

City of Medicine Lake Comprehensive Plan Update

*Final Version Approved
Resolution #19-13 on September 9, 2019:*

CITY OF MEDICINE LAKE
RESOLUTION # 19-13

**A RESOLUTION ADOPTING THE 2040 MEDECINE LAKE COMPREHENSIVE PLAN UPDATE, A
COMPILATION OF POLICY STATEMENTS, GOALS, STANDARDS, AND MAPS FOR GUIDING THE
OVERALL DEVELOPMENT AND REDEVELOPMENT OF THE LOCAL GOVERNMENTAL UNIT**

WHEREAS, Minnesota Statutes section 473.864 requires each local governmental unit to review and, if necessary, amend its entire comprehensive plan and its fiscal devices and official controls at least once every ten years to ensure its comprehensive plan conforms to metropolitan system plans and ensure its fiscal devices and official controls do not conflict with the comprehensive plan or permit activities that conflict with metropolitan system plans; and

WHEREAS, Minnesota Statutes sections 473.858 and 473.864 require local governmental units to complete their “decennial” reviews by December 31, 2018; and

WHEREAS, the Medicine Lake City Council authorized the review and update of its Comprehensive Plan; and

WHEREAS, the proposed Medicine Lake’s 2040 Comprehensive Plan is a planning tool intended to guide the future growth and development of the City in a manner that conforms with metropolitan system plans and complies with the Metropolitan Land Planning Act and other applicable planning statutes; and

WHEREAS, pursuant to Minnesota Statutes section 473.858, the proposed 2040 Comprehensive Plan was submitted to adjacent governmental units and affected special districts and school districts for review and comment on December 6, 2018 and the statutory six-month review and comment period has elapsed; and

WHEREAS, the Planning Commission has considered the proposed 2040 Comprehensive Plan and all public comments, and thereafter submitted its recommendations to the City Council; and

WHEREAS, on November 15, 2019, the Planning Commission conducted a public hearing(s) on the proposed 2040 Comprehensive Plan; and

WHEREAS, the City Council authorized on December 3rd, 2018 the proposed 2040 Comprehensive Plan be submitted to the Metropolitan Council for review; and

WHEREAS, at its regular meeting on June 26, 2019, the Metropolitan Council completed its review of the proposed 2040 Comprehensive Plan and found that the Plan meets the requirements of the Metropolitan Land Planning Act; conforms to the metropolitan system plans for transportation (including aviation), water resources, and parks; is consistent with *Thrive MSP 2040*; and is compatible with the plans of adjacent jurisdictions and affected special districts and school districts; and

WHEREAS, the 2040 proposed Comprehensive Plan includes all revisions made during the review process and responds to additional advisory comments that are part of the

Metropolitan Council's actions authorizing the Medicine Lake to place its proposed 2040 Comprehensive Plan into effect.

NOW THERE, BE IT RESOLVED BY THE [GOVERNING BODY OF THE LOCAL GOVERNMENTAL UNIT], MINNESOTA, that the City of Medicine Lake's 2040 Comprehensive Plan is adopted and is effective as of the date of this resolution.

BE IT FURTHER RESOLVED that, pursuant to sections 473.864 and 473.865 of the Metropolitan Land Planning Act, the City of Medicine Lake will: (1) review its fiscal devices and official controls; (2) if necessary, amend its fiscal devices and official controls to ensure they do not conflict with the 2040 Comprehensive Plan or permit activity in conflict with metropolitan system plans; and (3) submit amendments to fiscal devices or official controls to the Metropolitan Council for "information purposes."

The motion of the adoption of the foregoing resolution was duly made by Member Scott marks, and duly seconded by Member Jack Garberg. Upon vote being taken thereon, the following voted in favor:

Scott Marks
Jack Garberg

Ron Tomczik
Chris Heim

And the following voted against the same:

None

ADOPTED: DATE Sept 9, 2019

Nancy Pauly
Attest: Nancy Pauly, City Clerk

Scott Marks
Scott Marks, Mayor

CERTIFICATE
City of Medicine Lake

STATE OF MINNESOTA)
)SS
COUNTY OF HENNEPIN)

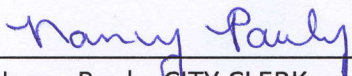
I, the undersigned, being the duly qualified and the Clerk of the City of Medicine Lake, Minnesota, hereby attest and certify that:

1. As such officer, I have the legal custody of the original record from which the attached and forgoing extract was transcribed.
2. I have carefully compared said extract with said original record.
3. I find said extract to be a true, correct and complete transcript from the original minutes of a meeting of the City Council of said City held of the date indicted in said extract, including any resolution adopted at such meeting, insofar as they relate to:

CITY OF MEDICINE LAKE
RESOLUTION # 19-13

**A RESOLUTION ADOPTING THE 2040 MEDICINE LAKE COMPREHENSIVE PLAN UPDATE, A
COMPILATION OF POLICY STATEMENTS, GOALS, STANDARDS, AND MAPS FOR GUIDING THE
OVERALL DEVELOPMENT AND REDEVELOPMENT OF THE LOCAL GOVERNMENTAL UNIT**

WITNESS my hand officially as such Clerk, and the seal of said City, this 9th day of September, 2019.



Nancy Pauly CITY CLERK

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Acknowledgements

MAYOR

Scott A. Marks

CITY COUNCIL

Jack Garberg
Stephen Anderson
Chris Heim
Ron Tomczik

PLANNING COMMISSION

Jon Pettingil, Chair
Bill Enright
Brad Beisel
Jesse Swanson
Glen Skajewski
Gary Feishacker

CITY STAFF

Nancy Pauly – City Clerk
Craig Kile – Treasurer
Rich Halvorsen– Fire Chief
Chris Klar – Parks and Facilities

CONSULTANTS

Hoisington Koegler Group

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Wynn Curtis

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Introduction

This is the City of Medicine Lake’s Comprehensive Plan for 2018. The planning horizon for this plan is to the year 2040, which is consistent with the regional system plans prepared by the Metropolitan Council and required through the Metropolitan Land Planning Act. The plan is also consistent with the Thrive MSP 2040 that has designated the City as a “Suburban” community (See Figure 1). For a description of “Suburban” community designation see the Metropolitan Council’s [Thrive MSP 2040 Community Designation Chapter](#): The Metropolitan Council (which governs the seven county metropolitan area) requires all Cities within their jurisdiction to prepare and file such a plan every 10 years.

The purpose of this requirement is to ensure regional systems are adequately designed and planned to accommodate the anticipated growth of the Metropolitan Area. (For more information see the Metropolitan Land Planning Act of 1976, Minnesota Statute 473.) The suburban areas target an overall density of at least 5 units per acre to promote an efficient use of regional systems and investment. Suburban communities are expected to target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the 2040 Transportation Policy plan.

What is a Comprehensive Plan?

A Comprehensive Plan is a tool used to guide the physical and socio-economic growth of a community. It is intended to be broad in scope while establishing general goals and policies for such elements as land use, surface water management, public infrastructures (sewer and water supply systems), transportation, housing, economic development and redevelopment, park and open space, public facilities and environmental protection.

In general, the Comprehensive Plan will:

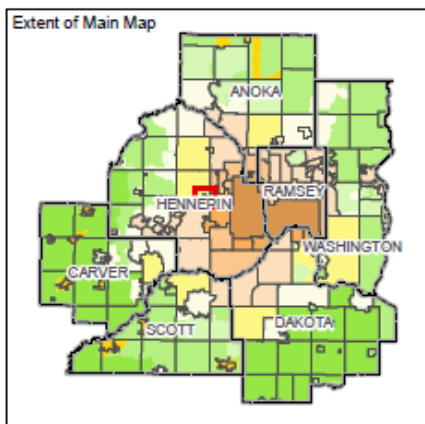
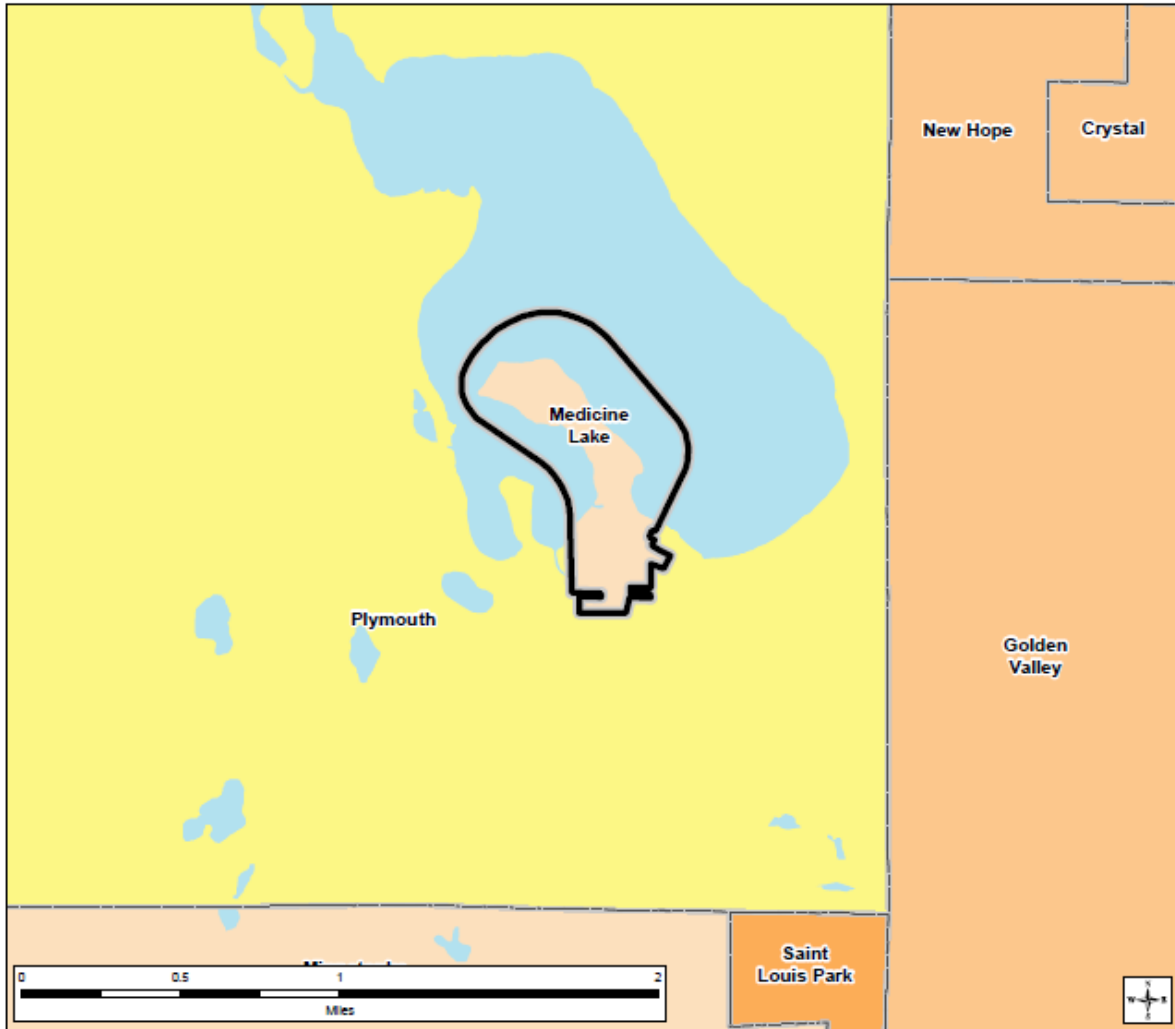
- Guide development and redevelopment efforts
- Preserve desired qualities and resources
- Enhance efficiency of public expenditures
- Spark interest in new investment and reinvestment
- Coordinate development and growth with other governments

Previous Comprehensive Plans

The City of Medicine Lake has had Comprehensive Plans in various forms dating back to the 1960’s. The City of Medicine Lake last updated its plan in 2008.

Figure 1 Community Designation

**Community Designation
City of Medicine Lake, Hennepin County**



Community Designation

- Urban Center - Core City
- Rural Center
- Urban Center
- Diversified Rural
- Urban
- Rural Residential
- Suburban
- Agricultural
- Suburban Edge
- Outside Council planning authority
- Emerging Suburban Edge

- County Boundaries
- City and Township Boundaries
- Lakes and Major Rivers

Community History

The City of Medicine Lake has a rich history that dates back over a century and a half. Much of the community history described here is gleaned from the publication "Medicine Lake Village, Its History and Its People, 1858 - 1968," which was compiled from accounts of life on the peninsula by two of its residents, Mrs. Hattie Naumann Kuehn and Mrs. Les Miller.

"Affectionately known as the 'peninsula' by its residents and locals, it is considered the gem of the surrounding lake area. Originally surveyed by the government in 1855, the land was purchased by the first private owner in 1858. The peninsula was platted in 1887 by Jacob Barge and was known as Medicine Lake Park, First Division. The last decade of the 1800's was by no means considered a boom time in the local economy. However, those who sought summer homes were able to consider a number of lakes including Harriett, Calhoun and the then distant but popular Lake Minnetonka. The advantage Medicine Lake had over these lakes at the turn of the century was its close proximity to Minneapolis and still affordable land.

The early days on the peninsula saw little in the way of public improvements. The main road, Central Avenue, now called Peninsula Road was and remains the only access roadway. The Luce Line Regional Trail did offer limited service but not to the degree that was offered by the Minneapolis Transit Company to Linden Hills, Minnetonka Mills, and Excelsior.

The residents had the persistence and foresight to secure a number of services in the early 1900's including telephone and electricity. Road improvements to the rutted Central Avenue were made through the work of the first formal association of residents in 1922, the Peninsula Association of Medicine Lake. This association was formed primarily on the need to raise funds for public improvement projects and would continue in this form for many decades to follow. This typified the spirit of cooperation among the small group of the peninsula's residents during the early years and would provide the foundation for moving through the middle of the twentieth century.

In 1944, the village was incorporated to what is now known as the City of Medicine Lake. The Village represented the first incorporation in Plymouth Township. The incorporation allowed the Village to adopt local laws and powers through the electing of a council and other city officials. A number of other community facilities and services were added over the next decade including mosquito control, a fire department, garbage collection, street lights, and a village hall. The early 1950's was also a boom time for home construction and new families.

As community growth continued into the 1960's, the city upgraded its roads and installed a sanitary sewer system as a replacement of individual septic systems.

Zoning laws were also enacted to control development in the Village as it transitioned from a summer resort community to a more cosmopolitan community."

The 1980's and 1990's continued to be times of change, seeing more redevelopment of original home sites. In the 1980's the City established a Planning Commission, restructured the Fire Department to a state certified department with 17 to 20 personnel on its roster and added additional stalls for new fire trucks and equipment. The City realigned the South Shore Drive and Peninsula Road intersection and changed all of the street signs.

The 1990's had the City overlaying the roads, rebuilding the lift stations with a strong maintenance program and adding additional lighting in key areas throughout the city. In 1997 a new fire station was added, the city purchased new (used) fire trucks in 2018 and in 2000 and had the City offices completely remodeled during 2000. New zoning regulations were updated and adopted in 1999 and continue to be updated and amended to address changing building and development trends.

In 2004 we celebrated our 60th anniversary which was attended by approximately 300 past and present residents. The 75th anniversary will be celebrated in 2019.

From the late 1990's to the time of this Comprehensive Plan, property values in this City have increased significantly, if not dramatically. This is probably attributable to the almost complete development of all of the available land surrounding Medicine Lake and the fact that there is very little undeveloped lakeshore property remaining. This has resulted in increased pressure on the City of Medicine Lake from both homeowners and developers to continue making improvements to existing homes or in some cases to tear down and build new homes on lots with lake frontage. This trend continues and will continue into the foreseeable future. The map below shows the original platting. The roads labeled Moltke and Bismark do not exist and have been used as building sites. Cleveland and Columbia Avenues also do not exist.

