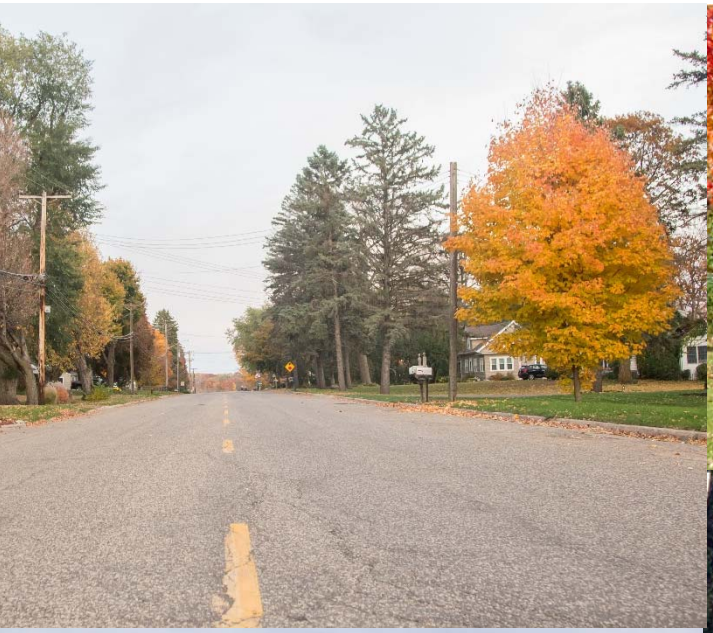
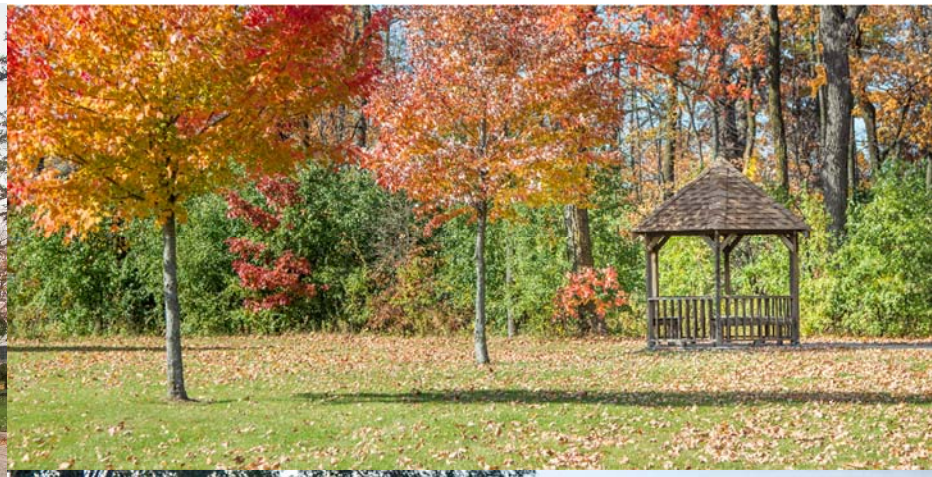
MAPLE PLAIN

EST. 1868 INC. 1912

2040 Comprehensive Plan





City of Maple Plain

Comprehensive Plan

City Council

Planning Commission

Park Commission

Economic Development Authority

City Staff

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Appendixes

Appendix ***Title***

A .....Local Surface Water Management Plan

B .....Community Survey Summary

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TABLE 0-1 COMPLETE PLAN GOALS, POLICIES AND IMPLEMENTATION SUMMARY

CHAPTER	TITLE	GOAL
TWO	LAND USE	▪ Maintain an economic balance and enhance the geographic advantage of the City. ▪ Maintain and improve the exceptional quality of the community. ▪ Provide high-quality spaces for people to live, work and play. ▪ Ensure the availability of lifecycle housing.
THREE	TRANSPORTATION SYSTEM ANALYSIS PLAN	▪ Establish a well-planned transportation system which safely links the community. ▪ Work with MNDOT and Hennepin County to maximize the existing infrastructure and create a safe intersection and link between the north and south sides of the community. ▪ Redevelopment should consider local road reconstruction and improvement. Improvements should include on-street parking, lighting, landscaping and enhanced facilities for pedestrians and bicycles.
FOUR	PARKS, TRAILS AND OPEN SPACE PLAN	▪ Establish a visual identity in harmony with the physical context that reflects and respects the City of Maple Plain's small-town characteristics, historical past, and future with design solutions that are innovative, efficient, durable, beautiful and economically viable. ▪ Provide the community with a variety of affordable choices for physical activity and recreational opportunities for people of all ages. ▪ Provide ample safe and clean park and trail facilities for everyone to enjoy.
FIVE	WATER SUPPY PLAN	▪ Provide water service in an efficient and orderly manner that balances resident and development demands with low cost.
SIX	WASTEWATER	▪ Provide a trunk system that allows the City a certain measure of reserve capacity in the event that a high sewage generating use does appear within its borders.
SEVEN	SURFACE WATER	▪ Manage land disturbance that creates impervious surface to prevent flooding and adverse impacts. ▪ Protect the City's wetlands, lakes, streams, groundwater, and natural areas to preserve the functions and values of

		these resources for future generation through Wetland Conservation Act, buff standards, groundwater protection rules and coordination with outside agencies**.** ▪ Cooperate with Local Water Management Organizations. ▪ Coordinate development review with LWMO. ▪ Participate in Resource Management Plans. ▪ Cooperate in implementation of the Hennepin County Groundwater Plan.

INTRODUCTION

Purpose of the Comprehensive Plan

The 2040 City of Maple Plain's Comprehensive Plan is an instrument used to guide policy, development and land-use decisions to best meet the vision of our community's future. It provides goals, policies and implementation strategies that address economic development, social well-being, environmental issues, and the overall vitality and sustainability of the City in directing its growth through the year 2040. This plan defines the community's current character, describes the desired vision for the community's future, and it anticipates the steps the City must take to accomplish this vision.

The City's 2040 Plan builds on the relevant policies of the 2030 Comprehensive Plan and updates the City's approach to planning by building upon the current strengths of the community and recognizing future trends.

The Plan is "comprehensive" in both scope and coverage. It addresses the use of land and buildings, the movement of traffic and pedestrians, and the provision of parks, utilities and other public facilities. It also addresses residential neighborhoods, commercial and industrial districts, public and institutional lands, and public rights-of-way.

The Comprehensive Plan establishes the ground rules for private improvement and development. It provides guidelines by which the Planning and Park Commissions and City Council can review and evaluate private development proposals. The plan also provides a guide for public investments and capital improvements and can help to ensure that local public dollars are spent wisely.

Downtown Maple Plain

The Comprehensive Plan also provides a basis for refining the zoning ordinance, subdivision regulations and other development and performance standard codes, all of which are used to implement planning policies and recommendations.

Land development is regulated through the City's zoning ordinance and map, which is prepared or amended with guidance from the comprehensive land use plan map and policies. Any change in the pattern of land use or in the development of a property is initiated by the owner, not the City. The City's role in the land development process is typically to administer the regulations of the zoning ordinance and to consider public comments on those aspects that are discretionary, such as amendments to the zoning ordinance or map. The City also installs or oversees the private construction of streets and utilities that serve land development.

Finally, the Comprehensive Plan serves as a marketing tool to promote Maple Plain's unique assets including adjacency to expansive recreation opportunities and close proximity to both urban and rural areas. These unique assets will attract new families, retain existing ones and bring desirable investment and redevelopment to the community.

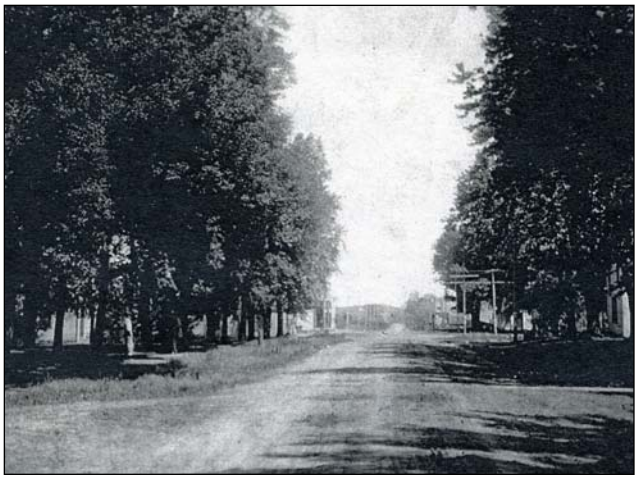
The chapters of this plan are:

- Introduction
- Community Characteristics
- Land Use Analysis and Plan
- Transportation System Analysis and Plan
- Parks System Analysis and Plan
- Water Resources Analysis and Plan
- Implementation Program

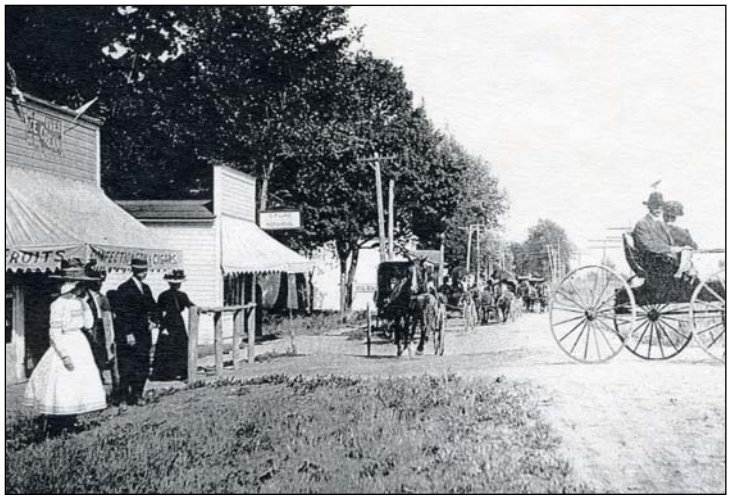
Community History

Maple Plain and its surrounding areas were originally settled in 1854. All of Maple Plain's history contributes to the city it is today. The following are a few examples of the City's history. For a more exhaustive account of Maple Plain's history a detailed narrative can be found at **www.mapleplain.com**.

At right is a view of Main Street around the early 1900s, looking east to west.



Horse and buggies used to be a common site on Maple Plain's Main Street.



The Maple Plain Branch of the Hennepin County Library began in 1922 with a committee of civic-minded residents of the village: Mrs. E. A. Conover, Mrs. H. V. Miller, and Mrs. Henry Oliver. A branch library was arranged with Miss Gratia Countryman, director of the Hennepin County Library system. Other locations were considered, but the newly vacated village post office building on Main Street was chosen. The post office had moved next door into Jim Butterfield's hardware store, which was later replaced by Sig Andersen's electric shop.

Before State Highway 12 was built, Main Street was State Highway 10. The route paralleled the railroad tracks from the east to the viaduct, turned north to County Road 19, and followed present Main Street across the wooden bridge to Armstrong; then turned north at the cemetery to the railroad racks, then on west on the south side of the tracks.

