uses may locate to provide a range of employment opportunities; to attract new development that will present a positive image to the community; and to provide locations with traffic management capabilities that can adequately handle the traffic generated within the district without disrupting traffic flows on nearby thoroughfares.

- **Business Park:** The purpose of the Business Park (BP) District is to:
  - Reserve larger areas for multi-use buildings, offices, wholesale showrooms, light manufacturing, research and development, training, limited retail uses, and uses accessory to conducting business within a coordinated, well-defined campus environment;
  - Protect business from incompatible and unrelated land uses intruding into the work environment;
  - Create an area to provide opportunities for higher technology business and other industries that may benefit from the accommodation of both office and light industrial uses on-site with internal and external amenities to benefit employees;
  - Provide for accessible business park opportunities near major highways and future transit corridors;
  - Preserve and utilize natural environmental features for office sites that are located next to or overlook public open space and trail uses, woodlands, and wetlands.

- **Downtown Mixed Use:** The purpose of the Downtown Mixed Use District is to establish a strong identity for downtown Forest Lake and provide for high density, compact mixed use development. The intent of this district is to preserve and enhance the downtown appearance with storefronts adjacent to the sidewalks and parking in the rear or side of the buildings and encourage urban living options by allowing a full range of mixed uses within the downtown.

- **General Mixed Use:** The purpose of the General Mixed Use (MU-2) District is to provide an area for compact, walkable, mixed use development along key community corridors and to support high quality development and site flexibility due to the unique site conditions in these areas. The mixture of land uses within the district is essential to establishing the level of vitality and intensity needed to support retail and service uses. A combination of retail, office, service, and residential uses are encouraged although not required. Buildings may also be entirely residential. The mix of uses can occur vertically and horizontally. The placement of building and the relationship of the building, parking, landscaping, and pedestrian spaces is essential to

creating the pedestrian-friendly environment envisioned for the MU-2 District, which are outlined and reinforced through an accompanying Design Manual.

- ***Planned Unit Development (PUD) Overlay:*** The primary purpose of a Planned Unit Development (PUD) is to permit a more creative and flexible regulatory process in guiding land development as compared to the standard development regulations of this chapter. The PUD process provides a joint planning/design effort by the city and the applicants, as opposed to the city establishing limits within which applicants must perform. The intent is to provide a greater degree of creativity and flexibility and promote the health, safety, order, convenience, prosperity, and general welfare of the city and its inhabitants. This includes a rural, open space housing cluster PUD.

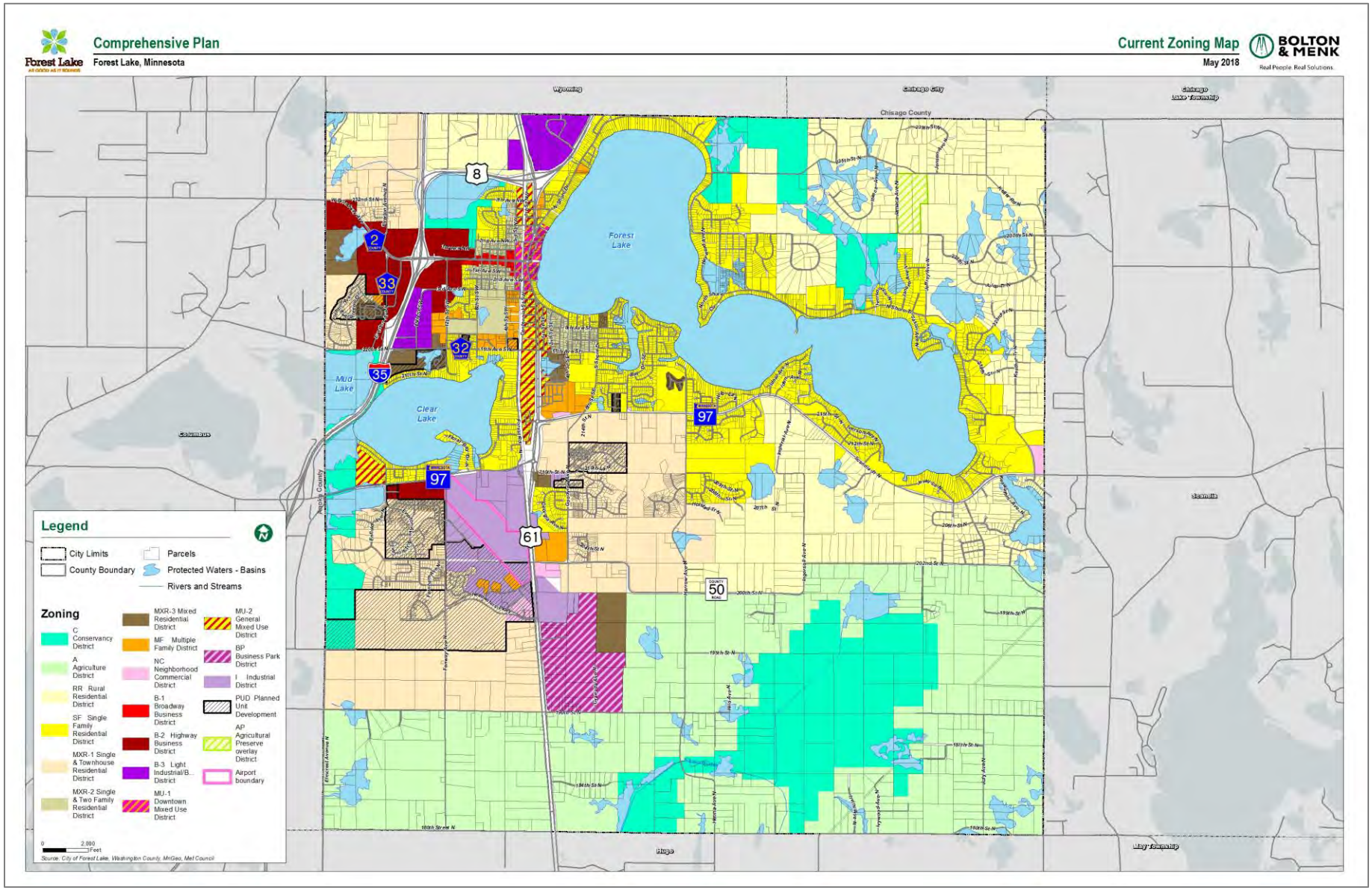
- ***Airport Overlay:*** The Forest Lake Airport Joint Airport Zoning Board, created and established by joint action of the City Council of Forest Lake and the Town Board of Columbus Township pursuant to the provisions and authority of M.S. § 360.063, finds and declares that:
    - An airport hazard endangers the lives and property of users of the Forest Lake Airport, and property or occupants of land in its vicinity, and also if of the obstructive type, in effect reduces the size of the area available for the landing, takeoff, and maneuvering of aircraft, thus tending to destroy or impair the utility of the Forest Lake Airport and the public investment therein.
    - The creation or establishment of an airport hazard is a public nuisance and an injury to the region served by the Forest Lake Airport.
    - For the protection of the public health, safety, order, convenience, prosperity and general welfare, and for the promotion of the most appropriate use of land, it is necessary to prevent the creation or establishment of airport hazards.
    - The prevention of these airport hazards should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.
    - The prevention of the creation or establishment of airport hazards and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards are public purposes for which political subdivisions may raise and expend public funds.