“The City is committed to preservation of its history.”

The Metropolitan Land Planning Act (Minnesota Statutes 473.859, Subd. 2) requires comprehensive plans to include a historic preservation section. There are no properties or structures in the City that are on or that have been identified as eligible by the Minnesota Historical Society for the National Register of Historic Places.

Figure 2—Historical Plat of Medicine Lake Park

SCALE, 1" = 200 FT.

J. DANL.
CIVIL ENGINEER,
MINNEAPOLIS, MINN.



PLAT OF
Medicine Lake Park.
FIRST DIVISION.

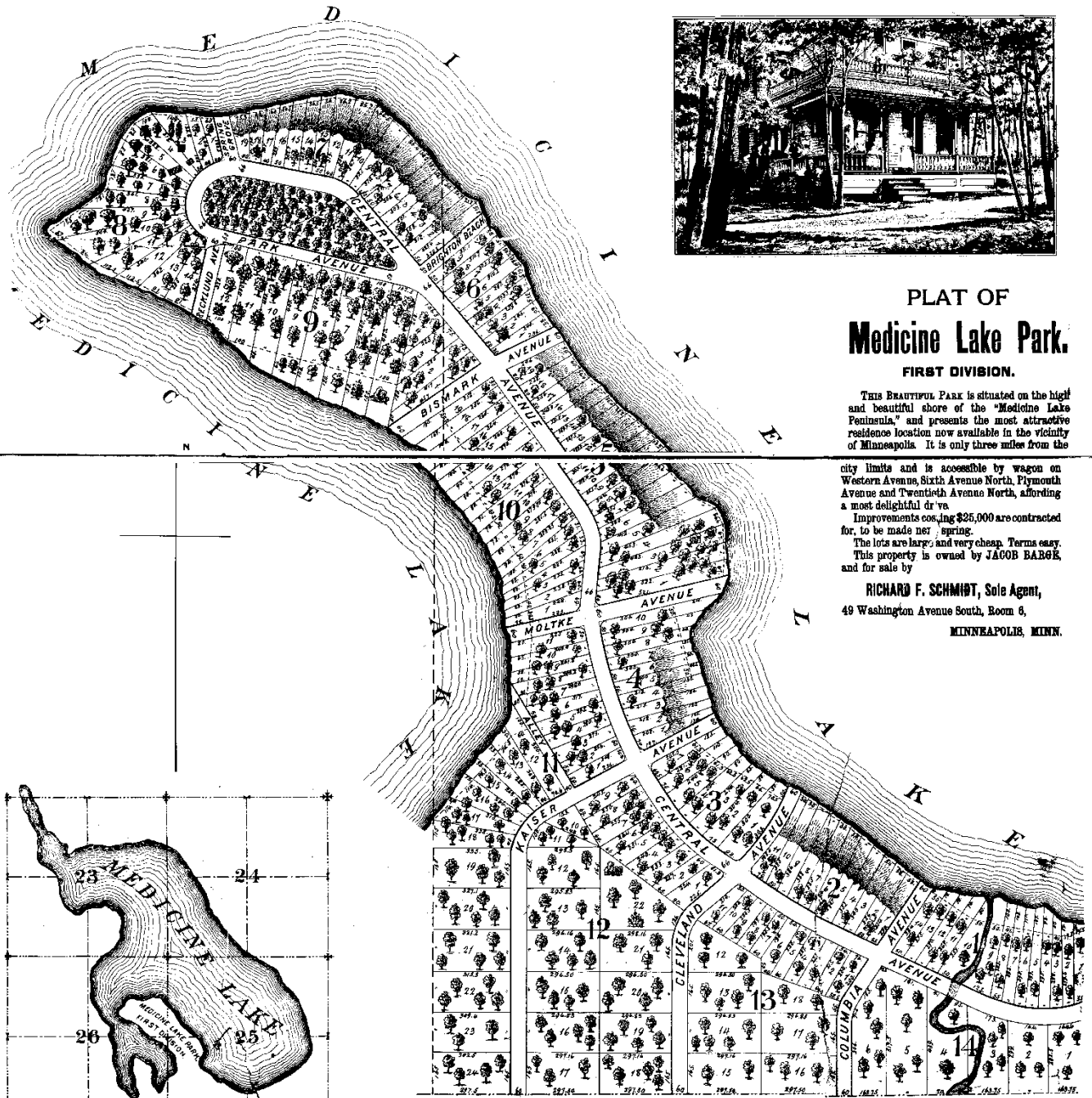
THIS BEAUTIFUL PARK is situated on the high and beautiful shore of the "Medicine Lake Peninsula," and presents the most attractive residence location now available in the vicinity of Minneapolis. It is only three miles from the

city limits and is accessible by wagon on Western Avenue, Sixth Avenue North, Plymouth Avenue and Twentieth Avenue North, affording a most delightful drive.

Improvements costing \$25,000 are contracted for, to be made next spring.

The lots are large and very cheap. Terms easy. This property is owned by JACOB BARBE, and for sale by

RICHARD F. SCHMIDT, Sole Agent,
49 Washington Avenue South, Room 6,
MINNEAPOLIS, MINN.



This map complete with frame but no date was donated to the Village Hall by Mrs. Edna Ertl.

Trends

Population

The population of Medicine Lake is expected to remain relatively stable throughout the next 10 years. According to our most recent census – in 2010, our City has a population of 371 people. The Regional Development Framework projects an increase in population greater than what we expect. This population number is a good planning estimate to ensure that our infrastructure system is able to support unexpected increases in household sizes.

	2017	2020	2030	2040
Population	386	390	400	400
Households	167	170	170	170
Employment	39	60	80	100

Source: Metropolitan Council

Housing Analysis

The Metropolitan Council adopted the *Housing Policy Plan* on December 10, 2014, and amended the plan on July 8, 2015. The purpose of the plan is to provide leadership and guidance on regional housing needs and challenges and to support *Thrive MSP 2040*. The *Housing Policy Plan* provides an integrated policy framework to address housing challenges greater than any one city or county can tackle alone.

Consistent with state statute (Minn. Stat. 473.859, subd. 2(c) and subd. 4), communities must include a housing element and implementation program in their local comprehensive plans that address existing and projected housing needs.

The Metropolitan Council has also determined the regional need for low and moderate income housing for the decade of 2021-2030 (see Part III and Appendix B in the *Housing Policy Plan*).

The Metropolitan Council has determined that Medicine Lake does not have a share of the region’s need for low and moderate income housing.

Housing has played the key role in the City of Medicine Lake’s land use since when it was primarily a lake cabin community with a seasonal population. Platted lots were small, reflecting land use patterns of the day (see Figure 2). Over the years, the community became a location for primary residences, and today, no seasonal homes remain. A number of units may belong to so called “snow birds” but that population has not been evaluated. The legacy of seasonal cottages, however, is still represented by a number of rental units. These rental units still heavily impact the city’s housing stock, being a significant contributor to its unique mix of housing styles, sizes, and prices.

The primary role of most communities is to serve as a place of residence, as is the case in Medicine Lake. The percentage of its land used for housing, however, is higher than most at 70%. Since housing is the dominant component of the community, it is a significant element of this comprehensive plan.

A goal of Medicine Lake is to preserve a supply of “life-cycle housing” in our community. Life-cycle housing is based on the premise that as people mature, their housing needs change. The progression typically involves movement from rental housing to home ownership to “empty nester” situations.

Because of the cost of lakeshore property, there are very few affordable properties for first-time home buyers, which has been true for a significant period of time. Of more concern, though, is that escalating property values—which means escalating property taxes—may force retirees and other individuals to leave our City for more affordable housing.

It is difficult to predict what the economy will do and the impact the economy will have on housing needs and demands. The country has recently experienced a huge housing boom and bust period followed by a recent strong resurgence. It is not possible to predict future housing trends generally. However, Medicine Lake will most likely continue to be a majority single family residences represented by a combination of owner occupied and rental units. This section of the city’s comprehensive plan will present and analyze existing housing characteristics, discuss obstacles to the maintenance of existing housing diversity, and address future needs.

Existing Housing Stock

There are 174 housing units in Medicine Lake according to the Metropolitan Council Housing Assessment (2016 data). Nearly all are single-family residential, but a few double- and multi-unit buildings do exist. Using 2016 data from the Metropolitan Council, there were 162 single-family units and 12 multi-family units in Medicine Lake. 115 of the total number of housing units in the City were owner-occupied.

Although the housing stock in the City of Medicine Lake is primarily single family, the variety of styles makes it unusual. Styles range from 32 cabins, which comprised a resort several decades ago, to a unique assortment of homes, some small, old, and insulated only to accommodate year-round occupation and others newly built reflecting a variety of modern architecture styles and character.

In 2016, 59 of the City’s 174 housing units were considered rental units as per the Metropolitan Council. However, the City of Medicine Lake has a rental housing ordinance and typically issues around 45 rental licenses. This is a more accurate depiction of rental housing in Medicine Lake. Of those rental permits, 32 are for a series of old style cabins located on a few adjacent properties and the other 13 for single family homes, other cabins or carriage houses. Accordingly, approximately one-fourth of the housing units in Medicine Lake as of 2018 are considered rental units.

Housing Values

Housing values in the City of Medicine Lake have risen sharply in the last decade. Houses in our city are expensive compared with those in other cities in the state and even in nearby suburbs. Median housing value in 2016 was \$687,200 compared with \$211,800 for the state as a whole. For the same year, suburban neighbors Plymouth and Golden Valley show median housing values of \$335,000 and \$289,503 respectively. The same source shows that median income is \$98,178 compared with \$85,788 for the state as a whole, \$97,400 for Plymouth and \$85,788 for Golden Valley (source: www.city-data.com/city/Medicine-Lake-Minnesota.html).

The following table shows that in the last decade, the market valuation of the City’s housing has gone from a one level, to a second lower level, and then returned generally to the original level. It must be noted that a significant majority of the valuation is not in the houses themselves but in the lakeshore property they sit on.

Table 2. Median Estimated Market Values

Year	Estimated Market Value Median
2008	671,000
2009	654,500
2010	614,000
2011	574,000
2012	493,500
2013	511,000
2014	586,500
2015	574,500
2016	670,000
2017	677,000

Source: Hennepin County Assessor’s Office

Building Permit Activity

Overall building permit activity has nearly doubled since 2000. The number of building permit activity varies significantly from year to year. The number of new home permits looks to be on the rise. This tiny increase may indicate a growing preference to tear down and rebuild.

Table 3. Building Permit Activity

Year	# of total permits	#of new home permits
2015	35	0
2016	37	1
2017	50	2
2018	27	3

Figure 3. Housing Estimated Market Values (2016 values for taxes estimated in 2017)

Owner-Occupied Housing by Estimated Market Value

Medicine Lake



<ul style="list-style-type: none"> County Boundaries City and Township Boundaries Streets Lakes and Rivers 	<p>Owner-Occupied Housing Estimated Market Value, 2016</p> <ul style="list-style-type: none"> \$243,500 or Less \$243,501 to \$350,000 \$350,001 to \$450,000 Over \$450,000 	<p>1 in = 0.15 miles </p> <p>Source: MetroGIS Regional Parcel Dataset, 2016 estimated market values for taxes payable in 2017.</p> <p>Note: Estimated Market Value includes only homesteaded units with a building on the parcel.</p>
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Housing Affordability

The Metropolitan Council has conducted a housing assessment addressing housing affordability for the City of Medicine Lake. Per this assessment, Medicine Lake has no housing units that are considered affordable to very low-income households (those with incomes less than 30% of the Area Median Income [AMI]). The City has a limited number of housing units considered in the affordable range for low-income households (31% to 50% AMI) and moderate-income households (51%-80% AMI). There are 17 housing units that are considered affordable for low-income households and 39 housing units that are considered affordable for moderate-income households.

Publicly Subsidized Homes

The City of Medicine Lake is aware of NO publicly subsidized homes within the city.

Housing Cost Burden

The Metropolitan Council requires communities to identify the number of households with housing cost burden in the City. Housing cost burden refers to households whose housing costs are at least 30% of their income. Source: U.S. Department of Housing and Urban Development, 2010-2014 Comprehensive Housing Affordability Strategy (CHAS) data, with counts adjusted to better match Metropolitan Council 2016 household estimates. Housing cost burden households in Medicine Lake per the Metropolitan Council are as follows:

- Income at or below 30% of AMI 3 Households
- Income 31% to 50% of AMI 9 Households
- Income 51% to 80% of AMI 9 Households

This information shows that 21 households (about 12.5% of the City's total households) are housing cost burdened.

Existing Housing Needs

The City of Medicine Lake has identified the following existing housing needs:

- A. Maintenance of the existing housing stock, particularly focusing on the maintenance of aging units and existing rental units
- B. Provide a variety of housing types to meet the needs of a community at all stages of life

The Life-cycle Evolution

As people move through the different stages of life, they develop different housing needs. The usual progression is as follows: Recent high-school and college graduates rent for the first few years of their working careers. As they become more established in their professions and family life, they buy their first dwelling—a house, town home, or

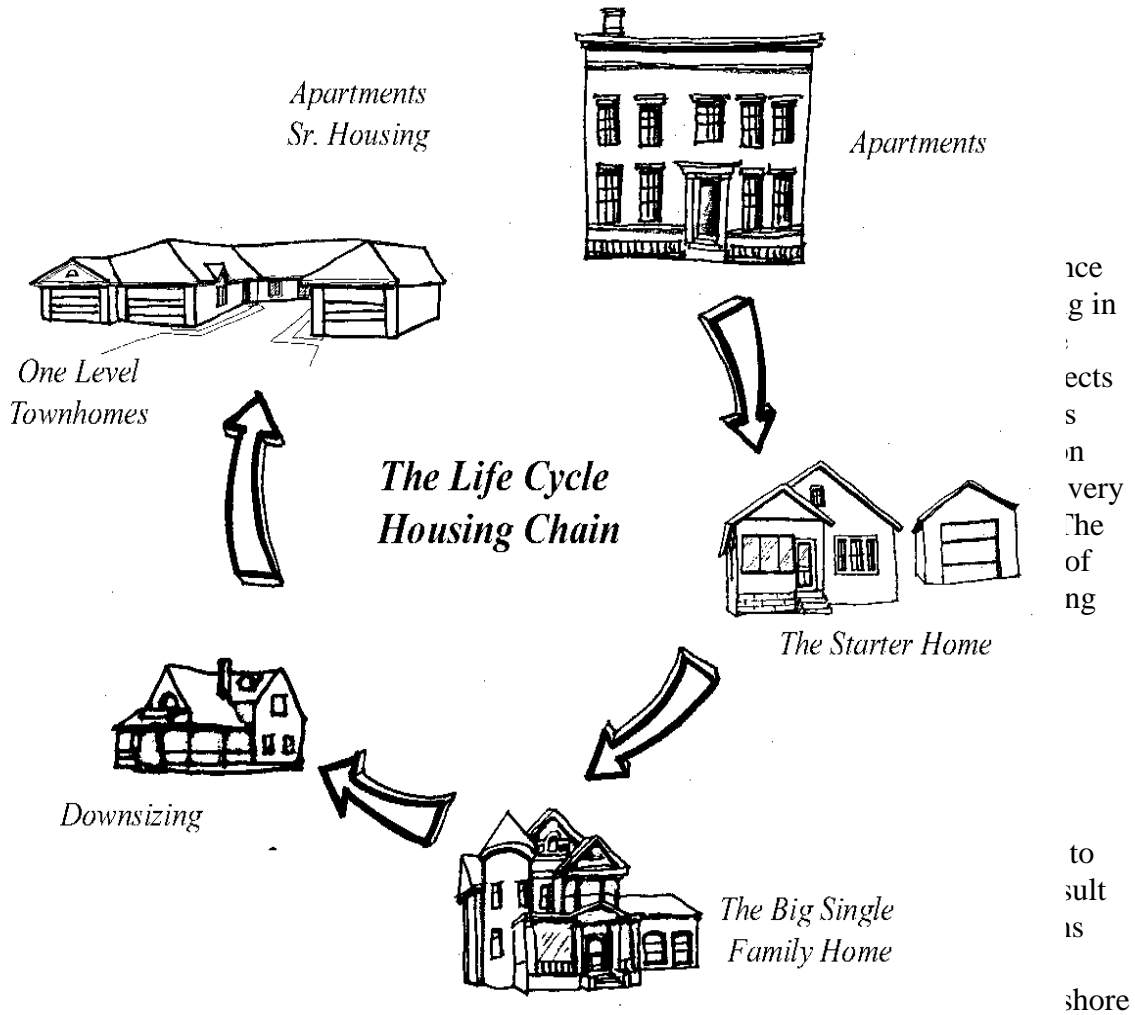
condominium. As their incomes and family size grow, they move into the biggest dwellings. And then, once the children grow up and leave, people tend to downsize by moving to smaller homes with fewer maintenance needs. Finally, they reach retirement and possibly desire or need assisted living housing.