Community Character

Maple Plain is a small city of roughly 2,000 people located in western Hennepin County along State Highway 12. Its geographical relationship to the City of Independence along with its unique shops and gathering places results in Maple Plain functioning as the downtown for the surrounding rural area. The scenic Baker Regional Park—which defines the eastern boundary of Maple Plain—also invites many who seek nature, rest and relaxation.

> ***Building upon its past for a prosperous future, the City of Maple Plain, Minnesota, is a safe, livable community where families grow, businesses thrive and visitors feel at home.***
>
> *-- Maple Plain Mission Statement*

Maple Plain, which is eager to encourage new and vibrant growth, faces unique development and redevelopment opportunities because of State Highway 12 and the large number of vehicles passing through the community during peak commuter hours. A top priority for the City when pursuing these opportunities is development of the corner of State Highway 12 and County Road 29 known as the "Gateway." The strategic location of this area along two major transportation corridors makes it uniquely positioned for a new urban development with a mix of residential, retail, medical and office use.

To the south of the highway and in the heart of Maple Plain is a traditional downtown area which offers a mix of conveniences from government facilities to a host of small businesses. Historically, downtown Maple Plain functioned as the prominent social and cultural heart of the City. Through reinvestment and beautification, the City intends to reestablish and confirm this area's reputation for quality restaurants, quaint shops, boutiques and other conveniences. The City envisions sidewalks and streets filled with people of all ages who are drawn by the beauty and character of the area both day and night. Newly designed building façades and public spaces, along with a constantly changing venue of arts and entertainment, will create the desired ambiance for this area. Additionally, the downtown district is planned for moderate to medium density housing and a new municipal government center that overlooks green spaces with a relocated Hennepin County Library in the heart of a new town square. To ensure the success of the revitalization of the downtown area; City officials, residents and business owners will proactively design and create a physical, financial and regulatory environment conducive to this vision.

A third area of focus for redevelopment efforts resides to the northwest of State Highway 12 and Budd Avenue District. This area is proposed to develop in much the same manner as the Gateway District except that larger retail users would be allowed by right. Open spaces and other design features will be strategically used in this District to provide adequate buffers from existing residential and industrial land uses as necessary.

Through redevelopment and new growth, Maple Plain will sustain and strengthen its small-town identity. Attractively small residential neighborhoods, a variety of churches, quality local schools and outstanding services currently draw and retain residents and businesses. Affordable housing for service workers, senior citizens, young couples, and others is provided through a variety of housing forms with multi-family housing being the focus of redevelopment efforts. In order to retain the small-town character, all new buildings will be scaled appropriately based on their location and proximity to existing single-family neighborhoods. The areas near Highway 12 are best suited for new higher density multi-family and mixed-use housing, including downtown and the State Highway 12 and Budd Avenue District.

Natural and cultural resources also play a large role in defining the character of Maple Plain. A historical library proudly showcases how the community has grown and changed over the years. Two large city parks along with a series of smaller parks offer a variety of recreational opportunities. In the northern portion of the city along Highway 12, a wooded Native American burial ground and a large natural wetland complex provide habitat for local wildlife and migratory water fowl and an opportunity for restoration and educational efforts for conservation.

The City will take advantage of internal and external opportunities by planning for growth and overcoming challenges that arise. Coordination and communication with our neighboring communities (especially the city of Independence) will ensure that local government resources are put to the most efficient use for the sake of both communities. The City will proactively work with the State of Minnesota before, during, and after the reconstruction process for State Highway 12 to maximize its ability to address any perceived threat to the community's small businesses.

Additional improvements to the overall transportation system will also play a key role in the future of Maple Plain. Improved arterial roads, traffic calming measures, and strategic access management will successfully allow non-local commuter traffic to pass through the city while simultaneously encouraging patronage of local establishments. The character of town streets and planned development/redevelopment will be visible from the newly-constructed highway and will draw commuters in, and the network of local roads and traffic control devices will ensure ease of access and egress. A pedestrian-friendly environment will also be created to provide easy access between local businesses and area parks and trails. By working with MnDOT on the design of Highway 12, the City will minimize the impact such a barrier can have on pedestrian movements. It is anticipated that the improvements to Highway 12 would provide an additional pedestrian safe crossing that will aid in linking the two sides of the community.

By facilitating compact growth and efficient development patterns, Maple Plain will continue to deliver affordable, high-quality municipal services. Furthermore, the City will maintain and promote development of a wide array of housing opportunities and compatible commercial development.

The government of Maple Plain has established standards and processes for promoting growth and development. Through its land use plan, zoning ordinances and design standards; the City has and will continue to set clear policies and standards to assure quality development. The City will enforce these standards diligently and consistently.

COMMUNITY PROFILE

This chapter provides the basis for the following sections of the *Comprehensive Plan* through an analysis of the City's position within the Twin Cities Metropolitan Area, in terms of both geographic location and demographics. It contains the following sections:

- Regional System Statement
- Forecast of Population, Households and Employment
- Demographic and Housing Characteristics
  - Regional Indicators
  - General Maple Plain Demographics
  - Maple Plain 2000 - 2010 Census Comparisons

The demographics information was collected by utilizing information from a number of sources, including the City's last Comprehensive Plan, the 2010 U.S. Census, the Minnesota State Demographers Office and the Metropolitan Council.

Regional System Statement

The Metropolitan Council adopted Thrive MSP 2040 on May 28, 2014, and adoptions of the *Transportation Policy Plan*, the *Water Resources Management Policy Plan,* the *Regional Parks Policy Plan*, and the *Housing Policy Plan* then followed. The Metropolitan Council issued system statements the following year pursuant to state statute. The receipt of this system statement and the metropolitan system plans triggered communities' decennial obligation to review and, as necessary, amend their comprehensive plans within the next three years.

Metropolitan system plans are long-range comprehensive plans for the regional systems – transportation and airports, wastewater services, and parks and open space, along with the capital budgets for metropolitan wastewater service, transportation and regional recreation open space. System statements explain the implications of metropolitan system plans for each individual community in the metropolitan area. They are intended to help communities prepare or update their comprehensive plan, as required by the Metropolitan Land Planning Act.

The system statement includes forecasts of densities that assure regional growth is achieved consistent with adopted policies. These forecasted densities help ensure regional services and costly regional infrastructure can be provided as efficiently as possible, and that development and growth within the metropolitan area occur in a coordinated manner. The system statement also contains an overview of the

transportation and aviation, transit, wastewater, and regional parks system plan updates, and system changes affecting each community.

Maple Plain Considerations

The Metropolitan Council forecasts growth at appropriate densities for communities in order to protect the efficiency of wastewater, transportation and other regional system investments, and to help ensure the metropolitan area can accommodate its projected growth by the year 2040.

Maple Plain Census 2010 Demographic Data

An individual's needs change greatly with age over their lifetime. Education, employment, housing, health care and transportation needs are all profoundly affected by age. To effectively plan to meet these needs it is important to anticipate how the numbers of people in different age groups will change over time. The extremely unbalanced age distribution that is the legacy of the low birth rates of the great depression and World War II, the post-war baby boom and the subsequent baby-bust will continue to cause huge shifts in the populations of specific age groups beyond the Council's 2040 forecast horizon. The City of Maple Plain is like most communities that show a significant rise in the retired population.[1]

However, unlike many communities, the smaller homes at affordable costs has increased the population in the first-time homeowner age range, and that should result in an increase in birth rates in the community. The following charts on the next several pages are Census data from seven years ago but should indicate a statistically fair representation of Maple Plain.

Table 1-1 shows the historical census population of the City along with revised Metropolitan Council populations forecasts for 2020, 2030, and 2040. The City of Maple Plain received additional information from the Metropolitan Council and also analyzed building permit data and land use data in the Geographic Information System (GIS) and inquired whether or not this forecast could be modified slightly to more accurately represent the actual development patterns and available buildable land in the community.

[1] *Metropolitan Council*

The following forecast is Maple Plain's revision and serves as the basis for the *Comprehensive Plan* update.

Table 1-1: Population

	Actual			Forecasts		
	1990	**2000**	**2010**	**2020**	**2030**	**2040**
Maple Plain	2,005	2,088	1,768	1,870	2,090	2,320

Source: Metropolitan Council, City of Maple Plain

Maple Plain's population has historically remained stable. The City lost population between the 2000 Census and 2010. It is forecasted that the City will gain around 550 more people by 2040.

Table 1-2 outlines the historical household growth of the community.

Table 1-2: Households

	Actual			Forecasts		
	1990	**2000**	**2010**	**2020**	**2030**	**2040**
Maple Plain	696	770	723	790	890	1,000

Source: Metropolitan Council, City of Maple Plain

Like population the City experienced a reduction in households between 2000 and 2010. The City is expected to have 1,000 total households in 2040. Table 1-3 displays the racial makeup of Maple Plain. The City is predominately white with 97.7 percent of the population.

Table 1-3: Race

Race	Maple Plain	
	Number	**Percent**
White	1,655	94.17%
Asian	11	0.62%
Two or more races	25	1.41%
Black or African American	35	1.98%
Some other race	8	0.4%
American Indian and Alaska Native	6	0.34%
Native Hawaiian and Other Pacific Islander	1	0.06%

Source: U.S Census

In addition to the City's population and household numbers, educational attainment level also influences the community. Table 1-4 shows the educational attainment levels in the community. This information contributes to the local economy, influences economic development and also suggests potential demands of current residents.

Table 1-4: Educational Attainment (both sexes)

Population 25 years and over	**Percent**
Less than 9th grade	5.2%
9th to 12th grade, no diploma	6.1%
High school graduate (includes equivalency)	30.8%
Some college, no degree	26.1%
Associate degree	6.3%
Bachelor's degree	19.7%
Graduate or professional degree	5.8%
Total	**100%**
Percent high school graduate or higher	88.7%
Percent bachelor's degree or higher	25.5%

Source: U.S. Census 2010

The economic health of a community plays a critical role to encourage and maintain a high standard of living and a desirable place to live for existing residents but even more importantly for attracting new residents. The following information and tables identify current employment trends and other applicable factors.

Table 1-5 illustrates historical and forecasted employment figures for Maple Plain. The City can expect its employment numbers to incrementally grow through 2040 as the City redevelops and attracts new business.

Table 1-5: Employment Numbers

	1990	2000	2010	2020	2030	2040
Maple Plain	1,100	1,681	1,579	2,000	2,200	2,300

Source: Metropolitan Council

Community Designation

The City of Maple Plain is designated as a "suburban" community in Thrive MSP 2040. Community designations are shown on the Community Designations map, see Figure 1-1. Suburban communities experienced growth and expansion during the 1980s and early 1990s, and typically have automobile-oriented development patterns at significantly lower densities than in previous eras.

Suburban communities are expected to plan for forecasted population and household growth at average densities of at least five units per acre for new development and redevelopment. In addition, Suburban communities are expected to target opportunities for more intensive development near regional transit investments at densities and in the manner articulated in the 2040 Transportation Policy Plan. Thrive MSP 2040 adopted by the Twin Cities Metropolitan Council outlines the land use policies for each type of community designation. The roles of Maple Plain as follows:

Orderly and Efficient Land Use

Maple Plain Role

- Plan for forecasted population and household growth at overall average densities of at least 5 units per acre, and target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the 2040 Transportation Policy Plan.
- Identify areas for redevelopment particularly areas that are well-served by transportation options and nearby amenities and that contribute to better proximity between jobs and housing.