2. Zoning Ordinance Updates

The zoning ordinance should be in compliance with the comprehensive plan. Any change in the community vision as a result of comprehensive plan updates should also be incorporated into the zoning ordinance. To ensure compliance with this 2040 Comprehensive Plan, the following zoning ordinance changes will need to be implemented:

- Update zoning map based on future land use plan
- Reconcile inconsistencies between current zoning ordinance and intended future land uses

Figure 9-1: Zoning Map



3. Subdivision of Land

The Subdivision Ordinance regulates the subdivision and platting of land within the City providing for the orderly, economic, and safe development of land and facilitating the adequate provision for transportation, water, sewage, storm drainage, electric utilities, streets, parks, and other public services and facilities essential to any development. City controls to regulate subdivision of land include an application process, legal notice and public hearings by the Planning Commission, and approval by the City Council. The process includes imposing applicable fees, a development agreement prescribing the standards for the development and imposing penalties for the violation of its provisions. The subdivision of land promotes the public health, safety and general welfare of the people and helps achieve the vision of this comprehensive plan by providing for standards in the development of land.

B. CIP

Capital improvement projects are major projects that benefit the City, including the construction or reconstruction of roads and sidewalks, sewer and water utilities, trails, and park and recreation facilities, as well the purchase of new or replacement equipment and buildings. A capital improvement program (CIP) is a budgeting plan, which lists five years of needed capital improvements, their order of priority, and the means of financing.

The City of Forest Lake's 2018-2023 CIP lists a wide variety of projects intended to meet the City's goals. The CIP is reviewed and updated annually by the City Council to ensure the proper priorities and funding. Table 8-1 below details the City's five-year CIP.

Table 9-1 - 2019 – 2023 Capital Improvement Plan

Expense	Funding	2019	2020	2021	2022	2023
Equipment						
4x4 Pickup	50/50 Sewer/Water	$13,000	$13,000			
Easement Machine	50/50 Sewer/Storm	$12,500				
Skid Steer Loader	1/3 each Storm/Sewer/Water	$23,500				
Excavator	1/3 each Storm/Sewer/Water		$43,750			
Step Van/ Televising Equipment	1/3 each Storm/Sewer/Water	$40,250				
Tag Trailer	1/3 each Storm/Sewer/Water		$6,500			
Vactor						$550,000
Project						
Lift Station & Forcemain					$4,000,000	
Sewer Lining			$500,000			
State Aid Projects		$150,000	$65,000	$25,000		
Local Mill & Overlay		$25,000	$25,000	$25,000	$25,000	$25,000
Resident Work – NW		$30,000				
Cost per Year		**$264,250**	**653,250**	**$50,000**	**$4,025,000**	**$575,000**

C. Updating the Comprehensive Plan

To keep the Comprehensive Plan current, it may be necessary to make amendments from time to time. As the foundational document guiding development, most amendments should occur through a comprehensive effort to address changes to the community overtime.

The provisions of the zoning ordinance will be maintained and preserved through the term of the Comprehensive Plan, unless formally amended. Amendments to the local zoning ordinance will be consistent with the Comprehensive Plan

Forest Lake

AS GOOD AS IT SOUNDS

Prepared by

BOLTON & MENK

Real People. Real Solutions.