Table 4. The “Life Cycle” of Housing Needs

Age	Stage
18-24	household formation, generally renters
25-34	first-time homebuyers
35-44	second-time homebuyers
45-60*	completing raising children
60-75*	empty nesters, children independent
75+*	elderly, often single

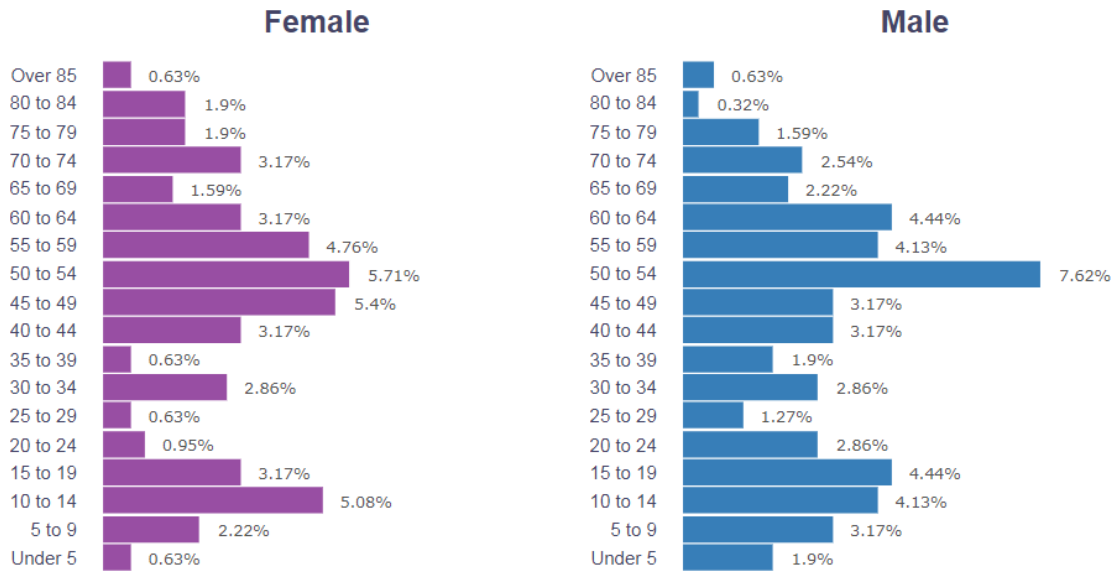
The life-cycle housing chain is illustrated in the following figure:

Figure 4. The Life Cycle Housing Chain



within immediate proximity to our community.- The following chart shows the demographics of the population of the City of Medicine Lake according to 2010 Census data depicting that the large portion of the City of Medicine Lake's population would be considered to be in the middle of the life cycle housing chain.

Table 5. 2012-2016 Census Data by Age Cohort



Source: U.S. Census Bureau [Decennial Census](#) or [American Community Survey](#).

With a strong housing market, quickly appreciating housing values and 95% of the housing stock as lakeshore property, few opportunities exist to make great shifts in the housing stock composition. Families tend to live in the city for many years, making housing turnover less frequent than what may be typical in other communities.

“Our Goal for housing type is to maintain our current ratio of single family detached to attached housing units.”

The Baby Boom Generation and Its Impact on City Housing

The baby boom generation is defined as those persons who were born between 1946 and 1964. We saw the first of this generation begin to draw their Social Security checks in 2007. They have defined and driven the economy for several decades, and as they approach retirement, they will probably affect housing needs as well. Many may seek to downsize their current living situation and may drive the housing market to build more townhomes and senior housing while leaving behind their single-family homes.

The Rental Community

Recently the rental community has seen new development across the metro area and in nearby communities including Plymouth and Golden Valley. Many of these units are more

upper scale complexes with modern day amenities. Maintaining affordability often requires public subsidies. New multifamily housing is extremely difficult to build largely because of public opposition. However, rental housing is a critical component of the life-cycle housing chain. Rental housing shows up at the beginning of the life-cycle chain and at the end, filling the needs of several segments of the population including:

- Commercial and retail service employees
- Single income families and individuals
- Senior citizens living on fixed incomes
- Young people moving out of homes and into the workforce
- Economically disadvantaged households

The City of Medicine Lake has no staff resources to provide assistance to residents for housing needs. The City will refer residents to the Hennepin County Housing and Redevelopment Authority for assistance with affordable housing needs and to help ease the housing burden for lower income residents. The City will also refer residents to Minnesota Housing Finance Agency and to local lending institutions for assistance with housing maintenance needs. Contacts and referral information will be posted on the City's web site.

The rental housing stock in the City of Medicine Lake, as well as throughout much of the metro area, is aging and in need of continuous maintenance. Park Apartments provide for most of this stock with 34 for-rent units. The City of Medicine Lake needs to ensure that the existing rental housing supply is maintained in good condition by periodically reviewing its rental housing licensing program so that good quality rental housing continues to be available within the city. In 2018 we had a total of 45 units of rental housing.

Affordable Housing Need

The need reflects what share of forecasted regional household growth will make less than a set threshold of income and therefore need affordable housing. The Allocation is the determination of each community's share of this regional need and the first step in helping to determine the housing goals and objectives in local comprehensive plans.

As per the Metropolitan Council, the region's total need for affordable housing for 2021 – 2030 is 37,900 units. Medicine Lake's 2021 – 2030 allocation of need is 0 units. This is due to the limited availability of developable land and redevelopment opportunities in Medicine Lake and the relative small size of Medicine Lake.

An affordable unit is defined as “one newly constructed unit under a development action that consumes land.” Housing units that already exist in Medicine Lake that may be deemed affordable do not qualify under this projection. A unit of housing is deemed affordable if it is priced at or below 30% of gross income of a household earning 60% of the Minnesota median family income (\$50,006.00 as of 2016). The 60% threshold is

determined by the U.S. Department of Housing and Urban Development (HUD) and is a cutoff for tax-credit housing development.

Table 6. 2011 – 2030 Allocation of Affordable Housing Need

Community	Household Growth 2021-2030		Share of Region’s Growth 2011 - 2020		Percentage of Housing Stock That is Affordable	
	New Affordable Unit Need	All House- holds	New Affordable Unit Need	All House- holds	2005	2020
Medicine Lake	0	0	0.0%	0.0%	0%	0%

Source: https://metro council.org/Handbook/Files/Existing-Housing-assessment/02395082_MedicineLake_ExistingHsg.aspx

Medicine Lake will find it difficult if not unlikely to see any additional affordable housing. The amount of unconstrained vacant land available for development is very limited. Such lands in our community demand a much higher cost making the notion of affordability unattainable. Additional practical difficulties (land area, wetlands, market factors, etc.) make these remaining non-lakeshore parcels unlikely candidates for affordable housing.

“Our Goal for affordable housing is to preserve the value and quality of the existing housing stock and to support efforts of our neighbors in developing affordable housing on a regional basis.”

Housing Quality

Maintenance of housing usually takes one of two forms: voluntary or regulatory. Most municipalities rely on both approaches. Ideally, Medicine Lake residents will continue to maintain their property in a safe, sound and attractive condition. Realistically, a certain percentage of the homes will not be adequately maintained because of economic hardship or owner preferences. In these cases, governmental agencies and regulatory tools need to be employed.

The City of Medicine Lake does recognize that declining economic conditions frequently result in poorly maintained housing. In these circumstances, programs offered by local, county, state and federal agencies should be employed. Due to changes in federal policy, grant and loan programs to accomplish housing maintenance are much more limited than

they were in the late 1970s and early 1980s, but local and state programs do exist that may provide assistance to Medicine Lake residents.

Housing Tools

The City of Medicine Lake does not have city staff available to offer housing assistance. Elected and appointed officials are volunteers that usually lack the expertise to offer housing assistance advice or direction. The City will consider any and all programs that are presented by applicants or developers for housing programs. Each program will be considered based on their impacts to the City and consistency with the comprehensive plan. The city will refer any individual inquires to appropriate agencies or resources. The Hennepin County Housing and Redevelopment Authority (HCHRA) offers the City the ability to administer programs for eligible projects and homes. The following programs are available through HCHRA. The City’s intent is to “refer” resident’s to these programs to meet existing and possible future housing needs.

HCHRA Program	Circumstances and Sequence of Use	Identified Housing Need
Minnesota City Participation Program First-Time Homebuyers Mortgages	The City will refer interested parties to these programs via direct communication and will share information about these programs on the City’s website.	Ensure an adequate supply of quality affordable housing
Minnesota Housing Finance Agency (MHFA), offering a deferred loan program, revolving loan program, and an accessibility loan program		Maintain and enhance the existing housing stock, particularly focusing on the maintenance of aging units and existing rental units; ensure an adequate supply of quality affordable housing
MHFA Home Improvement Loan Programs, including the Fix-up Fund and the Community Fix-up Fund		Maintain and enhance the existing housing stock, particularly focusing on the maintenance of aging units and existing rental units
MHFA Community Revitalization Fund Program, the umbrella name for a variety of funding resources		Maintain and enhance the existing housing stock, particularly focusing on the maintenance of aging units and existing rental units; provide a variety of housing types to meet the needs of a community at all stages of life; and ensure an adequate supply of quality affordable housing
Minnesota 4d Property Tax Classification Program, inspections and monitoring	The City will evaluate the appropriateness of a local 4d tax incentive policy.	Ensure an adequate supply of quality affordable housing

The City will also refer residents to surrounding cities, local lenders, and the Minnesota Housing Finance Agency among others for their housing needs. In addition to county programs, there are options for people living on fixed incomes to continue living in their homes, one of which is a reverse mortgage offered by many lending institutions. A reverse mortgage is a type of home equity loan that allows a homeowner to convert equity into cash. Reverse mortgages work much like traditional mortgages, only in reverse. Rather than making a payment to a lender each month, the lender makes payment to a homeowner.

Funds obtained from a reverse mortgage are typically used by seniors on fixed incomes to meet housing expenses such as taxes, insurance, fuel, and maintenance costs. This type of loan could be used to meet the City’s need of ensuring an adequate supply of quality affordable housing. The City will inform interested parties about this type of loan and include reference links to housing assistance on the city website.

“Our Goal for all housing is to ensure property maintenance is kept to a high standard, providing a quality housing supply that continues to contribute positively to our community.”

Housing Availability

The housing analysis identified the need for housing serving those entering the housing market, empty nesters and elderly, particularly those in need of health care services. As discussed in this section, Medicine Lake will continue to be a highly desirable lake community in which to live, and so it will be increasingly difficult to keep housing affordable. Since there is virtually no available land for further development at this time absent significant redevelopment, preservation of the existing housing stock is our most likely means of ensuring an available housing supply. Rental units are an option for those at the beginning and end of the life-cycle housing chain.

“Our Goal for housing availability is to enable residents to live in their homes as long as they desire without compromising health and welfare of themselves and their neighbors.”

Housing Conclusions and Recommendations

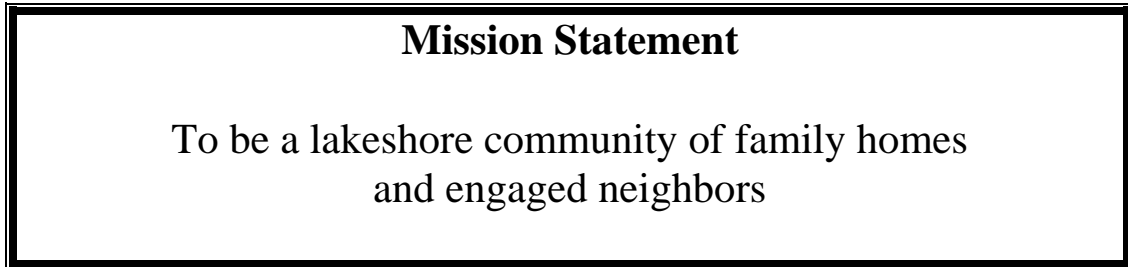
Based on the information in the previous sections, future planning for housing in Medicine Lake needs to focus on two central issues: housing quality and housing availability.

Employment

Medicine Lake is considered a bedroom community of single family homes. There are two commercial businesses in Medicine Lake. The Metropolitan Council projections for employment exceed what we anticipate to be our future employment opportunities. Employment growth is limited to existing business and home offices.

Mission Statement

The following is information generated through community engagement processes conducted in prior planning efforts.



What characteristics define Medicine Lake?

- Small town feel
- Country flavor
- No sidewalks
- Housing variety (not "cookie cutter")
- The lake
- Proximity to downtown Minneapolis
- "Community" social fabric exists
- Involved residents
- Access to road systems/amenities
- Safe community for families
- Opportunities to meet other residents
- Entry "greenspace" to delineate city
- Residential community
- Minimal business/industrial tax base
- "Invisible," "Isolated," "A secret"
- City buffered by natural resources
- Bedroom community
- People care for neighbors
- Mix of people
- High percentage of white collar workers
- A special place
- Quality of life is uncompromised - "Place to live / cabin to play"

Benefits

- The flexibility of being in a small city
- Everyone has the opportunity to know everyone else
- Living on Medicine Lake is like living on a lake in Northern Minnesota with an abundance of wildlife including geese, loons and bald eagles
- We are 8 miles from downtown Minneapolis

- The City offers many social events such as the annual picnic, Halloween children’s party and the Progressive Dinner

Weaknesses

- The city is small, having only 370 residents
- The city is largely already developed, so there is little opportunity to plan as a new community might
- No permanent full time city staff
- Lots and streets were platted for cabins in 1887 and accordingly most of the lots are small
- The street right-of-way is narrow
- Deep, narrow lots and two front yards result in limited ‘on site’ storage
- Road and sewer 50 years old – with a 2017-18 sewer renovation project completed to do a new cured in place main sewer line resulting in a “new” main sewer line.
- The only lift station in the City is 50 years old.

Guiding Policies and Visions (as obtained from our City surveys)

- We would like to preserve the small town like feel of our community
- We would like to remain our own separate City
- We would like to promote citizen involvement in our community and local government
- We would like to promote the recreational use and enjoyment of Medicine Lake
- We would like to promote good water quality for Medicine Lake
- We would like to protect our ground water / aquifer from contaminants.
- We would like to preserve “greenspace” in our City
- We would like to preserve and protect our City’s streets, sanitary sewer system and parks.
- We would like to promote the safety for our community both through the Hennepin County Sheriff’s Department and the Medicine Lake Fire Department, which consists of an all-volunteer force.
- We like the charm we have of being an old fashioned small lake community having a mix of old and new and big and small homes
- We like the idea of knowing and recognizing our neighbors
- We like the fact that we have a small and efficiently run government
- We like the fact that we are able to see wildlife in our City
- We would like to keep Medicine Lake as a great place to live and raise our children
- We like the fact that we have our own City Newsletter – The Laker and community activities including progressive dinners, picnics, Halloween and Christmas parties
- We like the fact that we have our own City website through which we can share information with our citizens

Land Use

Although Medicine Lake is considered a single family community, there are lands for commercial, park and municipal uses. The following categories represent existing land uses in the community.