- In collaboration with other regional partners, lead major development efforts.
- Lead detailed land use planning efforts around regional transit stations and other regional investments.
- Plan for and program local infrastructure needs (for example, roads, sidewalks, sewer, water, and surface water), including those needed to accommodate future growth and implement local comprehensive plans.

Natural Resources Protection

Maple Plain Role

- Integrate natural resource conservation and restoration strategies into the comprehensive plan.
- Identify lands for reclamation, including contaminated land, for redevelopment and the restoration of natural features and functions.
- Integrate natural resources restoration and protection strategies into local development ordinances.
- Develop programs that encourage the implementation of natural resource conservation and restoration.

Water Sustainability

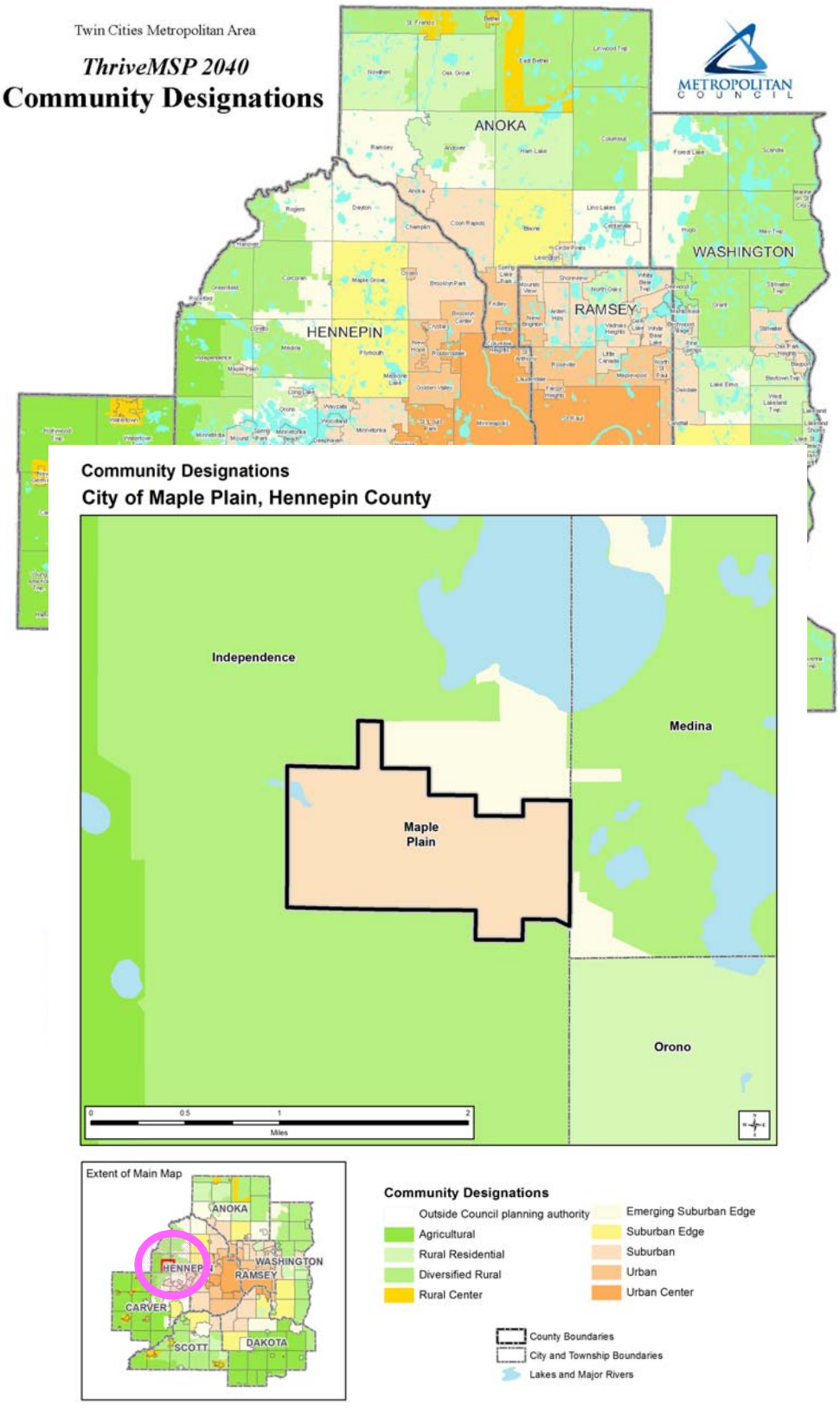
Maple Plain Role

- Implement best management practices to control and treat stormwater as redevelopment opportunities arise.
- Explore alternative water supply sources to ensure adequate water resources beyond 2040.

Housing Affordability and Choice

Maple Plain Role

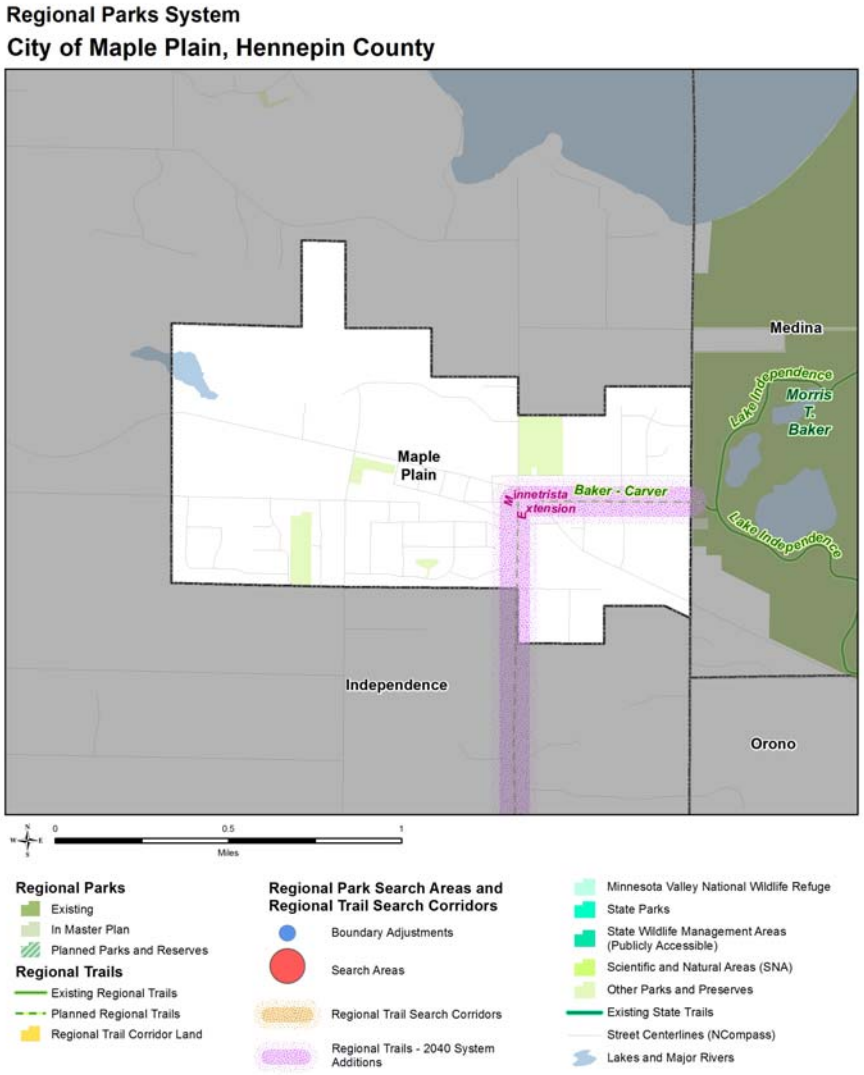
- Designate land in the comprehensive plan to support household growth forecasts and address the community's share of the region's affordable housing need through development and redevelopment at a range of densities.


Twin Cities Metropolitan Area
ThriveMSP 2040
Community Designations
METROPOLITAN COUNCIL
ANOKA
WASHINGTON
RAMSEY
HENNEPIN
Community Designations
City of Maple Plain, Hennepin County
Independence
Medina
Maple Plain
Orono
0
0.5
1
2
Miles
Extent of Main Map
ANOKA
HENNEP
WASHINGTON
RAMSEY
CARVER
SCOTT
DAKOTA
Community Designations
Outside Council planning authority
Agricultural
Rural Residential
Diversified Rural
Rural Center
Emerging Suburban Edge
Suburban Edge
Suburban
Urban
Urban Center
County Boundaries
City and Township Boundaries
Lakes and Major Rivers

Regional Park System Plan Considerations

There are no regional parks and trails within Maple Plain, but after the adoption of the *2040 Regional Parks Policy Plan*, the Three Rivers Park District Baker/Carver Regional Trail master plan was passed in June 2015. This plan identifies the alignment of a trail that will link Baker Park Reserve and Carver Park Reserve. The trail would go through Maple Plain (Main Street East to County Road 19) as illustrated in the map below.

Figure 1-2: 2040 Regional Parks Policy Plan Map



Transportation System Plan Considerations

Trunk Highway 12 is the only metropolitan highway in the City of Maple Plain. There are no known future expansion plans for this highway, but the City has been actively working with the Minnesota Department of Transportation (Mn/DOT) and Hennepin County on design solutions to add a controlled intersection at Main Street and Highway 12. This controlled intersection would also provide a controlled intersection for CSAH 19. (see Transportation Plan for proposed intersection concept plan).

The City and Mn/DOT recognize ongoing challenges along the existing roadway system, such as delays, longer travel times and potential safety problems. The two entities understand these problems are detrimental to the quality of life, natural environment and economic development. However, both entities are engaging in ongoing conversations to address these concerns and encourage economic development in accordance with land use objectives while protecting environmentally sensitive areas and preserving the historical and community character.

There are no existing or planned aviation facilities within Maple Plain.

Water Resources Considerations

The revised *Water Resources Management Policy Plan,* adopted by the Metropolitan Council in March 2015, is the metropolitan system plan for metropolitan wastewater services with which local comprehensive plans must conform. The system statement summarized significant elements of the metropolitan system plan and highlighted those elements that apply specifically to Maple Plain.

Metropolitan Sewer Service

The forecasts of population, households, employment, and wastewater flows for Maple Plain are contained in the adopted *Water Resources Management Policy Plan*. These forecasts are for sewered development, as the entire City is within the municipal urban service area (MUSA). The sewered housing forecasts were estimated based on sewer access charge (SAC) data, annual city reports, current trends and other information relating to the community. The wastewater flows are based on historical wastewater flow data and the projected sewered housing and employment data (Table 6-4).