Existing Land Use

- Single-Family Residential - This category includes single family residential land uses.
- Commercial – This category identifies the two commercial uses in the community.
- Park - This category identifies the Jevne Park site and additional not officially designated open space that serves as “park” areas
- Public/Institutional - The municipal category recognizes the City Hall and Fire Station.
- Vacant/Undeveloped – Undeveloped land includes all tracts of vacant land. This category includes land that is currently lying idle and/or is open space that may or may not have environmental issues.
- Railroad/ROW – Includes railroad and public roadway rights-of-way.

Corresponding existing land use numbers are as follows and are not believed to have changed much in the interim.

Table 7. Existing Land Use (2017)

Category	Acreage	Percentage
Residential *	68.99	64%
Commercial	4.72	4%
Park/Open Space	3.47	3%
Public/Institutional	0.59	1%
Vacant/Undeveloped	14.42	13%
Railroad/ROW	15.1	14%
TOTALS	107.29	100%

* Residential includes 6.5 acres that are part of the Park Apartment PUD
 Source: Hoisington Koegler Group Inc.

There is an inherent character in Medicine Lake that is largely the result of the natural environment and the historical single family development pattern. With over 92 percent households having lake frontage, Medicine Lake is a lakeshore community in its truest sense. This characteristic is obvious along Peninsula Road, Kaiser Avenue and Colonial

Circle. Nearly every home has two front yards, street side and lakeside. With this lake orientation, many residents refer to their lake yard as the “front yard,” further reinforcing the close relationship of the community with the lake.

Originally platted for summer homes in the late 1800’s, the lots are long and narrow, most averaging 50 to 70 feet of street frontage. Although those lots were ample for summer homes, in general terms they are tight for larger homes with attached garages that are more typical in today’s housing demands on the Peninsula. Accordingly, new home construction (as a result of tear down or other peril) and remodels or expansions, often require some type of variance. In that regard the City’s Planning Commission and Council are constantly facing difficult decisions as to which variance requests are reasonable and necessary to the specific property and which ones aren’t. Although these decisions are often difficult, the variance procedure is necessary in order to ensure that our views to and from the lake are preserved and our property values are thus maintained.

Although many Cities opt for curbs, gutters, sidewalks and boulevards, it is not the intention of the City of Medicine Lake to change the character of our Peninsula Road. Part of the charm of the City of Medicine Lake is the rural character of our narrow winding roadway with its 20mph speed limit.

Many Cities look for a commercial tax base. Again, the City of Medicine Lake is somewhat unique as our tax base comes almost entirely from single family homes.

There are currently only two commercial businesses in the City of Medicine Lake, both of which are located on South Shore Drive. One of those is a property development company and the other is an event center.

The event center is the Hutton House of Medicine Lake. The Hutton House Lake caters events such as weddings and other gatherings, has a liquor license but does not have full kitchen facilities for the preparation of food.

There is a limited amount of vacant land left in the City. That which is vacant is heavily encumbered by wetlands, floodplains or in some cases former uses that have altered the constructability of the site. The City of Medicine Lake owns all of the vacant land on Kaiser Avenue as a result of tax forfeiture. Much, if not all, of this land is held in a conservation easement to be left pretty much as it is and undeveloped. The City of Medicine Lake also owns the sixth lot on Colonial Circle with no such limitations. At this time the City is considering whether to sell this lot for residential development. In addition, the City of Medicine Lake owns the vacant lot at the entrance to our City at the northeast corner of the intersection between 15th Avenue and South Shore Drive.

The vacant land on the west side of South Shore Drive consists of 7.76 acres, 6.48 of which are delineated wetlands and are constrained by the Wetland Conservation Act. Our past planning efforts have identified future land use on this corner as open space. Part of this land is now open space landscaped as a park with a walking trail through the center designated unofficially as Centennial Park.

In addition, there are several lots located at 1342 South Shore Drive, located between the Hutton House property and the Luce Line Regional Trail consisting of approximately 2.66 acres. This property was rezoned from commercial to residential and now includes one single family residence. A “green space” setback was acquired for this property to preserve the “up north” feel of the entrance to Medicine Lake as a condition of rezoning.

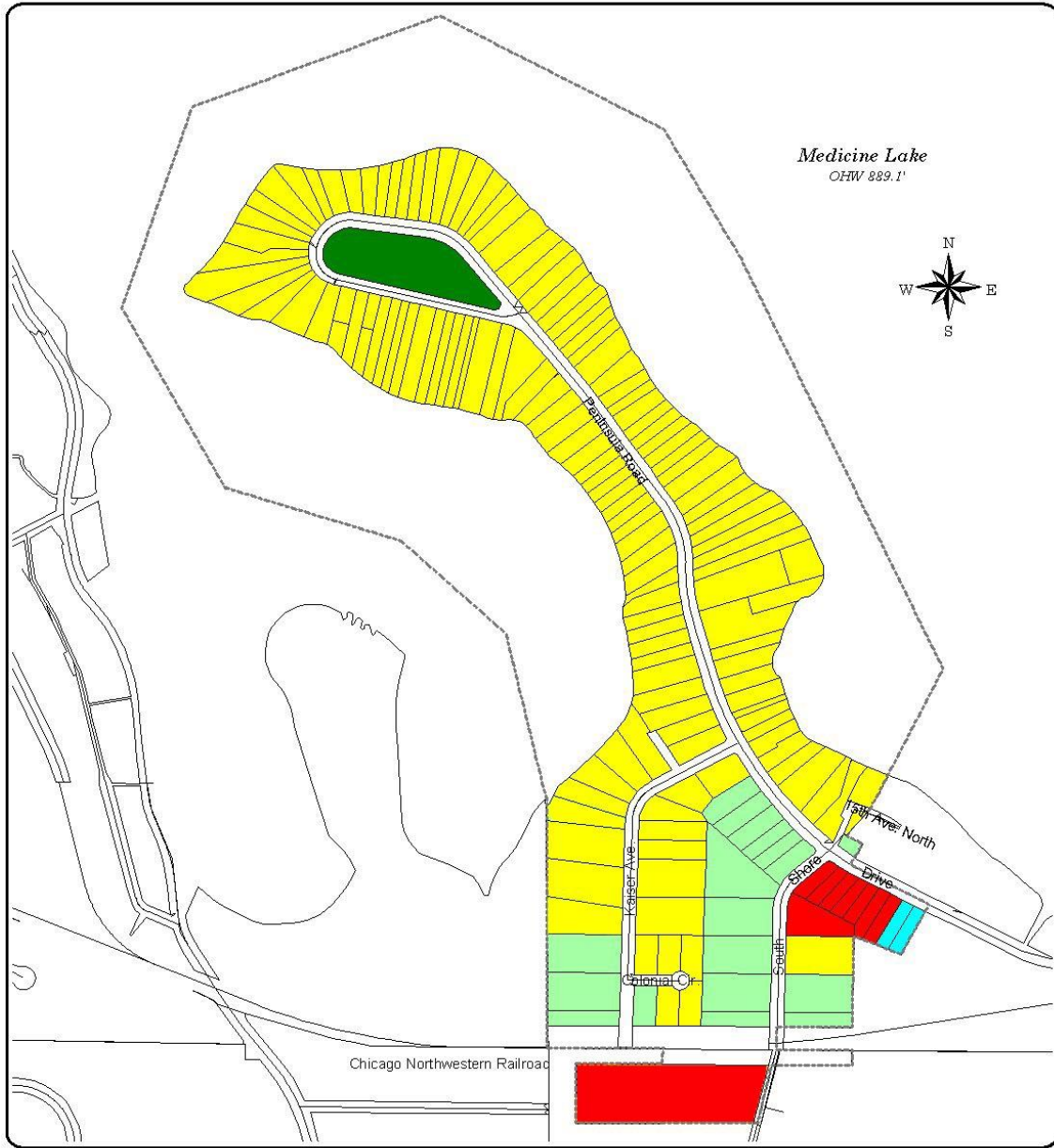
We recognize the challenges of simply acquiring land for open space. We also recognize the land owners have a right to a reasonable use for the property.

The Metropolitan Land Planning act requires our community to address aggregate resources in our community. The City of Medicine Lake does not have any available aggregate resource supplies.

The following planning framework is the basis for our land use plan:

- The single family residential character will be maintained by promoting compatible land uses. Land uses that detract from this character should be addressed through site design improvements, mitigation of offensive use characteristics, or elimination of the use.
- The country charm present at community entry points should be preserved.
- Medicine Lake is a vital local and regional water resource which should be protected through proper location of adjacent land uses and mitigation of their associated impacts.
- Environmental conditions will limit development of certain areas of the community. These areas are better protected as open space.
- Existing commercial businesses should be located accordingly on the land use plan map because of their proximity to transportation systems.
- Adjacent land uses and their market forces in the City of Plymouth should be considered when determining appropriate land use suitability in Medicine Lake.

Figure 5. Existing Land Use (2017)



**City of
Medicine Lake**

Comprehensive Plan

Existing Land Use

- Residential
- Commercial
- Park
- Public/Institutional
- Vacant/Undeveloped
- ROW/Railroad

0 300 600 Feet
Scale: 1" = 600'

Mapping assembled with available
Hennepin County Property and Survey Data

Hoisington Kosgler Group

Future Land Use

Our land use plan is based on the following future land use categories.

Single-Family Residential - This category includes single family residential land uses. The density range for this category is 1 to 3 units per acre.

Residential Planned Unit Development - This category is intended for those lands that have the potential to redevelop as single family areas and because of their size and relationship to the surrounding neighborhood, need special attention to ensure their compatibility in the community. Currently the Park Apartments are the only property given this designation. The density range is 1 to 3 units per acre with the maximum density governed by a PUD agreement which limits the density to approximately 3 units per net acre.

Commercial – This category identifies the commercial use in the community which is intended to be limited to specialized commercial uses such as office or service oriented uses.

Park - This category identifies the Jevne Park site.

Public/Institutional - The municipal category recognizes the City Hall and Fire Station.

Open Space – This category identifies lands that have sensitive environment areas that pose potential development problems.

Railroad/ROW – Includes railroad and public roadway rights-of-way.

Corresponding future land use acreages are as follows:

Table 8. Future Land Use Calculations

Category	Acreage	Percentage
Single Family Residential	63.47	59%
Residential PUD	6.5	6%
Commercial	7.39	7%
Park	3.47	3%
Public/Institutional	0.72	1%
Open Space	10.64	10%
Railroad/ROW	15.1	14%
TOTALS	107.29	100%

Source: Hoisington Koegler Group Inc.


“Our Goals for land use on the Peninsula are as follows:

- 1. that our property rights are protected;***
- 2. that our values and enjoyment of Medicine Lake are not inhibited by the choices our neighbors might make;***
- 3. that the choices we make for use of our property do not inhibit our neighbors use of their property;***
- 4. that our choices for how we use the land contribute positively to the water quality of Medicine Lake;***
- 5. that the Peninsula thrives as a cohesive neighborhood that offers a balance of privacy and community involvement;***
- 6. that our Peninsula remains a predominantly residential community”***

Figure 6. Future Land Use Plan (2040)











**City of
Medicine Lake**



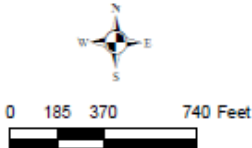
Comprehensive Plan

Legend

Planned Land Use

 Single Family Residential	 Park
 Residential PUD	 Public/Institutional
 Commercial	 Open Space
	 ROW/Railroad
	 City Limit

October 23, 2018



Natural Resources

Medicine Lake's biggest natural resource is Medicine Lake. It is the reason we live where we do. Medicine Lake has a surface area of approximately 850 acres and is the second largest lake in Hennepin County second only to Lake Minnetonka which is 14,000 acres.

Medicine Lake is the beginning of Bassett Creek which flows through Golden Valley, St. Louis Park, Minneapolis, and into the Mississippi River.

Medicine Lake, from an elevation point, is the low spot in the area. It should be noted that the elevation of Medicine Lake is about 40 feet below that of Lake Minnetonka. It receives runoff from Ridgedale and large areas surrounding Medicine Lake. As the City of Plymouth has been developed including streets and storm sewer systems, Medicine Lake has become the recipient of much of that runoff. That runoff has resulted in the introduction of additional sediments, phosphorous and other materials into Medicine Lake. The City of Plymouth is addressing these runoff concerns by having constructed 3 large holding ponds. One of those holding ponds is located near the City of Plymouth's East Beach. Another holding pond is located near the At the Lake Apartments on the eastside of Medicine Lake and a third holding pond is behind the City of Plymouth's West Beach. The Cities of Plymouth and Medicine Lake have attempted to minimize phosphorous runoff by prohibiting the use of lawn fertilizers which contain phosphorous.

The City of Medicine Lake is working with the Bassett Creek Watershed Management Commission to determine if an expanded holding pond can be developed in Jevne Park. Water runoff currently collects in a small pond in the Park and whether this can be enlarged is being studied. At this time expansion and reconstruction of this holding pond is being contemplated. A feasibility study is currently being done.

“Our Goals for preservation of our Natural Resources are:

- 1. To minimize phosphorous runoff by prohibiting the use of lawn fertilizers which contain phosphorous and educating our residents about best management practices to protect our water quality.***
- 2. To encourage residents to plant shoreline vegetation or rain garden areas that will filter runoff before it reaches the lake.”***

The elevation of Medicine Lake can vary in a typical year by a foot or more. The lake level is controlled by a non-adjustable dam with a weir. The following illustrates the significance of some of the lakes elevations.

- Regulation flood protection elevation – (for building purposes) **892.4 ft.***
- 100 year flood elevation – **890.4 ft.**
- Elevation at which the no-wake ordinance goes into effect – **889.4 ft.**
- Elevation at the top of the Bassett Creek Dam – **889.2 ft.**
- DNR ordinary high water mark – **889.1 ft.**
- Elevation at the bottom of the Bassett Creek Dam – **887.7 ½ ft.**

*all of these are feet above sea level

As with any lake, we always need to be concerned about periodic flooding and prohibiting people from building structures that would likely be damaged by those periodic flooding events.

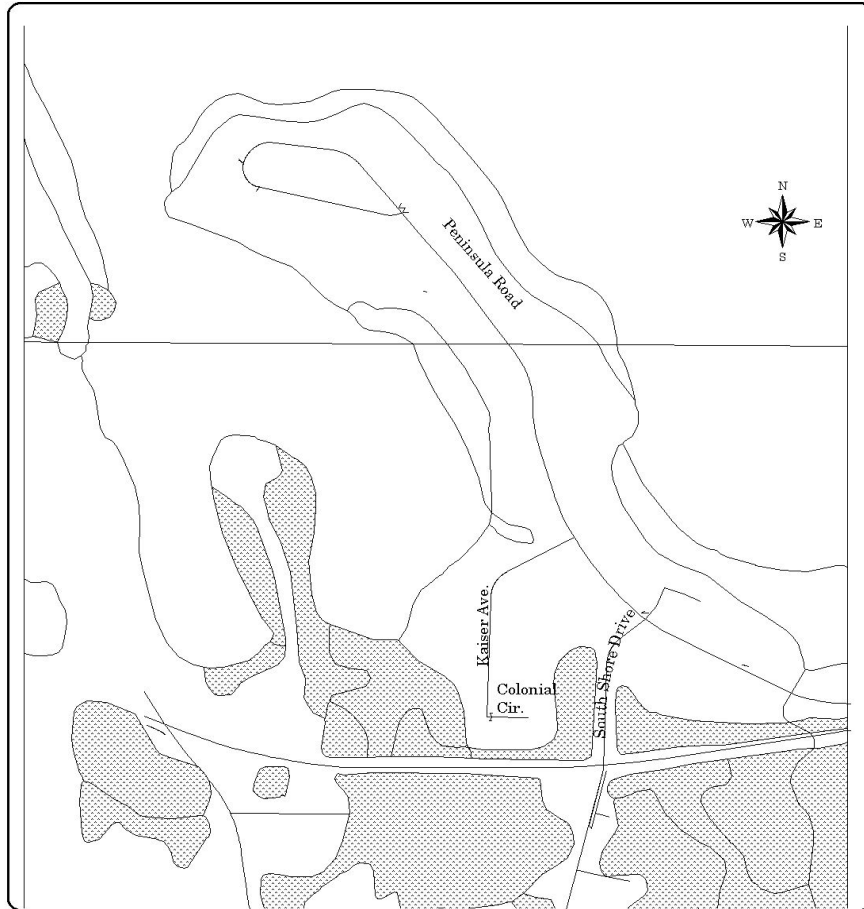
The City of Medicine Lake is concerned about Medicine Lake’s water quality. In that regards, we have participated (both financially and through our volunteers) in addressing water quality issues including lake weed treatments with the City of Plymouth and Three Rivers Park District. The ultimate goal is to first be able to maintain the lake’s water quality and then, as time goes on, to actually improve the lake’s water quality through various measures. Improved water quality will be the result of the City following and implementing a number of best management practices for its residents, lake users and those who seek to develop or redevelop properties.

Recently Medicine Lake was diagnosed as having zebra mussels and starry stonewort. Any efforts to address these invasive species will be spearheaded by the DNR and BCWMC.

Wetlands are important as they act as natural filters by removing impurities as waters pass through them prior to entering the underground water table or lake. They serve as a valuable habitat for wildlife providing food and cover.

Figure 7. National Wetland Inventory

Note: this map is provided for general identification purposes. Actual wetland boundaries should be defined by a certified wetland survey conducted by a qualified wetland specialist.



As the City of Medicine Lake is nearly all surrounded by Medicine Lake, maintaining and improving the quality of the lake itself is paramount. Given the city's size and current infrastructure, there are limited opportunities for stormwater management retrofits, with the exception of the Jevne Park area. The project goal is to construct an improved water retention pond in Jevne Park, which will result in:

- better management of stormwater runoff as the city has no municipal storm sewer system;
- increased capacity for stormwater storage within the pre-existing natural pond/wetland and swale in Jevne Park;
- a better way to route, carry and store excess stormwater to minimize flooding within Jevne Park and on adjacent residential properties (approximately 15);
- reduced sediment and phosphorus loading to Medicine Lake;
- reduced City of Medicine Lake capital and maintenance expenditures associated with road and culvert repair caused by excessive volumes and rates of runoff; and,
- sustainability of existing waterfowl and wildlife habitats.

A feasibility study is underway for completion in late 2018 or early 2019.

Solar Access

The Metropolitan Land Planning Act (Minnesota Statutes 473.859, Subd. 2) requires that local comprehensive plans include an element for the protection and development of access to direct sunlight for solar energy systems. The City will protect such access by requiring minimum standards for lot sizes, amounts of open space, yard setbacks and maximum height of buildings for residential development. Land uses should not preclude the possible use of solar energy systems. The City will review and revise, as necessary, the zoning ordinances to ensure protection of solar access. Current structure setback and height standards are sufficient to prevent solar access.

Gross and Rooftop Solar Resource Calculations

The gross solar potential and gross solar rooftop potential are expressed in megawatt hours per year (Mwh/yr), and these estimates are based on the solar map for Medicine Lake (Figure 8, Table 9). These values represent gross totals; in other words, they are not intended to demonstrate the amount of solar likely to develop within Medicine Lake. Instead, the calculations estimate the total potential resource before removing areas unsuitable for solar development or factors related to solar energy efficiency. The gross solar generation potential and the gross solar rooftop generation potential are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The conversion efficiency of 10% is based on benchmarking analyses for converting the Solar Suitability Map data to actual production, and solar industry standards used for site-level solar assessment.

Table 9. Gross Solar Generation Potential (Source: Metropolitan Council)

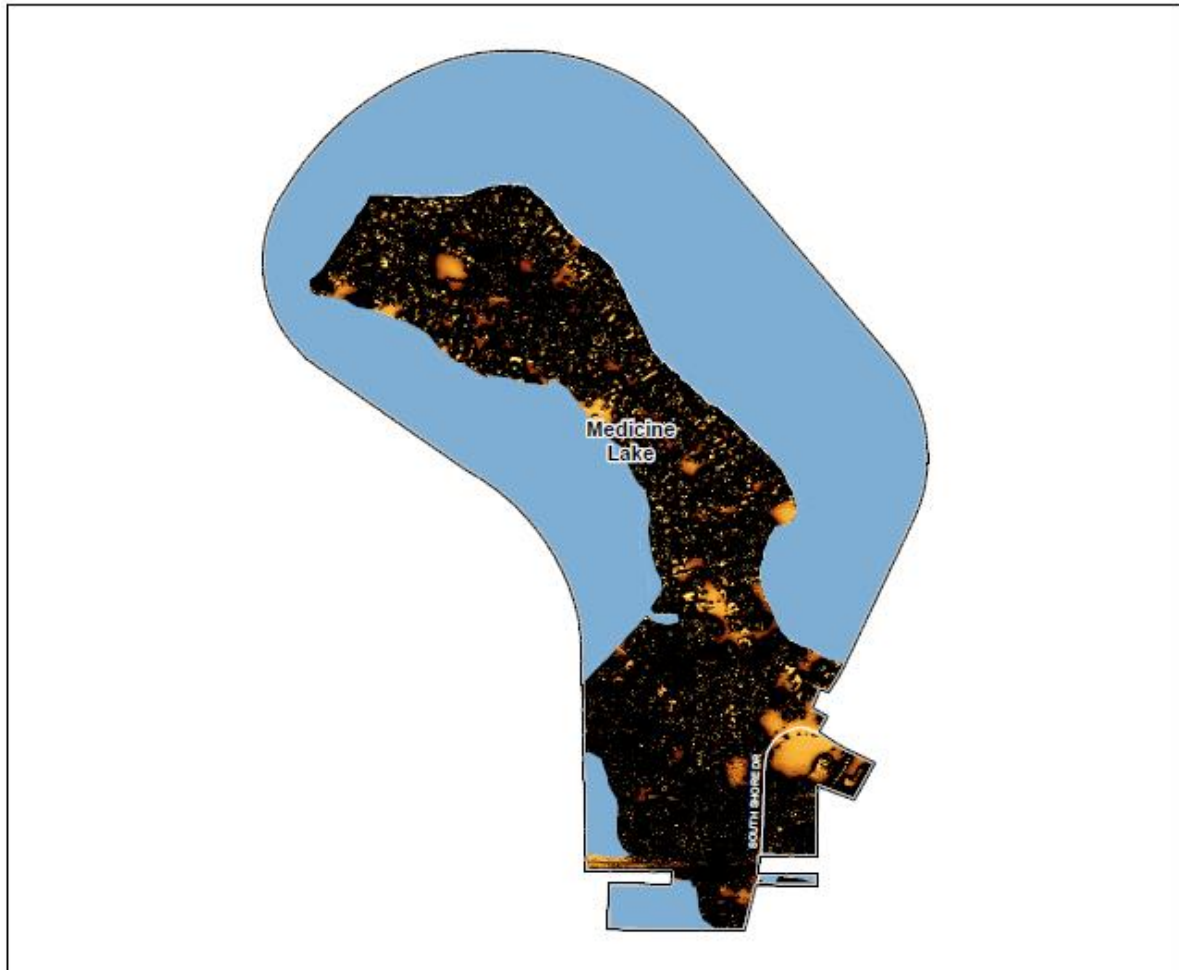
GROSS POTENTIAL (MWH/YR)	ROOFTOP POTENTIAL (MWH/YR)	GROSS GENERATION POTENTIAL (MWH/YR)*	ROOFTOP GENERATION POTENTIAL (MWH/YR)²
73,347	9,052	7,334	905

At this time the City is aware of several residences that have implemented solar energy by placing panels on a residential roof. There is no accounting of the amount of power that is being generated by these residential systems. The City of Medicine Lake is also currently evaluating the idea of participating in a solar garden for the City energy needs. The decision on whether or not to participate in the solar garden is expected in late 2018 or early 2019.

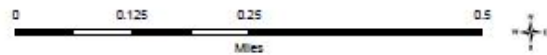
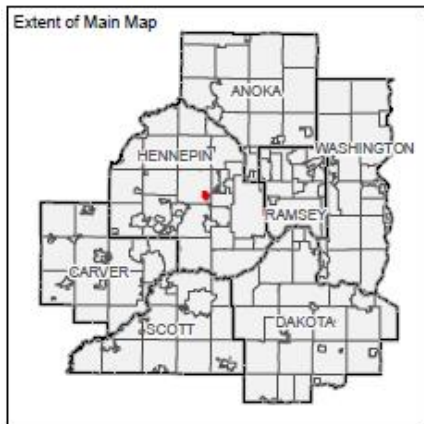
“Our Goals for solar access protection is to ensure our building and zoning codes enable the use and functionality of solar power, while not negatively impacting views to or from the Lake.”

Figure 8. Gross Solar Potential

**Gross Solar Potential
City of Medicine Lake, Hennepin County**







12/22/2016



**Gross Solar Potential
(Watt-hours per Year)**



-  Solar Potential under 900,000 watt-hours per year
-  County Boundaries
-  City and Township Boundaries
-  Wetlands and Open Water Features

Source: University of Minnesota U-Spatial Statewide Solar Raster.

Transportation

The City of Medicine Lake has 1.6017 miles of roadway. The largest section of roadway is Peninsula Road, a five ton roadway which was reconstructed when the City's sanitary sewer system was installed in 1967. There are three short connecting streets to Peninsula Road, those being Kaiser Ave., Colonial Circle and 15th Ave. The other remaining roadway is that portion of South Shore Drive next to the Hutton House. That roadway was formerly County Road 70, which was constructed as a seven ton road.

Medicine Lake has no curbs, gutters or formal storm sewer system. The City of Medicine Lake also has no sidewalks. Accordingly, motor vehicles, bicycles and pedestrians must all share the same space. The speed limit throughout most of Medicine Lake is 20 miles per hour, a limit which is enforced by the Hennepin County Sheriff's patrol. Three Rivers Park District has built the Luce Line Regional Trail which runs adjacent to the railroad tracks and includes large wooden bridges across the swamps on either side of our city.

Once our residents have left the City of Medicine Lake, they can easily access north and south Highway 169 or east and west on Highway 55. In addition, there are other major thoroughfares including I 394 which goes east and west and I 494 which goes north and south.

The City of Medicine Lake does not operate or manage public transportation routes or facilities and does not intend to establish a city owned or operated system. Residents have convenient access to two local mass transit systems and respective park and ride facilities.

The City is located in the Metropolitan Council's Transit Market Area III, which includes peak-only express, small vehicle circulators, special needs paratransit and ride sharing. Transit service is easily accessed by both the City of Plymouth Metrolink and Metro Transit. Nearby Park and Ride facilities with covered parking ramps and express bus service to and from downtown Minneapolis are available to the City of Medicine Lake residents. We have no future plans for specific route options or facilities in our community. The city is also served by Metro Mobility and Transit Link.

Medicine Lake is within a portion of Traffic Analysis Zone (TAZ) 1051. Growth in Medicine Lake we will not materially affect Metropolitan Council's projections for household, employment and population in this TAZ.

Table 10. TAZ Forecasts – Medicine Lake Portion Only TAZ#1051

TAZ 1051	2020	2030	2040
Population	390	400	400
Households	170	170	170
Employment	60	80	100

Our Goals for our transportation system are as follows:

- 1. maintain, develop and advocate for an environmentally sensitive transportation system that is safe and efficient;***
- 2. work to integrate alternative transportation modes (transit pedestrian, biking, etc.) into the existing and future transportation network; and,***
- 3. provide an efficient and well maintained transportation system that services various modes of travel throughout our community.***

To achieve the above goals, the City of Medicine Lake has developed the following transportation policies:

1. Continue to monitor and cooperate with neighboring cities, counties, the Metropolitan Council, the Minnesota Department of Transportation (MN/DOT) and other agencies involved in transportation planning in order to explore all feasible roadway and trail connections.
2. Require a regular inspection and assessment of the aging transportation infrastructure and adequately plan for and fund necessary improvements.
3. Enforce weight and load restrictions throughout the year and provide a visual check system for monitoring permits on construction and maintenance delivery vehicles.
4. Regularly inspect, update and monitor roadway signage in a manner compliant with Uniform Traffic Control standards.
5. Continue to maintain and periodically update standards to ensure the provision of appropriate off-street parking.
6. Require the provision of safe and adequate access to all properties.
7. Examine alternative design (Low Impact Design, rain gardens, etc.) for any proposed reconstruction or storm water management improvements affecting street design.
8. Promote use of public transit, including the Plymouth Metrolink and Metro Transit organization.

The City of Medicine Lake's roadway system was reconstructed in 1967. The road is in good condition at this time. The plan is to seal coat the roadway every five years or so. We continue to maintain the road as necessary on a yearly basis with a plan to replace the same in the next 10 to 15 years.

The road is currently classified as having a 5 ton per axle weight capacity. Roadways, which are properly maintained, can be expected to last 50 to 70 years. When the roadway needs to be rebuilt the City should consider burying pipes for City water as well as burying the utilities for power, telephone and cable TV at that same time.

Future Roadway System Improvements

The City of Medicine Lake is considered a fully developed community and does not anticipate changes to the existing roadway system. The few remaining vacant properties that could develop will not trigger road system improvements as guided by the land use plan.

Roadway maintenance will need to continue on a regular basis to continue to provide a safe roadway surface for traffic movement. Through the scope of this Comprehensive Plan, the City of Medicine Lake will continue regular roadway maintenance, including seal coating approximately every five years.