The wastewater flow from the City of Maple Plain is treated at the Blue Lake wastewater treatment plant (WWTP) located within Shakopee, MN. There are many projects scheduled for the Blue Lake WWTP through 2040. These projects will provide additional capacity at the plant as well as improve its ability to meet required permit standards. The City of Maple Plain is served by Metropolitan Council interceptor 8352. This interceptor currently has an available capacity of 0.49 million gallons per day (mgd) to provide for the long-term needs of the city. The Metropolitan Council has a proposed interceptor improvement project to rehabilitate lift station L63 and a project to add a second forcemain scheduled to be designed and constructed in 2020-2021 to support the long-term needs of the city.

Inflow/Infiltration (I/I) Reduction Goal

The I/I goal established for the City of Maple Plain is by an allowable peak hourly flow rate and varies based on annual average flow. The Metropolitan Council's metering program shows that the city's 2004 annual average flow was 0.36 mgd. The current I/I goal for the community is an allowable peak hourly flow of 1.31 mgd. The City of Maple Plain has been actively pursuing the reduction in I/I and will continue pursuing additional reduction as mandated by the Metropolitan Council.

Surface Water Management

Maple Plain is in the Minnehaha Creek Watershed District and the Pioneer Sarah Creek Watershed Management Organization. The Pioneer Sarah Creek watershed plan was approved by the Board of Soil and Water Resources (BWSR) in 2015. The Minnehaha Creek watershed plan was approved by BWSR in 2018 and is currently being updated. The City of Maple Plain will adopt a comprehensive Surface Water Plan that meets the requirements of both watershed commissions and will revise as necessary upon completion of new plans.

Water Supply Planning

The City of Maple Plain will update its local water supply plan consistent with the guidelines released in 2015 by the Department of Natural Resources and submit the water supply plan to the Metropolitan Council for review.

TABLE 2-1 CHAPTER 2 - LAND USE: GOALS, POLICIES AND IMPLEMENTATION SUMMARY

GOALS	POLICIES	IMPLEMENTATION
1. Maintain and encourage high quality development by capitalizing on the geographic advantage of the City.	• Maintain design standards for high quality development which will provide the highest possible tax base within the City of Maple Plain.	▪ Require development to pay for all costs of improvements including any public facilities required to adequately serve the development. ▪ Development shall be fiscally sound and shall enhance or complement the existing land uses, housing or business types, and respect the small-town character of the community
2. Maintain and enhance the small-town quality of a connected community.	• Provide a pedestrian and safe vehicular connection point between the north and south sides of Highway 12.	▪ Pursue opportunities to develop and redevelop existing parcels by leveraging known and available resources where appropriate. ▪ Continue to foster development/redevelopment in the Mixed-Use Zoning Districts.
3. Provide a high-quality place for people to live, work and play.	• Demand development and redevelopment that is innovative, sustainable and of the highest quality, so as to establish Maple Plain as a small-town community in Minnesota where people come to live, work and play. • Ensure that the existing housing stock is maintained in a safe and aesthetically pleasing manner.	▪ Require development and redevelopment to have quality materials and design in accordance with the adopted design standards. ▪ Require development and redevelopment to be consistent with the comprehensive plan.
4. Ensure availability of affordable housing exists for all age groups.	• Continue to pursue housing that provides for a full continuum of types, prices and designs.	▪ Continue to use the flexibility afforded by the mixed-use zoning provisions to promote creatively designed affordable places to live.

.		▪ Expand housing opportunities for aging adults.

LAND USE ANALYSIS AND PLAN

Regional Development Framework Planning Designation

The urban area identified in the Regional Development Framework established by the Metropolitan Council is divided into five community designations specific geographic planning areas:

- Urban Center
- Urban
- Suburban (Maple Plain)
- Suburban Edge
- Emerging Suburban Edge

The rural area (much of the area surrounding Maple Plain) identified in the Regional Development Framework is divided into four specific geographic planning areas:

- Rural Centers/Rural Growth Centers,
- the Diversified Rural Communities,
- the Rural Residential Areas, and
- the Agricultural Areas.

One of the primary differences among all of the community designations is the density at which they develop. To ensure regional projected growth is accommodated while limiting suburban sprawl, the Metropolitan (Met) Council has established minimum benchmarks for the overall densities in each of the established geographic planning areas. Using these benchmarks as a guide, the Met Council negotiates a share of forecasted regional growth with each community based on its community designation, existing development patterns, common challenges, and shared opportunities. The cumulative result of the community-accepted distribution of future growth is then analyzed to ensure the minimum benchmarks for each community designation are achieved. The final plan becomes the basis for determining required developable land supplies in each community and guides the Met Council's planning and investment decisions relating to regional issues such as highways and wastewater services.

Growth Accommodation in Suburban Communities

Metropolitan Council investments in regional systems and incentives for ***Suburban Developed Communities*** are: to maintain current infrastructure; renew and improve infrastructure, buildings and land to provide for additional growth, particularly at centers along transit corridors; and to support developments that integrate land uses.

Flexibility will be a hallmark of growth planning and staging within areas designated as ***Developed Communities.*** Achieving connected land use patterns that can be served efficiently and economically with urban services is important, but so too is adherence to design requirements and the integration of old and new development in a meaningful way. Decisions to extend regional infrastructure for ***Developed Communities*** will be made based on evidence of efforts to mix and connect land use patterns at appropriate densities.

Existing Land Use

The existing land use in Maple Plain is shown by Figure 2-1. It can be broadly described as a central core of low-density single-family detached housing grouped with a mix of more diverse land use patterns including commercial (retail and office), industrial and multi-family land uses (mostly apartments including an age-restricted complex). Beyond these areas, the City is enclosed by the City of Independence on three sides and on the fourth side (east) by Baker Regional Park in the City of Medina. Table 2-1 quantifies existing land use by the acreage in each existing land use category.

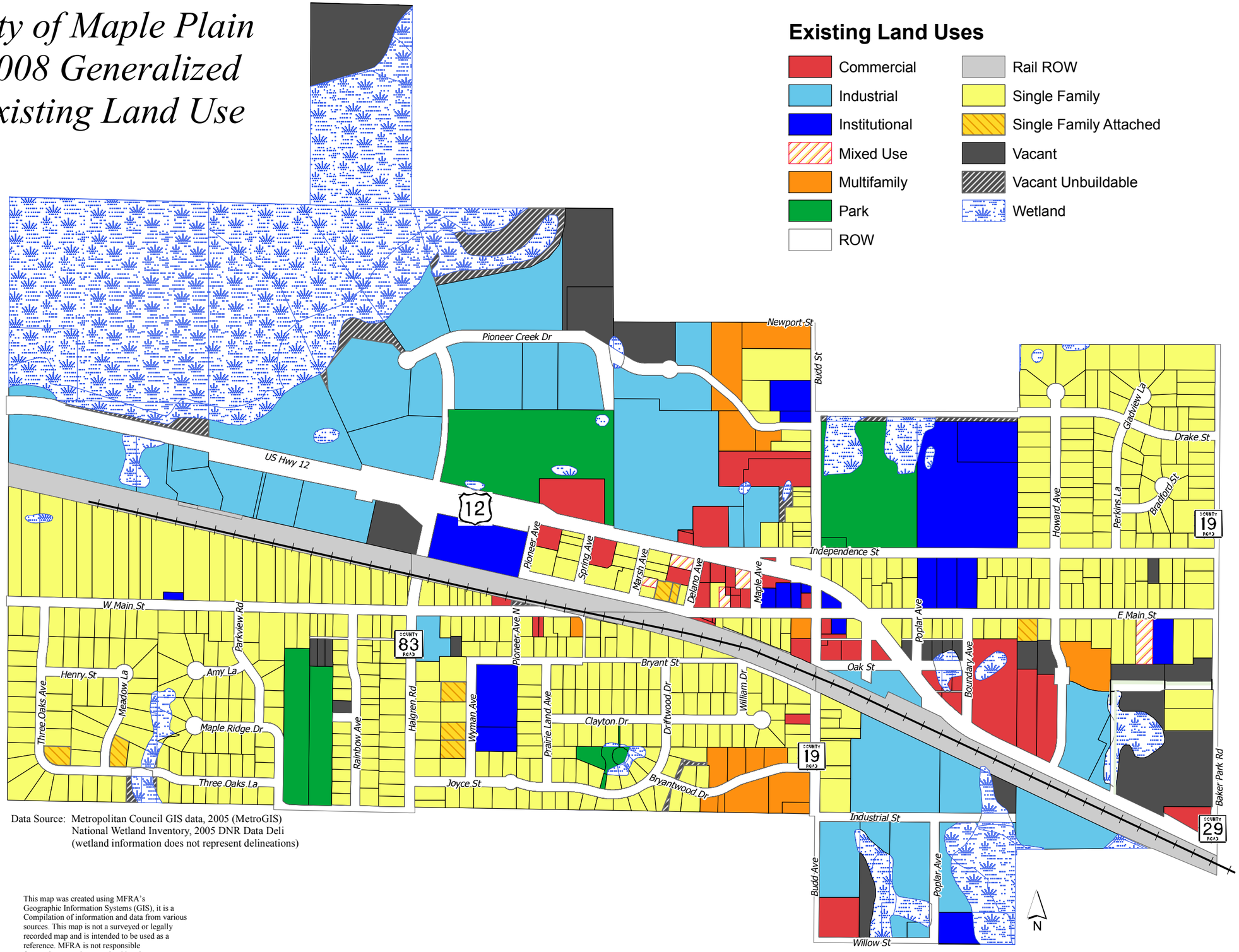
Table 2-1: Existing Land Use

	Acres	%
Residential and Mixed Land Uses		
Low Density Residential (Single-Family Detached)	196.68	28.9%
Medium Density Residential (Single-Family Attached)	6.55	0.1%
Multifamily	13.75	2.0%
Mixed-Use	1.65	0.2%
Exclusive Commercial/Industrial Land Uses		
Commercial	19.65	2.8%
Industrial	103.14	15.2%
Public/Semi Public Land Uses		
Institutional	27.93	4.1%
Parks/Open Space	29.50	4.3%
Road Right-of-Way	98.57	14.5%
Rail Right-of-Way	29.10	4.3%
Other		
Wetland	116.84	17.2%
Vacant	30.06	4.4%
Vacant Unbuildable	6.94	1.0%
TOTAL:	**680.35**	100.0%

Source 2018 Terramark GIS Analysis

Figure 2-1

City of Maple Plain 2008 Generalized Existing Land Use



Data Source: Metropolitan Council GIS data, 2005 (MetroGIS)
National Wetland Inventory, 2005 DNR Data Deli
(wetland information does not represent delineations)

The existing land use categories are defined as follows:

Low Density Residential (single-family detached) – a land use specifically for the development of single-family dwellings in the community.

Multifamily – a land use specifically for the development of multiple-family dwelling unit structures and directly related complementary uses.

Low Density Residential (single-family detached) – a land use specifically for the development of single-family dwellings in the community.

Mixed-Use – a land use for existing legal nonconforming uses which combine residential and commercial uses on the same property.

Commercial – a land use specifically for the development of commercial, service, office and retail activities.

Industrial – a land use specifically for the development of a wide range of industrial, warehousing, and bulk commercial activities.

Institutional – a land use which identifies sites of public and semi-pubic uses (i.e. government buildings, churches, libraries, etc).

Parks / Open Space – a land use which identifies property set aside for active and passive recreational opportunities, and/or areas that are protected from future development.

Road/Rail Right-of-Way – Land designated for specific uses such as roads, utilities, or railroad corridors.

Wetland – a land use category identifying land which is unusable due to the presence of wetlands.

Vacant – property which is undeveloped but could be in the future.

Vacant Unbuildable – property which is undeveloped and will remain so due to circumstances which eliminate its development potential.

All communities within the metropolitan area are required to calculate existing net residential densities to gauge compliance with minimum density requirements, and to illustrate capacity to accommodate future residential development. Below is a calculation of net developed acres and existing net density in accordance with the Metropolitan Council's standard calculation methodology. Gross acreages for residential land uses were calculated using Hennepin County Parcel data. Using a GIS, acreages for wetlands, water bodies, parks, open space and rights-of-way were removed from the City as a whole resulting in the net acreages shown.

Table 2-2: Net Density of Residential Development (Acres)

Land Use Category	Single-family # of Units	Multi-Family # of Units	Gross Acres	Acres Wetland & water-bodies	Acres Public Parks & Open Space	Acres New Arterial Road ROW	Acres Other / Undeveloped land*	Net Residential Acres	Net Density Units/Acre
EXISTING RESIDENTIAL LAND USES									
Low Density Residential	502	0	*200.54*	–	–	0.0	–	**196.68**	**2.62**
Med. Density Residential	0	34	*6.55*	–	–	0.0	–	**6.55**	**5.19**
Multifamily	0	234	*15.75*	–	–	0.0	–	**13.75**	**17.01**
Mixed-Use	0	8	*1.65*	–	–	0.0	–	**1.65**	**4.85**
TOTALS:	**778**		*224.44*					**218.63**	**3.56**
Park / Institutional	0	0	–	–	*46.58*	–	–	–	–
Existing ROW	0	0	–	–	–	*98.57*	–	–	–
Rail ROW	0	0	–	–	–	*29.1*	–	–	–
Wetland	0	0	–	*116.84*	–	–	–	–	–
Unbuildable	0	0	–	–	–	–	*6.94*	–	–
Non-residential Land Uses	0	0	157.83	–	–	–	–	–	–
ACREAGE TOTALS:			382.32	116.84	46.58	127.67	6.94	–	–
COMBINED ACREAGE TOTAL:			**680.35**					–	–

Metropolitan Council Land Use, Patterns of Land Use

The following land use figures represent the change in land use over the last several years. The figures generally show that Maple Plain has not changed much over the last few decades with respect to new land uses.

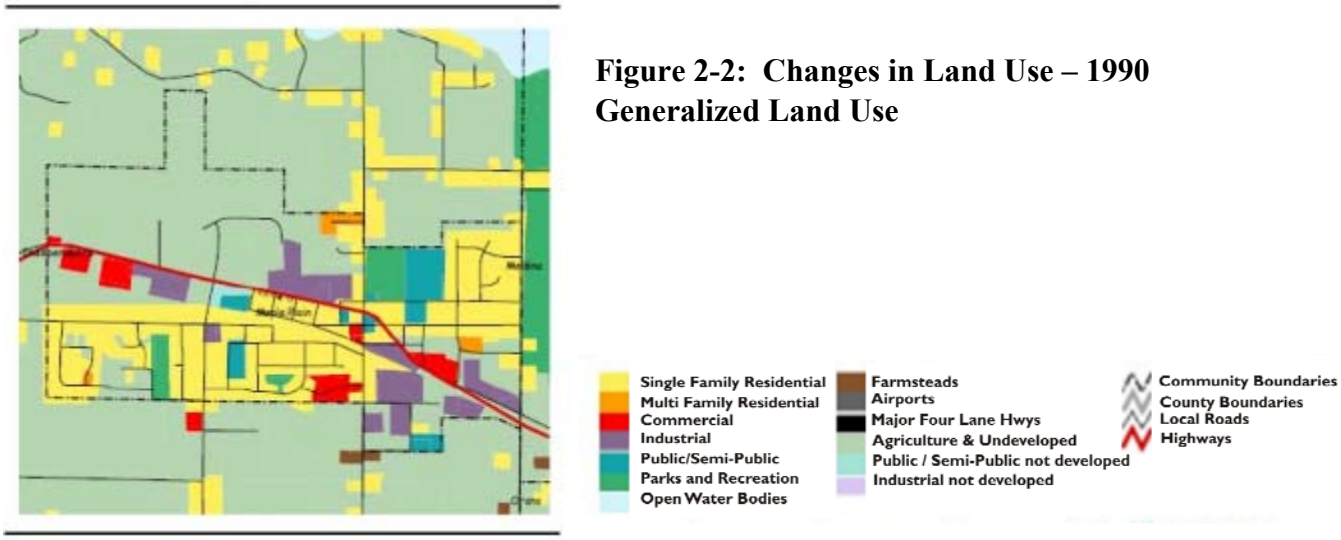


Figure 2-2: Changes in Land Use – 1990 Generalized Land Use

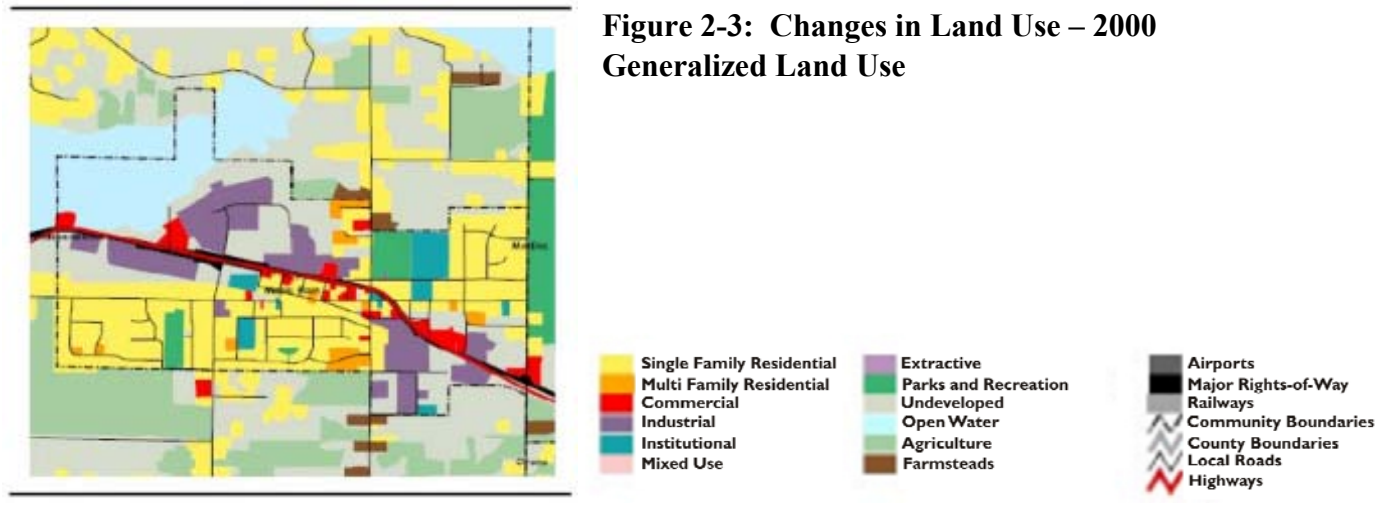
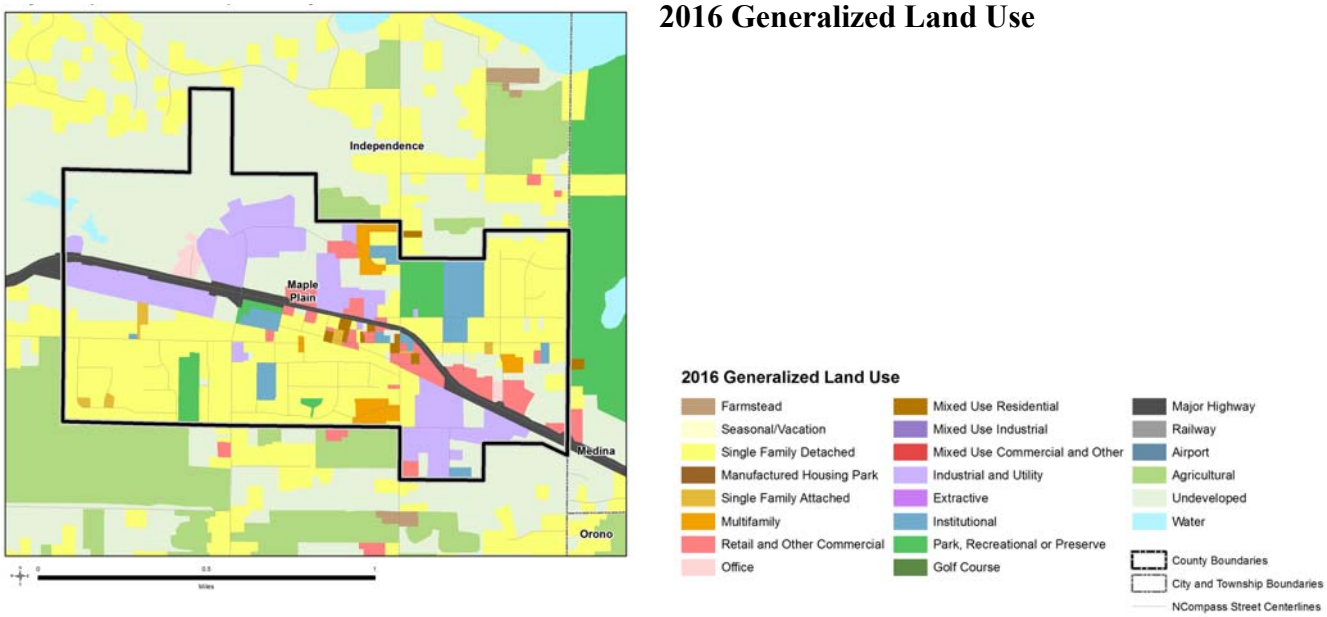


Figure 2-3: Changes in Land Use – 2000 Generalized Land Use

Figure 2-4: Changes in Land Use
2016 Generalized Land Use



Natural Features

Figure 2-5 depicts natural features within and near Maple Plain. The map identifies public waters, floodplains, and mapped wetlands. There are large wetland complexes in the northwest and southeast sections of the City that include Pioneer Creek and its surrounding watershed.

Land Use Plan

Because Maple Plain is essentially fully developed, this plan focuses on opportunities for redevelopment, selective infill, and enhancement of the City's image through public improvements and private site design. Recommendations are divided into two sections:

- The land use plan (Figure 2-6)
- The housing plan

As discussed in the Introduction to this plan, Maple Plain needs to create a self-image by allowing for flexibility in redevelopment, creation of a new Town

Centre, enhancements to the historical downtown and by improving public areas through the development of new open spaces, trails and sidewalks.