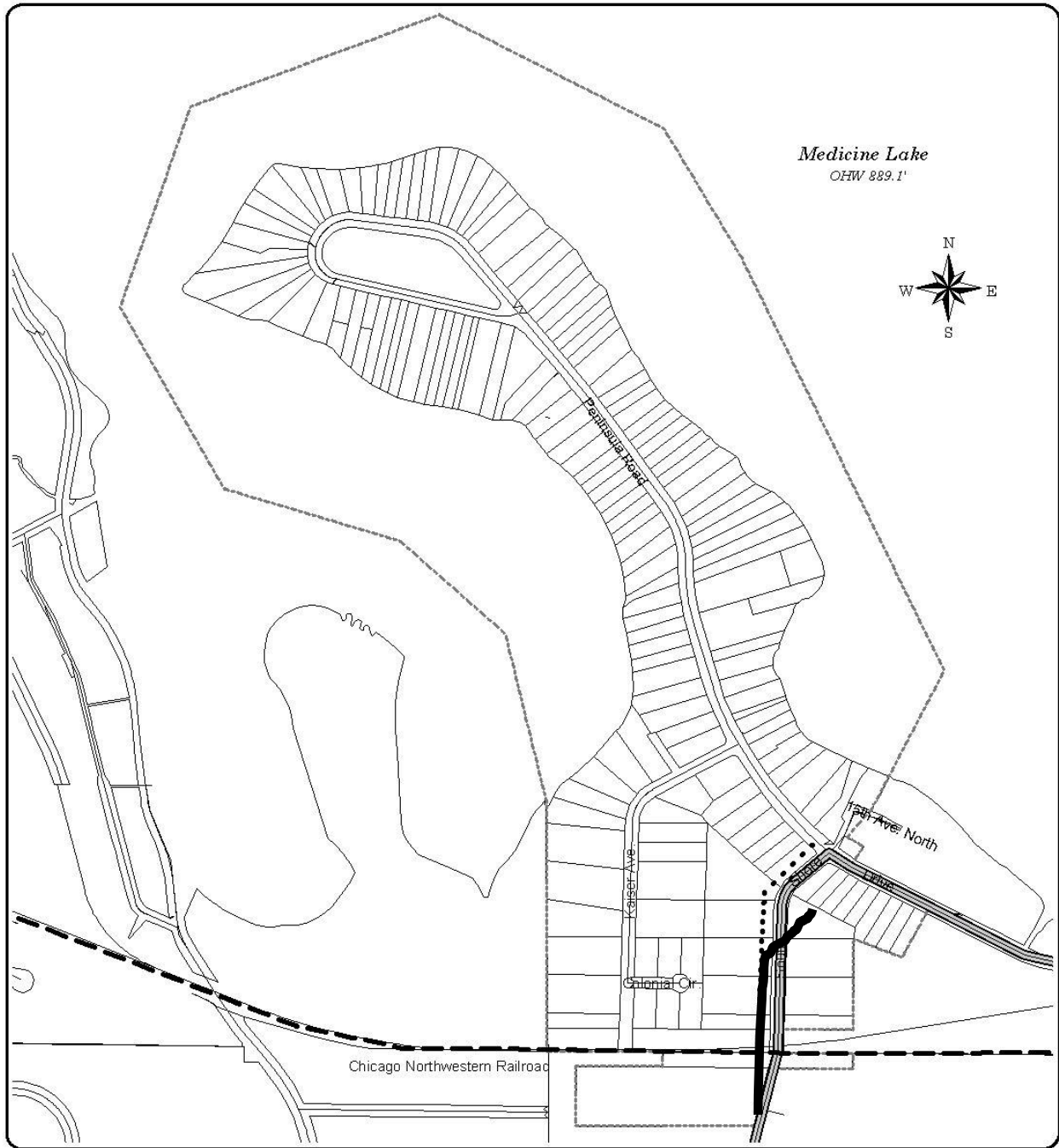
Sidewalks and Trails

The City of Medicine Lake currently does not have sidewalks. Pedestrian and bicycle traffic occur on the street edges or shoulders and through the Park. However, safety issues associated with pedestrians and bicyclists sharing the road with vehicle traffic are greatly reduced due to the following:

- Most of the streets within the City have a 20 mph limit which is adhered to by the residents and vigorously enforced by law officials.
- Parking is prohibited along the streets which allows for better vehicle visibility of pedestrians and bicyclists.
- Most of the streets within the City have minimal vehicle traffic, most of which is resident due to the peninsula “dead end” geography of the City.
- Any future improvements or redevelopment along South Shore Drive should limit the number of access points to minimize vehicle and pedestrian conflicts and crashes.

Nearby walking/bicycle paved trails do exist allowing residents easy access to the Three Rivers Park District’s Medicine Lake Regional Trail. In 2012 an offstreet trail connecting Peninsula Road to the Luce Line Regional Trail to the west was constructed along South Shore Drive. This trail allows residents to walk or bike to Clifton French Regional Park to the north east of the City.





Figure 9. Transportation System Plan



**City of
Medicine Lake**


Comprehensive Plan

Transportation Plan - Roadways

-  Collector Roadway
-  Local Roadway
-  Luce Line Regional Trail (multi-use)
-  Potential Local Trail Connection - general location (On/Off-Street)

0 300 600 Feet
Scale: 1" = 600'

Mapping assembled with available Hennepin County Property and Survey Data

 Hoisington Koegler Group


Airports and Seaplanes

Mn/DOT has identified Medicine Lake as an area of seaplane operation. Within the City of Medicine Lake there are no structures that are above the tree line of 50 to 60 feet. Zoning regulations limits structure height to 35 feet. The City does not have a water tower, radio or television tower. Electric transmission lines are also less than 40 feet in height. The City will not permit any structure that exceeds 200 feet in height. High voltage wire towers run along the Chicago Northwestern Railroad tracks and are marked with orange visibility balls because of their proximity to Medicine Lake. The City has little if any regulatory influence over these regional electricity conduits.

Parks Trails and Open Space

Medicine Lake has a small park known as Jevne Park. The park includes a tennis court, volleyball court, basketball hoop, playground equipment for small children, and a large expanse of grass. Citizen involvement and volunteerism characterize how the city operates. Parks are no different. For example, interested residents maintain and improve the volleyball court. The City is not able to replace the park equipment at this time. In recent years the tennis court was resurfaced and pickleball lines were drawn. The focus of recreation in the city is the lake; residents either have lakefront access, or utilize access available at one of the three lakefront parks.

Figure 10. Jevne Park in Medicine Lake at the end of the Peninsula

Source: Hennepin County Oblique Aerials Courtesy of Microsoft Virtual Earth—Data of Photo April 2006



The Luce Line Regional Trail runs through the city near its southern border. The trail connects to the Medicine Lake Regional Trail providing access to the three lakefront parks. Figure 11 shows the Three Rivers Park District 2040 Facilities Proposed.

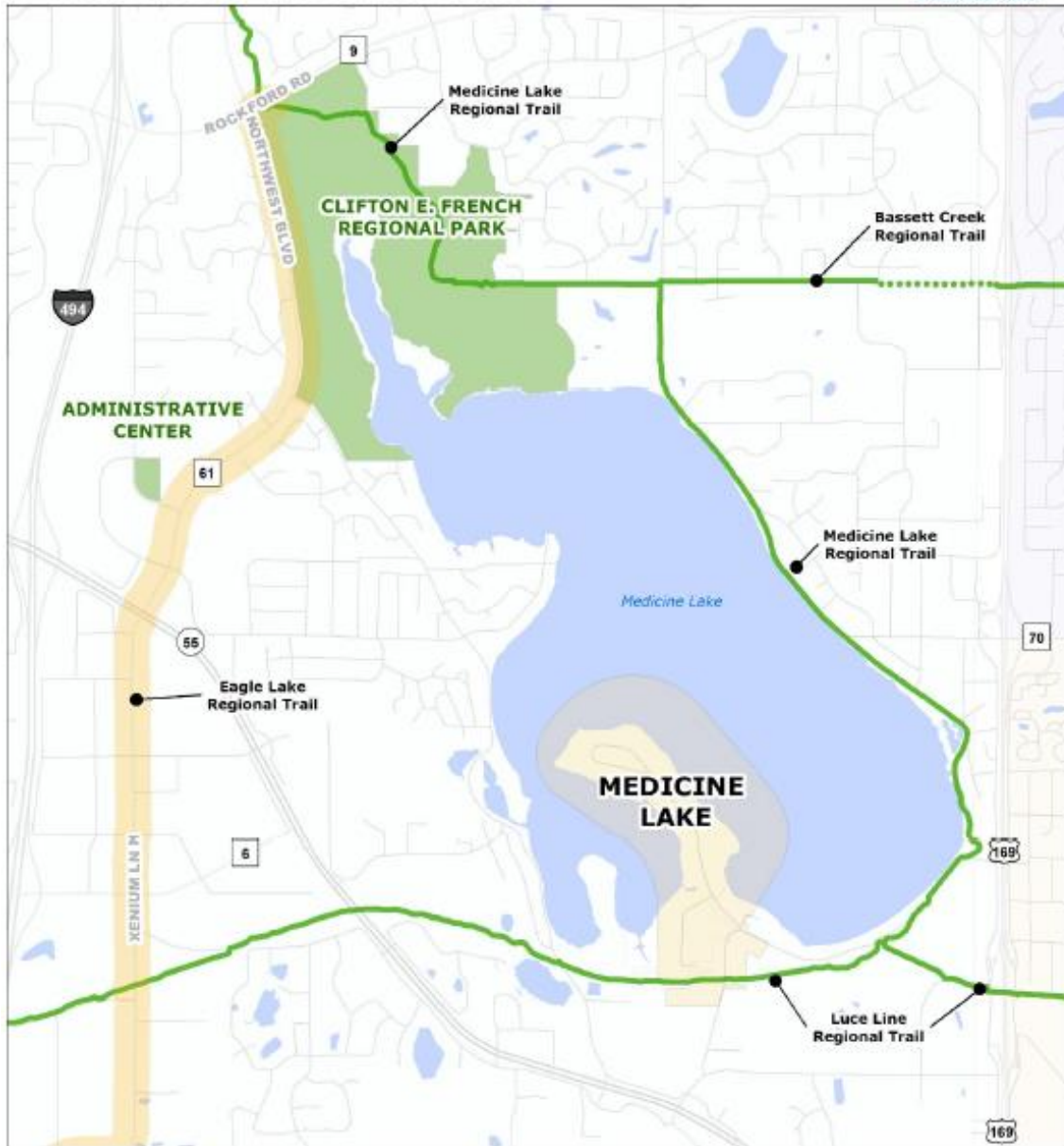
These local and regional parks include:

1. Clifford E. French Regional Park, located at the north end of Medicine Lake, has access via the Medicine Lake Regional Trail.
2. Plymouth's East Beach Park, located on the southeast portion of Medicine Lake has access via the Medicine Lake Regional Trail and is less than a mile from our City.
3. Plymouth's West Beach Park, located on the southwest portion of Medicine Lake has access via the Medicine Lake Regional Trail.

Figure 11. Three Rivers Park District Facilities

City of Medicine Lake

Three Rivers Park District Facilities



FOR PLANNING PURPOSES ONLY

Map prepared by Three Rivers Park District
Planning Department - AR December 18, 2018



- Three Rivers Park District Property
- Existing Regional Trails
- - - Planned Regional Trails
- Regional Trail Search Corridor



The city has no direct residential access to the Luce Line Regional Trail.

Establishing a more consistent park oversight would benefit the City. Recently a Parks Superintendent position was established as a part time, hourly compensated position.

The primary focus of the Public Works Superintendent is to protect the value and integrity of the City's public realm. For the purposes of this job description, specific elements include City owned property and right of way, streets, public utilities, parks and related natural resources. The Superintendent position reports to and is responsible to the City of Medicine Lake City Council and serves at the discretion of the same.

- The position is responsible for administering and operating elements within the public realm; streets, public utilities, trails and parks.
- The position is responsible for coordinating with activities in the private realm; specifically, private utilities and with the building inspector related to private sector development.
- The position is responsible for managing maintenance activities within the public realm and coordinating with contractors who carry out those activities.
- The position is confined to these administrative and operating elements. A separate, independent scope of services will be defined for any billable events beyond the scope of this position.

The Superintendent has the following general responsibilities:

1. Communicate and coordinate with the City Council by submitting a monthly written report to the City Council and attending the City Council meetings.
2. Provide day to day contact as needed to the designated City Council liaison.
3. Attend Planning Commission meetings when required and requested by the City.
4. Coordinate with other City positions including the City Planner/Zoning Administrator and the Building Inspector regarding issues of private sector property and development for topics related to the public realm.
5. The City Planner/Zoning Administrator may request assistance from the Superintendent to evaluate building and site development applications. The Building Inspector has lead responsibilities for private sector construction inspection and compliance, however, the Superintendent will participate when requested or when issues of public right of way, roads or utilities are addressed.
6. Communicate with the Hennepin County Sheriff's Department, as needed, when necessary to deploy law enforcement to protect the public realm.
7. Coordinate with the City Engineer and City Council liaison for planning, design and technical issues related to streets, culverts and sanitary sewer.
8. If requested, assist the watershed district related to stormwater permitting and management.
9. Cooperate with City Council members to help the City abreast of regulation changes, safety issues and standards for public works.
10. Provide current and accurate reports regarding municipal operations.

11. While the Superintendent shall attempt to provide the Services during normal business hours on Monday through Friday, the Superintendent, when necessary, shall provide the Services at other times and on weekends.
12. Perform all duties and provide all services to the highest ethical and professional standards of conduct, working to maintain the highest reputation for the City of Medicine Lake at all times.

There is an expressed desire in our City to protect remaining undeveloped lands for open space. The purpose for this is first and foremost to minimize impacts of run-off on the water quality of Medicine Lake and secondly to preserve the character of the community. We see this expressed desire as an opportunity to work together as a community to develop a strategy for how we can protect this open space. In doing so we must fully understand the impacts. How is the open space maintained? Who owns it? What is the impact on our limited tax base? The ability to purchase land as open space is always a possibility if it is a desire to do so. There are regional resources that may have a shared passion for open space and water quality preservation. We must explore as an implementation strategy how we achieve our goals.

One property, 6 Colonial Circle, however, is being considered for sale for development. It is a buildable property that does not impact the open space feeling of the community if it were to be developed. A final decision on whether to offer this space for development will be made in early 2019.

“Our Goal for our park system is to maintain what we have in Jevne park.”

“Our Goal for trails is to ultimately provide a trail connection to the regional Luce Line Regional Trail.”

“Our Goal for open space in the community is to preserve the remaining undeveloped lands along South Shore Drive to the extent possible while understanding the associated benefits and impacts to our community.”

Fire Department

Medicine Lake Fire Department was established in 1950. The Fire Department currently has a roster of 22 trained volunteers and has received an ISO rating of 7, which is the highest attainable ISO rating for fire departments or Cities without City water.

One of the challenges of our Fire Department is that we have no City water. Accordingly, the water necessary to extinguish fires must be hauled in by the City's tanker trucks. Fortunately, the City has access to nearby fire hydrants in the City of Plymouth for refilling its tanker trucks. We also have mutual aid from the surrounding Fire Departments to assist us in the event of a major fire or incident.

Fire apparatus currently consists of:

- 1996 Pierce Lance custom fire engine with 2000GPM pump, 1000 Gallon tank, seating for 5 and well equipped.
- 1978 Ford pumper/tanker with a 1,250 gmp pump, 750 gallon water tank, seating for seven personnel in a full response cab, and well equipped for both fire and medical.
- 1982 Mack pumper/tanker with a 650 gmp pump, a 3,800 gallon water tank, a 3,500 and 1,500 gallon portable dump tank, with seating for two personnel.
- 20ft pontoon rescue boat with a 40hp motor, equipment and trailer.
- 10ft Zodiac rescue boat with an 8hp motor and trailer.

In 1986 the Medicine Lake City Council approved a formation of the "Medicine Lake Firefighter's Relief Association". This Relief Association allows Firefighters to establish a retirement or pension program with some funding from the State Aid monies available through homeowner's insurance premiums. The Firefighters now have a pension fund with vesting at 5 years of service and full funding at 20 years available to them after 50 years of age.

"Our Goal for our fire service is to maintain an ISO rating of 7, the highest rating possible for our City"

Private Utilities, Services and Public Facilities

Electricity

Electricity is provided by Xcel Energy (formally known as NSP).

Natural Gas

Underground natural gas is provided to the City by CenterPoint Energy Company (formally known as Minnegasco)

Cable Television and Internet Service

Cable and internet service is provided by Comcast, Qwest, our landline telephone company, and CenturyLink.

“Our Goal for overhead utility lines is to ultimately have them placed underground, to protect from power outages resulting from storm damage and enhance the visual appeal of our community”

Recycling and Garbage Services

Garbage services are currently provided by Randy’s Sanitation. Recycling services are currently provided by Waste Management through the City of Plymouth.

Note: The City pays for standard garbage pickup for all of its residents although residents can (for an additional fee) purchase unlimited garbage service or additional services directly from Randy’s Sanitation.

Randy’s Sanitation has historically been the successful bidder on our garbage contract. The reason the City has a garbage contract is to limit the damage to the roadways caused by the heavy garbage trucks.