The City has three specific areas that are being targeted for redevelopment that are discussed in more detail later in this chapter:

- Downtown
- The Gateway
- Budd Avenue/Highway 12

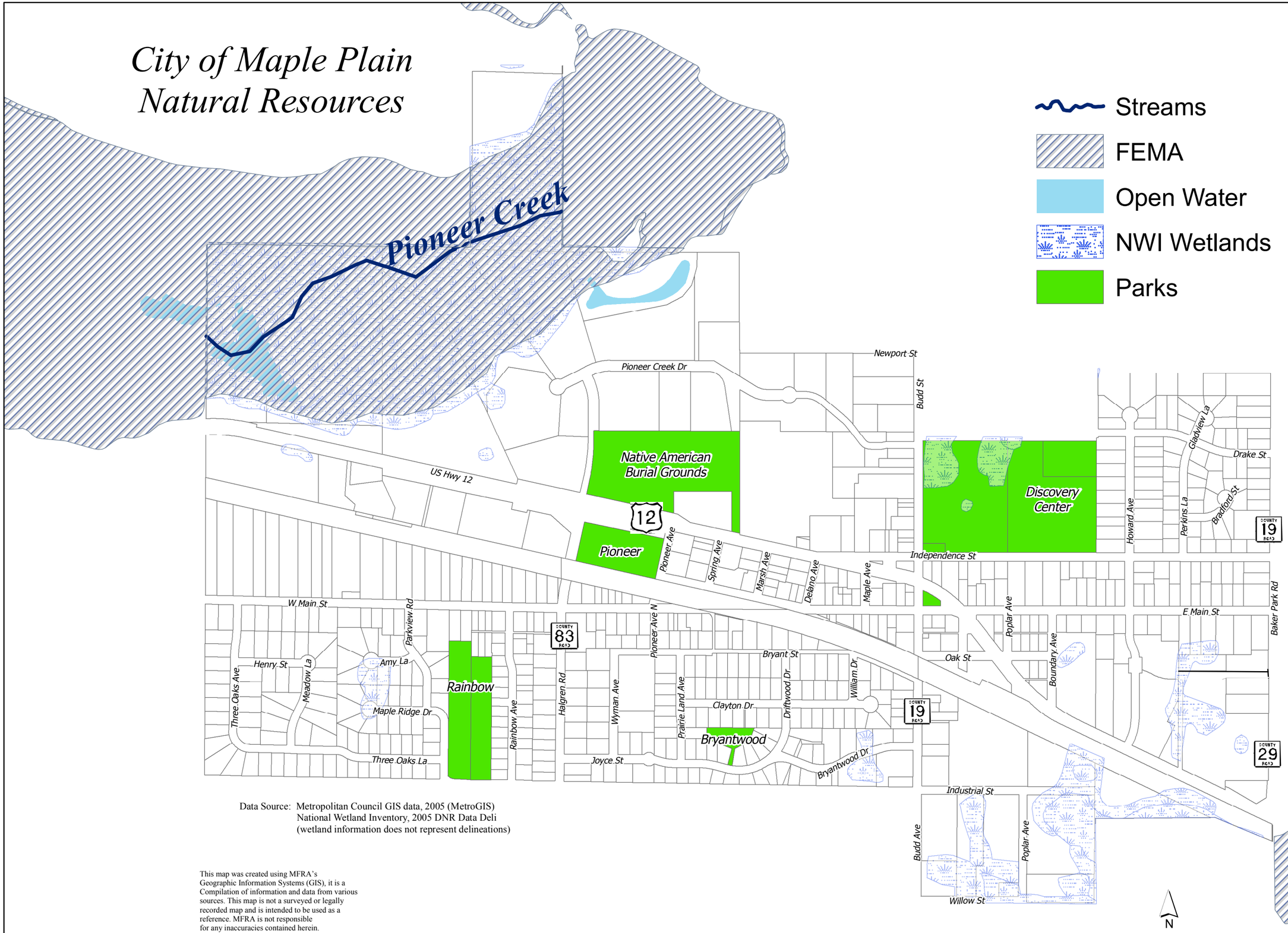
Each of these areas will be showcased in the plan as "special areas" which will generally describe (both in text and graphics) how the City generally sees each of the areas redeveloping. All three areas will require significant public investment, especially the Downtown area. To entice development, new zoning districts will be created that allow for the flexibility mentioned earlier so as to not limit the possibilities of any creative land use and/or design that is presented before the City for review and approval. The land use for these areas will all be a type of mixed-use which will further allow for the property owner and developer to decide the best use of the property based on the current market and development constraints.

Figure 2-5

City of Maple Plain
Natural Resources

Figure 2-4

Natural Resources



Data Source: Metropolitan Council GIS data, 2005 (MetroGIS)
National Wetland Inventory, 2005 DNR Data Deli
(wetland information does not represent delineations)

This map was created using MFRA's Geographic Information Systems (GIS), it is a Compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. MFRA is not responsible for any inaccuracies contained herein.

Figure 2-6

Figure 2-5

Proposed Land Use

City of Maple Plain

N

0 600 1,200

Feet

- City Boundary
- Low Density Residential (1-4 u/a)
- High Density Residential (8-20 u/a)
- General Mixed Use (5-20 u/a)
- Downtown Mixed Use (3-15 u/a)
- Industrial
- Park/Institutional
- Vacant Unbuildable
- Rail Right-of-Way
- Right-of-Way
- Open Water
- NWI Wetland

MAPLE PLAIN EST 1868 INC 1912

Stantec

September 18, 2018

Source: Hennepin County 2017, City of Maple Plain 2018

V:\1938\active\193801803\GIS\Projects\Future Land Use w Aerial.mxd

Planned Land Use: 5-Year Increments

Table 2-3 (below) illustrates the planned land use (based on the land use guide plan) in 5-year increments through the year 2040. This spreadsheet was calculated using the 2040 planning land use forecast as well as the number of acres devoted to the new and existing land uses. The City anticipates several new development and redevelopment projects will commence in the next few years.

Table 2-3: Planned Land Use in 5-year Increments

Land Use Category	Allowed Density Ranges (units/acre)		Existing Land Use (acres)	Planned Land Use in 5-year Increments (acres)					Change
	Min	Max	2018	2020	2025	2030	2035	2040	
Residential & Mixed Land Uses									
Low Density Residential	1.0	< 4.0	200.54	*198.91*	*196.88*	*195.25*	*193.62*	*192.01*	- 8.13
Medium Density Residential	4.0	< 8.0	6.55	*6.55*	*6.55*	*6.55*	*6.55*	*6.55*	0
High Density Residential	8.0	< 20.0	15.75	*0*	*0*	*0*	*0*	*15.75*	0
Downtown Mixed-Use	3.0	< 15.0	0.00	*1.85*	*2.85*	*14.19*	*16.85*	*23.84*	+ 23.84
General Mixed-Use	5.0	< 20.0	9.54	*29.78*	*41.34*	*45.93*	*48.77*	*52.59*	+52.59
Exclusive Commercial & Industrial Land Uses									
Commercial	–	–	27.99	*26.14*	*13.78*	*9.19*	*4.60*	*0*	- 27.99
Industrial	–	–	103.14	*100.83*	*98.52*	*96.21*	*93.90*	*91.58*	- 11.56
Public & Semi-Public Land Uses									
Park / Institutional	–	–	46.58	*55.26*	*53.09*	*50.92*	*48.75*	*46.58*	- 10.85
Road ROW	–	–	98.57	*98.57*	*98.57*	*98.57*	*98.57*	*98.57*	0
Rail ROW	–	–	29.10	*29.10*	*29.10*	*29.10*	*29.10*	*29.1*	0
Other									
Wetland	–	–	116.84	*116.84*	*116.84*	*116.84*	*116.84*	*116.84*	0
Vacant	–	–	26.75	*24.03*	*18.00*	*11.97*	*5.94*	*0*	- 26.75
Unbuildable	–	–	6.94	*6.94*	*6.94*	*6.94*	*6.94*	*6.94*	0
TOTALS:	–	–	**680.35**	*680.35*	*680.35*	*680.35*	*680.35*	**680.35**	**0.00**

Notes: The "General Mixed-Use" district will allow for a wide mix of uses but shall be a minimum of 50% residential (189 units). The "Downtown Mixed-Use" district will also allow for a wide mix of uses which can integrate residential units vertically above the main level commercial uses. At a minimum, the downtown shall be a minimum of 35% residential (69 units).

The minimum density requirement shall only be in effect until such time that the minimum number of units in a particular district has been or will clearly be achieved given pending development or developable land remaining.

Planned redevelopment is shown as occurring in a steady progression over each five-year increment, but the city will allow greater levels of change based on opportunity and market demand.

Below is a calculation of net acres and the anticipated net density of the City upon build-out of the proposed improvements outlined by this plan. Again, gross acreages for residential land uses were calculated using Hennepin County Parcel data. Using a GIS, acreages for wetlands, water bodies, parks, open space and rights-of-way were removed from the City as a whole resulting in the net acreages shown.

Table 2-4: Net Density of PROPOSED Residential Development (Acres)

Residential Land Use Category	Allowed Density Ranges (units/acre)		Existing Land Use (acres)	Change (acres)	Min. Mixed Use % Res.	Final Net Res. Acres	Existing Units	Unit Change	Final Units	Redevelop-ment Net Density (units/acre)
	Min	Max	2018	2018 to 2040		2040				
Low Density Residential	1.0	< 4.0	196.68	- 8.13		**188.55**	502	-55	447	2.37
Medium Density Residential	4.0	< 8.0	6.55	0		**6.55**	34	0	34	5.19
High Density Residential	8.0	< 20.0	13.75	0		**13.75**	234	0	234	17.01
Downtown Mixed-Use	3.0	< 15.0	0.00	+ 23.84	35%	**8.34**	0	+69	69	20.26
General Mixed-Use	5.0	< 20.0	9.54	+ 43.05	50%	**26.30**	0	+189	189	7.18
Redevelopment Summary	–	–	***34.64 redevelopment acres****				***258 new units***			***7.45***
ALL LAND post redevelopment	–	–	–	–	–	***243.49***	–	–	***1000***	***4.11***

* *Represents 35% of the Downtown Mixed-Use District and 50% of the General Mixed-Use Districts*

Land Use Designations

Low Density Residential (LA1):

Land Use Description: This category encompasses development that allows for a range in density from 1-4.0 dwelling units per developable acre. This land use category corresponds to the R-1 zoning district. Most existing single-family neighborhoods in the City fall into this category, but this density could also include very low-density multi-family housing.

Medium Density Residential (LA2):

Land Use Description: This category encompasses development that allows for a range in density from 4.1-8.0 dwelling units per developable acre which can accommodate single-family but is more associated with multi-family use. This land use corresponds to the R-2 zoning district.

High Density Residential (LA3):

Land Use Description: This category encompasses development that allows for a range in density from 8.1-20 dwelling units per developable acre which generally only accommodates multi-family developments such as condos, apartment complexes and mixed-use projects. This land use corresponds to the R-3 zoning district.

Mixed-Use (MU):

Land Use Description: This is a land use designation that will correspond to the "Gateway" as well as the area west of Budd Avenue on the north side of State Highway 12 (MU-G and MU-B Zoning Districts). The primary purpose of the Mixed-Use designation is to provide for redevelopment with the flexibility to respond to market conditions and provide a mix of uses which is generally along the highway corridor. Permitted uses include commercial, office, and residential uses that have a density of between 5 to 20 units per developable acre. The height of the buildings will be defined by the zoning requirements. By allowing a broad array of uses, property owners and developers will have more choice in how the land can be developed.

Design standards and a new zoning district will further provide for developments that encourage the most efficient use of the limited redevelopment area. Access, both vehicular and pedestrian, should be a primary focus of all mixed-use developments. The City encourages and anticipates a network of trails and open spaces that connect to the regional recreation areas as well as to Downtown. The Land Use Guide Plan sets aside significant amounts of land to this mixed-use designation to support new land use policies aimed at promoting more compact/sustainable development patterns, reducing auto trips, increasing connectivity, encouraging walking and the use of transit, and expanding the supply of higher density and affordable housing near employment and activity centers.

Downtown (DWTN):

Land Use Description: This is a land use designation that will be established for the entire downtown area. Similar to the general mixed-use designation, the Downtown area will combine retail, service, commercial, and public/semi-public uses with office and/or residential use in the same building or on the same site that have a density of between 3 to 15 units per developable acre. The height of the buildings will be defined by the zoning requirements. Mixed-use areas can create vibrant pedestrian-oriented urban but traditionally designed environments by bringing complementary activities and public amenities together in one location at various scales.

The new Downtown area designation is intended to create significant development opportunities that may also include the construction of a Town Centre including City Hall and a Hennepin County Branch Library. New developments will be required to fit into the existing character of the area in terms of building mass, design and proximity to the street, but developments do not have to provide for mixed-use within the individual site.

Mixed-uses can be integrated vertically in a single structure with the upper floors used for office or residential use, and the ground floor for retail or service uses. They can also be integrated horizontally by providing retail or service use in the portion fronting the public or private street with office uses or attached/multifamily residential behind.

Industrial (IND):

Land Use Description: The purpose of this land use district is predominately to provide for a wide range of light to heavy industrial, warehousing and bulk commercial activities. This district is not intended for community commercial (retail, service). The existing zoning districts associated with this designation are I1 and I2.

Table 2-5: Planned Land Use Categories and Corresponding Zoning Map Categories

Land Use Plan Map Category	*Land Uses*	*Corresponding Zoning Districts*
Single-Family Housing	Detached housing units. The corresponding zoning district allows lots as small as 9,000 square feet.	R-1, Single-Family
Two-Family and Townhouses	Two-unit buildings and attached housing units with individual exterior entrances.	R-2, Two-Family R-3, Multi-Family
Multi-Family Housing	Two-unit dwellings, townhouses. 4-, 6- and 8-unit buildings with individual exterior entrances, and all forms of attached housing with central corridors and interior entrances.	R-4, Multiple-Family
Retail	Businesses providing retail trade or services for individuals or businesses. Includes medical facilities.	MU, Downtown
Industrial and Utility	Office buildings, office-showroom, light industrial buildings and manufacturing-related warehousing in landscaped "campus" settings with hidden truck docks and limited outdoor storage.	LI, Light Industrial District
Institutional	City offices or facilities; cemeteries.	PSP, Public/Semi-Public
Park	City or County parks	PSP, Public/Semi-Public
Private open space	Private property that is held undeveloped, usually for ponding as steep slopes or for conservation.	Any zoning district.

Public/Semi-Public (P/SP)

Land Use Description: This designation accounts for areas that are institutional in nature. This designation is also allowed as a permitted use in the Mixed-Use and Downtown designations. These facilities generally include public parks, libraries, schools and cultural facilities.

The City will officially adopt and follow the land use pattern shown by Figure 2-5. The categories on the Land Use Guide Plan are described on the previous page. Only a few minor changes from the 1998 land use plan map are proposed.

The Land Use Guide Plan is a guide for the City's zoning ordinance and zoning map, which is the official regulating document for land use. The Land Use Guide Plan should be used in conjunction with the policies from this chapter; the Transportation, Water Resources and Parks Plans to guide future development of the City. Any land use changes will be typically initiated by the property owner and not the City. Table 2-3 on page 2-14 provides a more detailed description of each category along with criteria to evaluate the appropriateness of specific uses relative to each land use category.

Special Area Plans

The following three pages outline the City's vision for special areas intended for redevelopment: The Gateway District, the Downtown District, and the Budd/Highway 12 District.

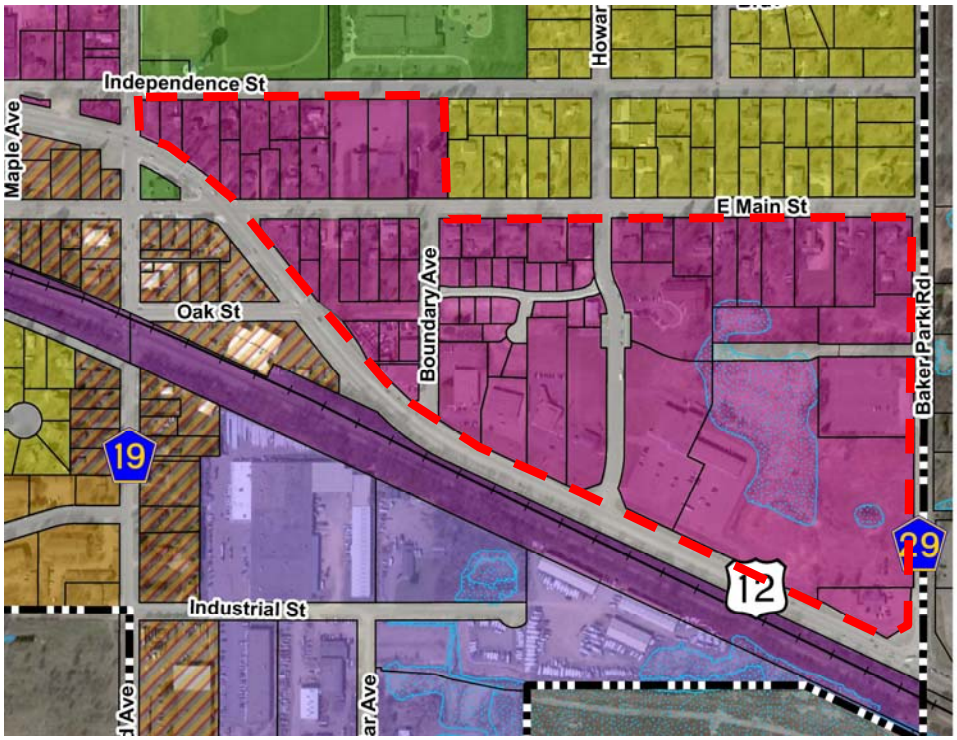
The Gateway District

The "Gateway" District guides roughly 57 acres of land north of Highway 12 and west of Baker Park Road/County Road 19/29. Within the Gateway District, the City envisions extensive redevelopment utilizing an array of land uses including residential, office, retail, and other commercial services. A study by Maxfield Research also indicated that the best types of land uses for this area would be retail, professional offices and services and multi-family housing.

To encourage redevelopment, zoning within the Gateway District will be flexible thereby allowing market conditions to determine the mix of uses built on any given parcel of land. Design standards for the City that will focus on the Gateway District will play a larger role in the final development design. Specifically, the standards will promote a compact and sustainable development, reduced auto trips

between uses, increase connectivity, and pedestrian movement. The City will track development of the Gateway District over time to ensure an ultimate residential density at a minimum of 5.0 units per acre (on approximately 43.28 mixed-use acres) is achieved with a desire for multi-family development. Most of this development will occur in the mixed-use zoning areas which will promote medium to high density housing. As part of this plan, retaining existing core businesses would be a major objective as well. A connection to Baker Park Reserve will also be a priority.

Figure 2-8 Gateway District



The Downtown District

The historic downtown is envisioned to be reborn as a new Town Centre for the City of Maple Plain and a new public parking area. New form-based zoning regulations will combine retail, service, commercial, and institutional uses with office and/or residential use in the same building or on the same site.

Allowing for mixed-uses in this area will serve to create a vibrant pedestrian-oriented environment through complementary activities and public amenities together in one location. New development will be required to fit into the existing character of the area in terms of building mass, design and proximity to the street;

however, allowances for construction up to 2.5 stories with standards for maximum height by zoning requirements will be provided as an incentive for redevelopment.

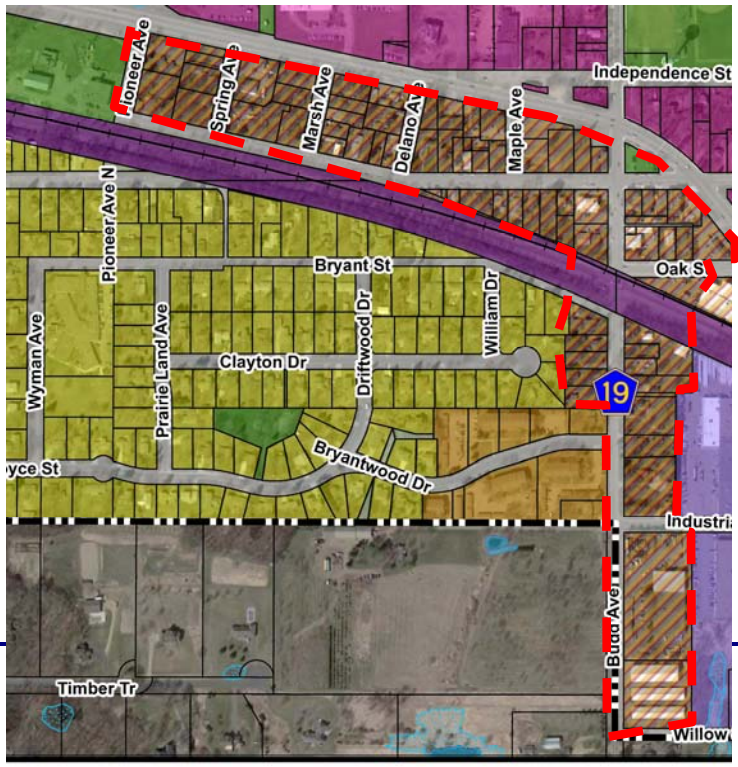
Integration of uses in the Downtown district can be done vertically in a single structure (with upper floors being used for office or residential use and the ground floor for retail or service uses), or horizontally (with retail or service uses fronting the street and office uses or attached/multifamily residential behind).

A desired component of the Downtown District will be the establishment of a new institutional center for the City including space for a new City Hall, Post Office, and Hennepin County Library.

Establishing a campus for these civic institutions amongst the desired mixed-uses downtown will ensure citizens are drawn to this area for a variety of reasons. Incorporating areas of open space (i.e. public squares) amongst the redevelopment and applying special attention to facilitating easy pedestrian movements in the district will also play a strong role in strengthening the downtown.

To ensure the Downtown District is connected to the greater city, the City will work with MnDOT and the BNSF railroad to facilitate good pedestrian and vehicular movements through their respective rights-of-way, including the possibility of a pedestrian bridge connecting the Gateway and Downtown areas.