“Our Goal is to provide adequate cost effective service to our residents, to reduce our community’s contribution to the land fills and to increase the proportion of waste that we recycle”

Public Schools

Medicine Lake is part of the Wayzata Public School District #284. As we are not growing with new development, we anticipate no significant impact on our public school system.

Libraries

The Hennepin County Library system has a number of branch libraries in the communities it serves. The Golden Valley, Plymouth, and Ridgedale Branch Libraries are the most convenient libraries for the residents of the City of Medicine Lake.

Water System

The City does not have a municipal water system and all private properties are served by private well systems. There are no plans for a municipally owned water system at this time. Although the City does not have a municipal water system, it does recognize that drinking water quality is critical to the health of residents.

Although the City could possibly connect into the City of Plymouth's municipal water systems, surveys (both past and present) of our City's residents indicate that they have little interest in doing that.

When our roadways are rebuilt (which hopefully won't be for at least 15 or more years) the City should seriously consider burying pipes for City water as well as burying the City's other utilities.

“Our Goal for our water system is to sustain our private wells as the primary source of potable water. We must therefore do what we can to protect our aquifer and support regional efforts to protect from contamination of the aquifer and practice water conservation efforts”

Sanitary Sewer System

The City of Medicine Lake is within the Metropolitan Urban Service Area (MUSA) and sanitary sewer service is provided to the entire community by Metropolitan Council Environmental Services (MCES). Sanitary sewer service connection is required for all uses in the City. On-site sewage disposal systems are not allowed. MCES interceptor 1-PM-466 serves the City of Medicine Lake. This is a gravity flow system with a small lift station which handles nearly all of the sewage which is generated in the City of Medicine Lake. There are very few properties whose sewer connections are downstream of the lift station. The flows of the lift station are monitored by the Metropolitan Council through metershed M119.

Our sanitary sewer system consists of 9,914 linear feet of 8" diameter gravity main, 936 linear feet of 6" diameter force main, 46 manhole structures and a lift station. All of which were installed in 1967. Our lift station is a flooded suction type lift station with 2 self-priming centrifugal pumps. It lifts sewage from an elevation of 873 feet and discharges that sewage into the force main which is at an elevation of 884 feet. The one lift station owned by Medicine Lake is now approximately 50 years old. It is hoped that the station can continue to operate for the next 10-15 years. We continue to monitor the operation and make spot repairs where necessary. While it is hoped to not be part of this 10 year plan, the estimated cost of replacing the lift station is \$750,000.

Design Flows and System Capacity

The existing lift station and the city sewer main was designed originally to serve a total of 300 homes in the city. The local system capacity and design flows for existing trunk sewers and lift station in Medicine Lake is estimated as follows:

- System designed to handle up to 0.075 million gallons per day; current average flows – 0.03 million gallons per day (per MCES metershed 119)
- The City sewer main’s capacity is based on an 8” gravity fed pipe size
- The City lift station is connected to the Metropolitan Council interceptor by a 6” force main
- Maximum Peak hourly flow – 0.14 million gallons per day (.03 mgd * 4.5 peak hourly flow factor per MCES)

The Metropolitan Council estimates that the average household should generate about 274 gallons of waste water per day. In light of the fact the City of Medicine Lake has 171 sewer connections we would have anticipated flow levels of approximately 46,000 gallons per day. Our actual flows are slightly under that with flows in the wintertime (when many of our residents go south for the winter) being more in the range of 35,000 gallons per day. We have however experienced spikes during rain events indicating that ground water is somehow seeping into our system. Efforts to reduce inflows recently were completed including a sewer lining project completed in 2018 (see below for further info).

Inflow and Infiltration Analysis (I/I): sources, extent and significance of I/I in the public and private systems

The following information was provided by the Metropolitan Council to at least show trends for sewer flows and be able to generally estimate I/I. This data is all prior to recent improvements to the sewer line described below:

Table 11. Estimated I/I (Source: MCES)

Year	Average Daily Flows (mgd)	% I/I	Peak Month Average Daily Flows (mgd)	Peak Month % I/I
2010	0.031	9%	0.04	26%
2011	0.029	1%	0.04	32%
2012	0.027	19%	0.05	53%
2013	0.032	23%	0.05	53%
2014	0.034	27%	0.06	57%
2015	0.025	14%	0.03	34%
2016	0.032	23%	0.04	40%
2017	0.032	10%	0.05	37%
Average	0.03025	16%	0.045	42%

Table 12. Monthly Metered Flows (Million Gallons Per Month) (Source: MCES)

	2010	2011	2012	2013	2014	2015	2016	2017
Jan	1	1	0.7	0.8	0.9	0.7	0.8	0.9
Feb	0.8	0.8	0.6	0.7	0.7	0.6	0.7	0.8
Mar	1.2	1.2	0.8	0.8	0.9	0.7	0.9	0.9
Apr	1	1.2	0.9	1.4	1.5	0.7	1	1.1
May	1	1.3	1.4	1.3	1.8	0.8	1	1.4
Jun	0.9	0.9	0.9	1.6	1.8	0.7	0.9	0.9
Jul	0.9	0.9	0.9	1.2	1.2	1	0.8	0.9
Aug	0.9	0.7	0.7	0.8	0.8	0.7	1.3	1
Sep	1	0.6	0.6	0.7	0.7	0.7	1.3	0.8
Oct	0.9	0.6	0.7	0.8	0.7	0.6	1.1	1.1
Nov	0.9	0.6	0.7	0.8	0.8	1	1	0.9
Dec	0.9	0.7	0.8	0.9	0.7	0.9	1	0.9

Per City Council members and the Public Works Superintendent, there are two suspected primary sources of I/I for Medicine Lake. Their assumed extent and significance are described as below with additional narrative to follow:

1. **City main:** the City main was recently lined to reduce I/I. The extent of I/I from the city’s sewer main should be minimal due to this recent improvement. The city will monitor flows and evaluates the impact the lining had on reducing I/I on an annual basis and determine if future improvements are needed.
2. **Private sewer laterals:** the City understands that given the age and soil conditions, a significant amount of I/I likely comes from private sewer laterals. There is currently not sufficient data available to quantify this issue. The city will work with private property owners as improvements are proposed or through educational processes to try and gain a better understanding of condition of private laterals. Lack of funding and staff resources prevents the City from being more proactive in these areas.

I/I create problems for the Metropolitan Council’s sewage treatment facility in Pigs Eye, Minnesota and in its collection system. The problem is that clean water caused by I/I require the treatment facility to treat water which wouldn’t otherwise need to be treated. In addition to the expense of doing that the extra water has taxed the Metropolitan Council’s Sewer Facility to the extent that they are now faced with capacity issues which may necessitate their expanding that treatment facility. Accordingly, the Metropolitan Council has instituted a program designed to minimize and perhaps even eliminate I/I system wide. Their program consists of identifying those communities with excessive I/I (through their flow monitoring process) and then assessing fines and surcharges against those communities. Those fines can be offset by I/I repairs. In the case of the City of Medicine Lake, in 2014 the Metropolitan Council assessed the City with an initial fine / surcharge in the amount of \$66,400 to be spread over a period of 4 years - \$16,600 per year. This surcharge was met by work done by the City on Kaiser Avenue where the City’s system connects to the regional interceptor. In addition, a sewer lining project was undertaken in

2017 and 2018 that created new pipe in the entire main line of the City sewer. (See below.) This project will almost completely eliminate further I/I from the City's main line; however, inflow will likely continue from manhole covers and cracks or root intrusions in private service lines that connect individual homes to the City main. No further fines or peak flows are expected.

Medicine Lake hired SEH as an engineering consultant to help the City explore different solutions to rehabilitate the mainline sewer. With a population of fewer than 400 people, Medicine Lake indicated that it had limited funds to dedicate to the project. Furthermore, the traditional dig and replace method was not preferred due to the unique characteristics of the system – approximately 60% of the work must be accessed from manholes located in back and side yard easements and near to Medicine Lake. After consulting with SEH and reviewing many different replacement options, the City decided to use a UV-cured in place pipe method (CIPP). The CIPP method has a reduced construction footprint, quicker time to completion, and a lower overall cost per foot compared to traditional methods. The entire project could be done using only the existing manholes to access the sewer. In addition, each homeowners lateral could be reconnected using remote control drilling robots without having to dig at each connection.

SEH conducted a bidding process that utilized a structured scorecard system, verification of references, and documented proof of eligibility. The contract was awarded to J. C. Dillon of Peoria, IL in the amount of \$536,450.00. The work began in September 2017 and was completed in early summer 2018. It is believed that the construction cost of the CIPP effort saved the City over \$500,000 compared to traditional methods. In addition, the completed CIPP system will meet the Minnesota's code requirements for a sanitary sewer.

Prior to completion of this project, the Metropolitan Council estimated the City's I/I and established an I/I goal. The goal is the maximum allowable peak hourly discharge from each metershed to the regional wastewater system. Using community-specific wastewater flow and population growth data, the average adjusted daily flow is calculated for each metershed. The I/I Goal is equal to the adjusted average daily flow multiplied by the peak hourly flow factor, as shown below in million gallons per day (mgd) for the monitoring period of Jan 1 – Dec 31, 2018.

- Adjusted Average Daily Flow in million gallons per day (MGD) – 0.03
- Peak Hourly Flow Factor – 4.5
- I/I Goal – 0.14 mgd

Wastewater flows will be monitored regularly by the City and Metropolitan Council Environmental Services (MCES) moving forward and measured against this goal to determine if our community is having a negative impact on the regional waste water system.

Per Hennepin County parcel data records, there are 123 houses (or roughly 72% of all homes) in Medicine Lake that are built prior to 1970 and 47 built after 1970 (or 28%). The City does not know how many of the pre 1970 homes have had their private sewer service connecting

to the city main investigated and replaced or repaired. This information is not collected and monitored at this time.

In the future, the city will consider collecting this information as part of the building permit process.

I/I Requirements and Standards

The City has in place ordinance 42 which prohibits certain discharges into the City sanitary sewer system including storm water, surface water, ground water, roof runoff, sub-surface drainage, cooling water or unpolluted waters to any sanitary sewer. As new homes are constructed and as remodel projects happen and new permits are pulled, the City checks to ensure no unlawful uses exist.

The City currently does not have an ordinance or resolution requiring the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system. The City will pursue adoption of an ordinance or resolution within nine months of the adoption of this plan.

Since the City of Medicine Lake is almost completely developed it is anticipated that our sewage flow rates will remain relatively constant into the foreseeable future and hopefully will be reduced by our I/I repairs. Fortunately, our founders built a sanitary sewer system having a flow capacity for approximately 300 households. Accordingly, it doesn't appear as though we will be faced with any "overcapacity" issues.

***"Our Goal for our sewer system is to meet
Metropolitan Council's requirements for the I/I
program"***

Goals for I/I Mitigation:

- to minimize or eliminate I/I entering private and public sewer infrastructure
- to reduce ratepayer costs for transporting and treating wastewater
- to minimize liability from water pollution and public health risks

Policies and Implementation Strategies for I/I Mitigation by PRIORITY:

1. Educate property owners about I/I by posting information on city web site and distributing information in the Laker (City newsletter) or via email blasts.
 - Implementation Schedule – within year 1
2. Encourage private property owners to proactively inspect and repair or replace older segments of private sanitary sewer connections that are beyond their service life.
 - Implementation Schedule – within year 1 and ongoing
3. Explore grants or other financial assistance programs to provide financial assistance to private property owners wishing to replace or repair private sewer connections to the city main.

- Implementation Schedule – within years 2-3 after understanding better what the need is.
4. Make sure sump pumps and building drains are not connected to the sanitary sewer system. This can be done through educational information and when permits are required for home improvements or expansions.
- Implementation Schedule – ongoing

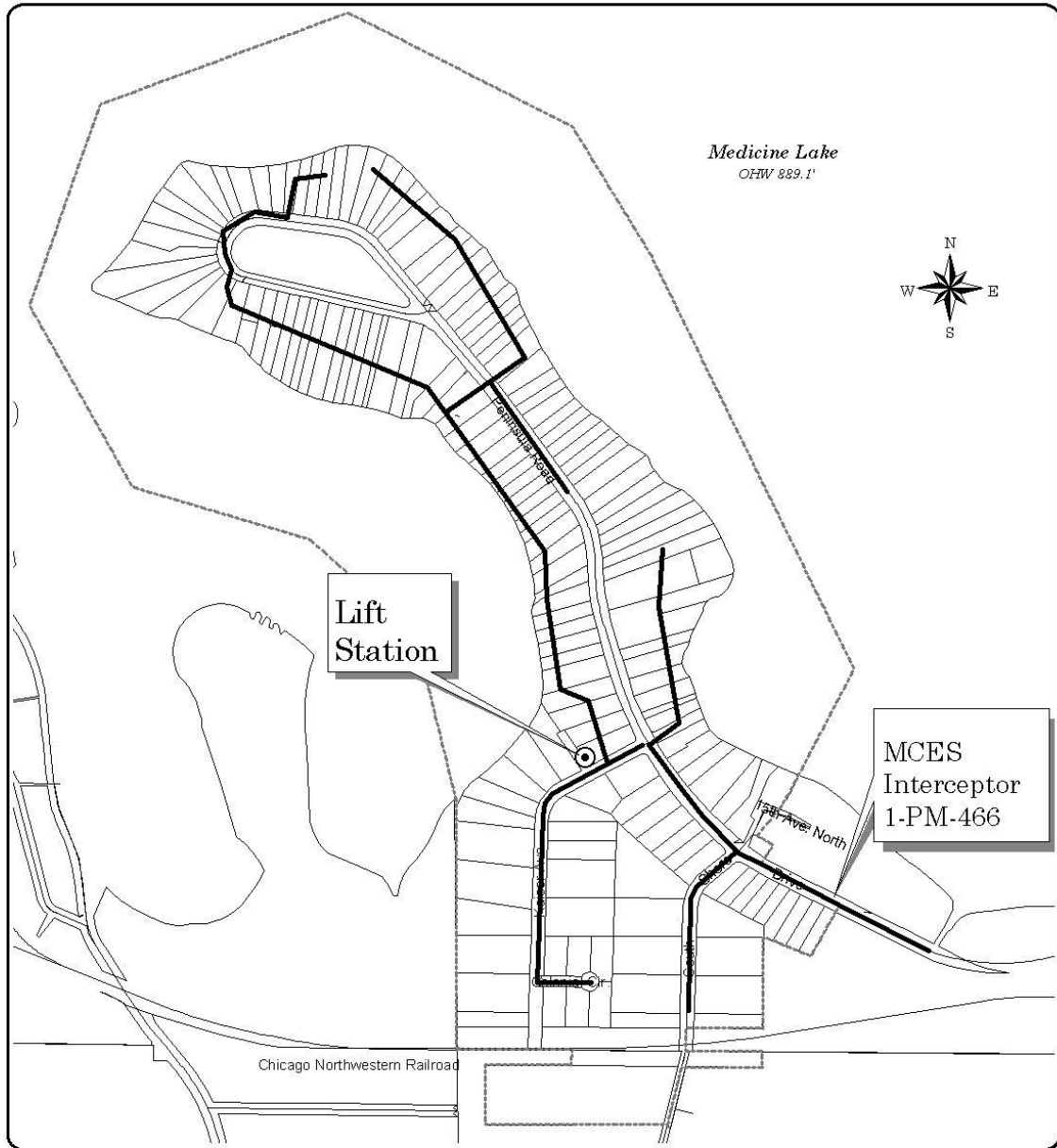
Currently the city does not have any financial mechanism budgeted for I/I mitigation beyond annual ongoing monitoring and maintenance needs of the sewer system. As the City becomes more focused on measuring I/I, monitoring flows, and determining sources, the City will budget resources or seek grant resources to implement appropriate mitigation strategies.

Table 13. Projected Sewer Flows (Source: Metropolitan Council Environmental Services MCES)

Year	2020	2030	2040
Sewered Population	390	400	400
Sewered Households	170	170	170
Sewered Employment	60	80	100
Avg Annual Wastewater Flow (MGD)	0.05	0.05	0.05
Allowable Peak Hourly Flow (MGD)	0.14	0.14	0.14

**MGD means million gallons per day*

Figure 12. Sanitary Sewer System Map



**City of
Medicine Lake**

Comprehensive Plan

Sanitary Sewer System Map

0 300 600 Feet
Scale: 1" = 600'

Mapping assembled with available
Hennepin County Property and Survey Data

Sanitary sewer main

MCES Meter Station M119

Herington Koegler Group

Surface Water Management Plan

By a way of background information, in 1972 our Federal Government enacted the Clean Water Act with the intention of curtailing pollution in our lakes and streams on a nationwide basis. The government first focused its attention on big bodies of water as well as big polluters. However, as time has progressed, the government's attention has focused on all bodies of water as well as all forms of pollution.

The Federal Government of course doesn't have the resources to monitor all bodies of water or all forms of pollution. So instead, it delegates and mandates that responsibility to the individual States.

We are now down to the point of monitoring municipal storm sewer discharges. This program has been created at the Federal Government's insistence by our Minnesota Pollution Control Agency.

The program seeks first to identify, and then eliminate, undesirable discharges that tend to end up in municipal storm sewer systems including:

1. Sewage from the overflow of municipal sanitary sewer systems;
2. Sewage from improperly functioning septic systems or drain fields;
3. Laundry wash water;
4. Car wash water;
5. Liquid industrial waste;
6. Radiator flushing;
7. Oil dumping.

The Minnesota Pollution Control Agency has issued a permit to all MS4 communities in our metropolitan area allowing them to discharge their storm sewer systems into Minnesota waterways. However, attached to that permit are various requirements. One of the requirements is that the cities hold an annual hearing to discuss curtailing and eliminating pollutants which may end up going into the City's municipal storm sewer system. The City of Medicine Lake doesn't have a municipal storm sewer system but does still have runoff from its citizens and its streets. The runoff in our case can be expected to ultimately end up in Medicine Lake, which of course is one of the City of Medicine Lake's most important assets.

The City of Medicine Lake's storm water prevention program includes the following:

- Periodic street sweeping
- Inspections to monitor runoff
- Encouraging residents to plant rain gardens
- Encouraging residents to participate in shoreline vegetation restoration
- Water detention areas consisting of ditches and wetlands

The City of Medicine Lake recognizes the importance of Surface water runoff and of having a program to minimize and to monitor it for the following purposes:

1. To control flooding and minimize public capital expenditures;
2. To achieve water quality standards in lakes, streams, rivers and wetlands consistent with the intended use and classification;
3. To protect and enhance water recreational facilities, fish and wildlife habitat;
4. To increase public participation and knowledge in management of the water resources of the community;
5. To maintain the public ditch and drainage way system to convey water to maintain the defined flood levels, which protect businesses and residence;
6. To promote ground water recharge and prevent contamination of the aquifers;
7. To maintain (and restore where possible) the amount of wetland acreage and to try to increase the wetland values within the watershed.

The City of Medicine Lake recognizes that it is almost completely surrounded by its best natural resource, Medicine Lake. The City of Medicine Lake has a substantial interest in Medicine Lake's water quality as it affects not only recreational use of the lake but also property values of the City's residents. In addition, since its residents all rely on individual wells there is additional interest in protecting the aquifers which provide water to those individual wells.

The Metropolitan Surface Water Management Programs deal with broad land runoff ("non-point" source) and specific waste water ("point" source) pollution. Point source pollution includes the discharge of treated wastewater effluent through a pipe. Non-point sources of pollution result from many of the everyday activities and actions of people. These actions include applying fertilizer to lawns in an amount that exceeds what the grass can use, erosion into the lake, blowing grass clippings into the street or driving the car that exhausts improperly burned hydrocarbons or leaks oil. All of these add up to major non-point source pollution loading of our receiving wastewaters.

Non-point source pollution also includes the alteration of the native environment by urban development. Native vegetative and drainage systems provide a low – impact course for water to follow. Alteration of those systems can increase both the volume and rate of water runoff, and can introduce polluting materials that can be transported by runoff into Medicine Lake.

All of the residents in the City of Medicine Lake as well as the two commercial businesses, are connected to the municipal sanitary sewer system. Accordingly, the City of Medicine Lake doesn't have any point source polluters.

The City of Medicine Lake does however have non-point source pollution which it will address in this plan.

***Our goal is to reduce or eliminate the City of
Medicine Lake's non-point source pollution.***

The City of Medicine Lake has already taken significant steps towards meeting that goal by doing the following:

1. The City of Medicine Lake has outlawed the use of phosphates in lawn fertilizers;
2. The City of Medicine Lake requires silt fences for all construction projects which may result in erosion or runoff during the construction process;
3. The City of Medicine Lake has a street sweeping program to sweep up the accumulation of sand and salt from the winter snow plowing activities.
4. The City of Medicine Lake encourages the preservation of wetlands which are within its borders both for aesthetic purposes and filtering and purifying runoff water.

The City of Medicine Lake doesn't currently have, nor does it have any plans for, curbs, gutters or a municipal storm water system. Municipal storm water systems, by their very nature direct storm water runoff to specific areas resulting in increased water volumes and velocities. In that regard, excessive water runoff from the City of Medicine Lake follows a much more natural path / course.

The City of Medicine Lake has changed the direction of its water flow off Peninsula Road (near Jevne Park) so that the water first flows to the east and then subsequently flows back under Peninsula Road to the ditch / holding pond area before going into the creek / channel area leading into Medicine Lake. The City of Medicine Lake together with the City of Plymouth, the Bassett Creek Water Management Commission, Three Rivers Park District, the Aquatic Vegetation Management (AVM) and AMLAC (the Association of Medicine Lake area citizens) work together maintaining and improving the water quality of Medicine Lake including monitoring the phosphorous levels of Medicine Lake and controlling invasive weed species such as Eurasian Water Milfoil and Curley Leaf Pond weed. The City of Medicine Lake also participates in an annual "goose round up" to reduce the resident goose population on Medicine Lake.

The City of Medicine Lake is also instituting a program for educating its residents about activities that they can engage in to improve the water quality of Medicine Lake.

A complete Local Water Management Plan is included as an Appendix to the Comprehensive Plan.

Implementation

The City of Medicine Lake's Comprehensive Plan provides long-term guidance for making decisions about change in our City. The Plan's vision, guiding principles, goals and maps provide direction for how we respond or proactively address issues. Implementation of the Plan includes official municipal controls and programs such as zoning and capital improvements.

Our plan will be implemented in a number of ways. Actual implementation of the Plan is accomplished on a daily basis by elected and appointed officials, our volunteer residents and our consultants by the decisions that are made or actions taken.

Implementation will involve the application and enforcement of existing ordinances, modifications to existing ordinances, adoption of new ordinances, use of a capital improvement program, and maintaining and enhancing programs like the residential licensing program. Implementation will also include strategic efforts to achieve our desired goals. These efforts will include exploring solutions, understanding impacts and then following up with actions. A good example of a strategic effort is to implement the idea of preserving remaining vacant lands in the city as open space.

The City Council is the final authority in the implementation process. The Council has official approval of all municipal plans, ordinances and programs; the authority to earmark funds; and the ability to execute funding agreements with state and federal agencies.

The City Council needs to work closely with the planning commission in implementing the goals and policies established within the Comprehensive Plan. The Council members and the Mayor have frequent contacts with residents, business and property owners within the community and can contribute to continued public support of adopted policies, ordinances and programs.

The Planning Commission plays a key role in all community development related issues. It is important that the Commission's role be closely coordinated with the City Council to ensure continuity between what policies are striving to achieve and what is actually allowed by the City's ordinances and programs.

Zoning Ordinance

The Planning Commission is the entity with primary responsibility for the preparation of the Comprehensive Plan and for the evaluation of proposals for consistency. Following adoption of the Plan, it is the Planning Commission's responsibility to evaluate the zoning ordinance and ensure the ordinance is consistent with the plan. At this time a complete review of the zoning ordinances and building ordinances is underway. This review will be completed in late 2018 for implementation in early 2019.

R-1 Residential – Single-Family District is intended to provide for exclusive low density single family detached residential dwelling units and directly related, complementary uses.

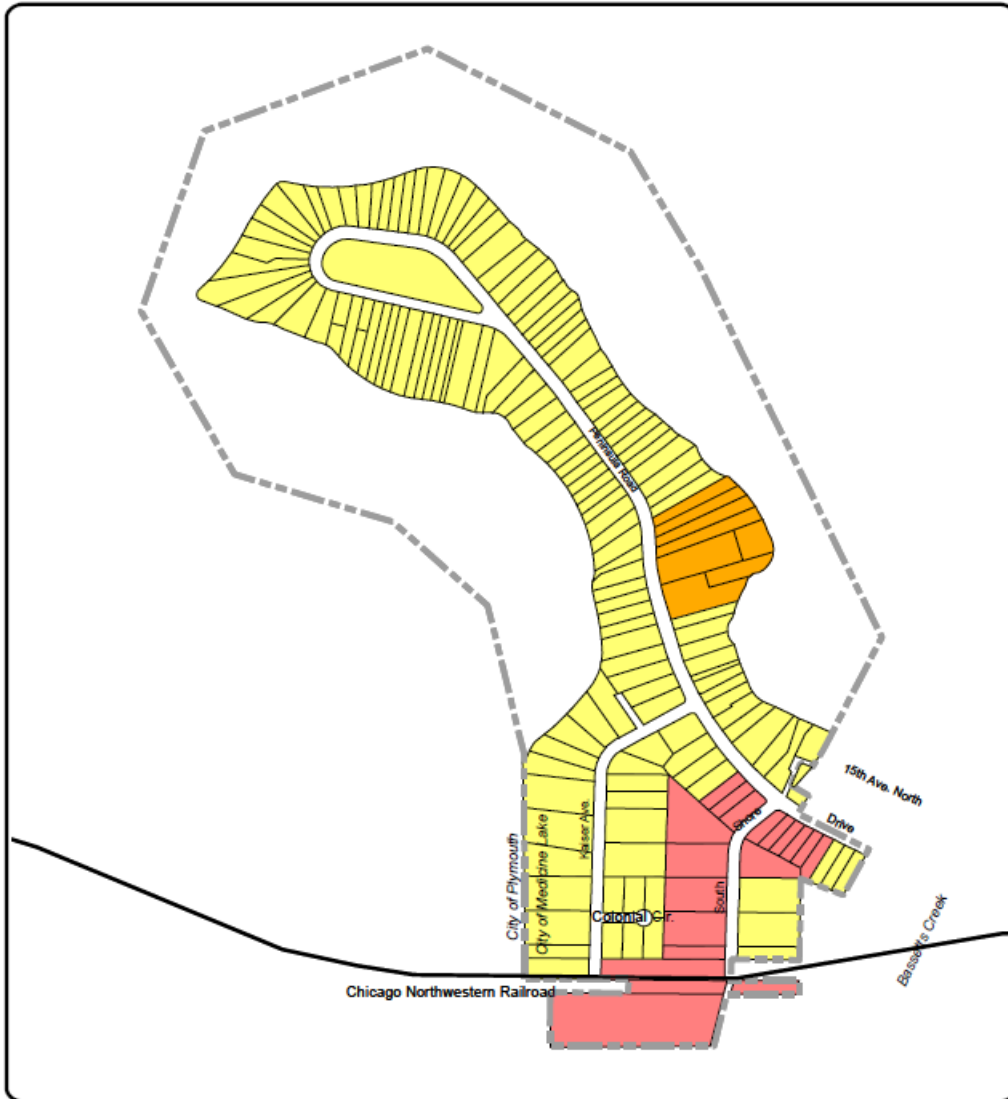
R-2 Residential – Single and Two Family District is intended to provide for low density one (1) and two (2) unit dwellings and directly related, complementary uses. NOTE: there are no areas zoned R-2 currently.

B-1 Neighborhood Business District is intended to provide for a small service area which may supply office and local retail sales uses. Permitted uses include restaurants, on- or off-sale liquor establishments, and office buildings.

Residential PUD District: this zoning district is specific to the Park Apartments and allowing for the mix of single family detached and attached housing.

We envision no major changes to our zoning ordinance required by our updated Comprehensive Plan

Figure 13. Medicine Lake Zoning Map.



**City of
Medicine Lake**

Zoning Map

Zoning Districts

- "R-1" Residential Single-Family District
- "B-1" Neighborhood Business District
- Residential PUD District

Other mapping information:

- City of Medicine Lake Corporate Limits

0 200 400 800 Feet

Capital Expenditures

Cities need to budget not only for day to day and year to year activities but also for the big ticket items. A new City Hall, a land acquisition for greenspace or park or even such things as resurfacing the streets or repairing the City’s sanitary sewer system are all big ticket items. In general, capital improvements will involve six primary areas. They are: Fire Department, Street Improvements, Sewer Improvements, Facility Improvements, Park Improvements and Greenspace/Land Preservation.

The Fire Department purchased new self-contained breathing apparatuses in 2016. In addition, a used fire truck was purchased in 2018 at the cost of \$85,000 and brought into service.

The City used a UV-cured in place pipe method (CIPP) to create an entirely new main line sewer. The work began in September 2017 and was completed in early summer 2018. The total cost for the project was \$536,450.00. It is believed that the construction cost of the CIPP effort saved the City over \$500,000 compared to traditional methods. In addition, the completed CIPP system meets the Minnesota’s code requirements for a sanitary sewer.

The City’s surface water management implementation program is discussed on pages 54 to 56 and is included as an Appendix to the Comprehensive Plan.

Planned improvements include:

Table 14. Street Improvements

Year	Improvement	Cost	Funding Source
2019	Patch/crack fill	\$30,000	General Fund
2020	Patch/crack fill	\$30,000	General Fund

This schedule for street improvement assumes that Peninsula Rd, Kaiser Avenue and 15th Ave. will not have to be replaced prior to 2028. These street surfaces are reasonably expected to last through 2028. However, the average life of our street bed is 50 years, with our street last built in 1968. These streets cannot be milled and resurfaced due to past work. In the event that the streets do not survive the normal life expected, the cost to rebuild the roads will be significant and onerous. Exclusive of considerations for such improvements as curbing, widening, integrated sewer, etc., the costs associated with the rebuilding will exceed \$2.8 million based on approximately two miles of roadway and assumptions provided by Bear Sterns and Company.*

* *Bear Sterns Municipal Entity* report, 3/31/07

Table 15. Sewer Improvements

Year	Improvement	Cost	Funding Source
2016	Replace main line section	\$100,000	Savings

Year	Improvement	Cost	Funding Source
2017	CIPP of main line	App. \$550,000	Savings
2018	Lift station valve	\$8,000	General Fund
2019	Lift station anode	\$3,000	General Fund

Table 16. Facility Improvements

Year	Improvement	Cost	Funding Source
2014	Repaint City Hall	\$8,000	General Fund
2016	Replace air conditioner	\$7,000	General Fund
2017	Replace window	\$3,000	General Fund

Facility improvements are derived from a CenterPoint Energy audit dated 12-26-06 and performed by Eden Engineering. The report contains six specific area of improvement and provides associated cost/savings estimates. If accurate, the audit estimates a return on investment in approximately 9 years when taken as a function of annual savings.

Table 17. Park Improvements

Year	Improvement	Cost	Funding Source
2019	Plant native species	\$3,000	General Fund
2020	Plant native species	\$3,000	General Fund

The City does not have any additional capital improvements planned between 2019 and 2024 that would have potential to impact regional transportation, sewers, parks, water supply, and open space facilities.