Figure 2-9 Downtown District

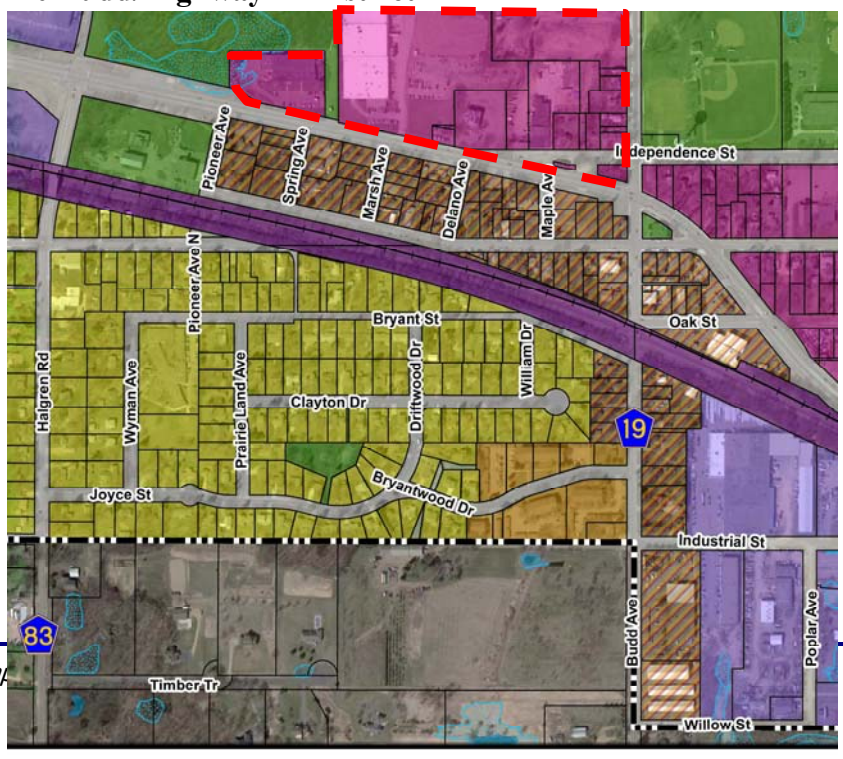


Budd/Highway 12 District

Like the Gateway District, the Budd/Highway 12 District is envisioned as an area of mixed-use development incorporating a variety of land use types other than industrial development. Zoning within this district will allow a broad array of uses to encourage redevelopment that makes sense for the property and existing market conditions at the time of development. Residential uses between 5.0 and 20.0 units per acre will also be allowed and encouraged in this district (over approximately 24.35 acres), especially adjacent to or near the existing higher density residential uses on the north side near Industrial Street and Budd Avenue.

The main distinction between the Budd/Highway 12 District and the Gateway District is that this redevelopment area has a stronger chance of larger retail projects as well as the encouragement of higher densities in residential development including condominiums. As with the other planned redevelopment areas, the City will encourage a compact/sustainable development pattern in this area with good connectivity to the other areas of the City. All redevelopment should be sensitive to the design of the downtown area and all larger retail developments should be set back from Highway 12 to further encourage a separation from the design of the downtown area. Open spaces and other design features will be strategically used in this District to provide buffers.

Figure 2-10 Budd/Highway 12 District



Housing Analysis

This section of the land use plan describes Maple Plain's existing housing stock, its current and future housing needs, and actions the City will take to address those needs. Elements of this section are:

- Profile of existing housing
- Current and future housing needs

Profile of Current Housing

Housing Composition

The City's mixture of housing types is fairly similar to that which is found throughout the seven-county metropolitan area. The majority of owner-occupied housing is in the form of single-family detached units, and most renter occupied homes are found in buildings containing 10 or more units. One unique aspect of the City is the number of owner-occupied units (60%) as compared to the number of rental occupied units (40%). This breakdown in housing shows that the City has a wide range of housing types within the community.

Maple Plain has seen a slight reduction in its overall housing stock since 2000, and currently has a total of 778 units serving the community. Vacancy rates in Maple Plain (3.8%) are slightly lower than the metropolitan average of 2.8%, and the median home value in Maple Plain is ($275,300) as compared to the metropolitan area median home value of ($235,000).

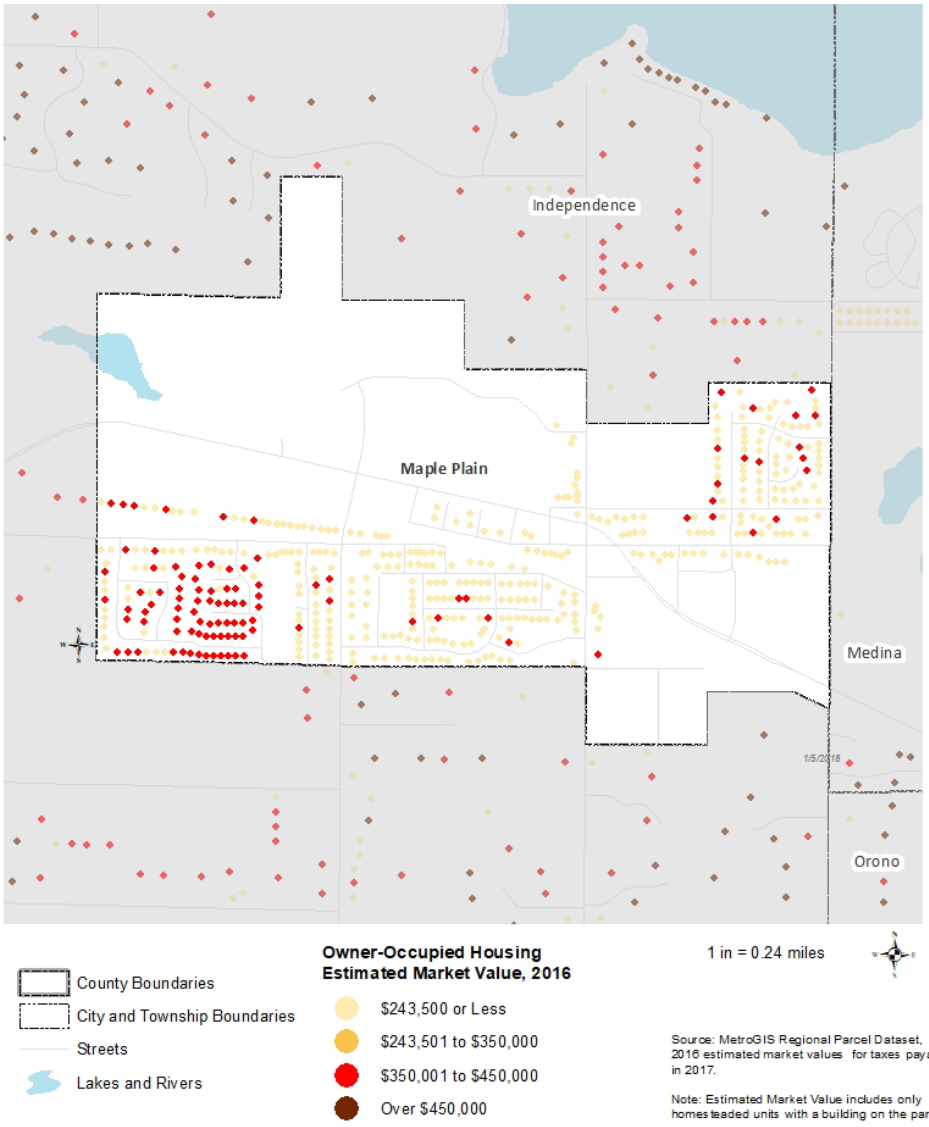
These and other statistics are presented by Table 2-6.

Table 2-6: Housing Composition

	Maple Plain	Percent
OCCUPANCY STATUS		
Total housing units	**778**	**100**
-- Occupied housing units	743	95.5
> Owner-occupied	*466*	59.8
> Renter-occupied	312	*40.1*
-- Vacant housing units	30	3.8
UNITS IN STRUCTURE		
Owner-occupied units	466	**100**
-- 1 (detached)	450	96.5
-- 1 (attached)	1	0.2
-- 2	11	2.3
-- 3 or 4	2	0.4
-- 5 or more	2	0.4
-- Mobile home	0	0
Renter-occupied units	**312**	**100**
-- 1 (detached)	56	17.9
-- 1 (attached)	5	2
-- 2	4	2
-- 3 or 4	11	3
-- 5 to 9	21	7
-- 10 to 19	79	25.3
-- 20 to 49	128	41
-- 50 or more	8	2.5
-- Mobile home	0	0
YEAR STRUCTURE BUILT		
Owner-occupied units	**466**	**100**
Median	1969	
Renter-occupied units	**312**	**100**
Median	1980	

Data from the 2010 US Census and Metropolitan Council

Figure 2-10 Owner-Occupied Housing by Estimated Market Value



Metropolitan Council

Housing Conditions

Physical housing conditions in Maple Plain are generally good with minor amounts of deferred maintenance and very little severe deterioration. The median age of owner-occupied units is approximately 39 years, while rental units have a median age of 28 years. Both categories of housing are average in terms of housing age and, thus, neither has reached the point where major renovation is needed. Furthermore, 80% of owner-occupied households in Maple Plain pay less than 30% of their income for their housing which has enabled a majority of residents to maintain their properties adequately.

Age Distribution of Householders

A major consideration for the housing stock is the age distribution of the population. Nearly half of the population of Maple Plain (64%) is of working age between 18 and 55 years which is consistent with the average found throughout the Twin Cities Metropolitan area. The demographics of the young and elderly are also very consistent with regional averages. Based on these findings, Maple Plain is not in danger of significant demographic turnover that may bring significant effects (either positive or negative) on schools, parks, traffic, shopping, civic organizations and social services.

It should be noted that the most rapidly growing demographics in Maple Plain included the age ranges of 45 to 54, and 55 to 64; while the largest decreases were seen in the age ranges from 22 to 24 and 25 to 34. It is anticipated that this trend will continue and the need for senior housing will continue to increase in the City. To address this issue the City has been working on the development of a new senior independent and assisted care housing facility in the Gateway District.

Housing Assistance Programs

The City of Maple Plain does not administer any housing assistance programs itself. Rather, the City will maintain information on programs available to citizens through Hennepin County, the Twin Cities Metropolitan Council and private non-profit housing development corporations. Those programs address:

- Rent assistance
- Housing rehabilitation
- First-time home buyer assistance
- Rental housing development.

Current and Future Housing Needs

Housing Affordability

Maple Plain is doing its fair share to provide housing that is affordable and suited to people in all stages of the life cycle according to data compiled by the Twin Cities Metropolitan Council (see Table 2-7). While Maple Plain is currently not within the regional benchmark range for a fully-developed city in terms of affordability for owner occupied units, it has already reached its specific affordability goal negotiated with the Metropolitan Council. Also note that Maple Plain is currently well above the regional benchmark range for affordable rental units and has met its goals for both life cycle housing and density requirements.

According to a study by Maxfield Research, Maple Plain is lacking in a diversity of transitional housing. The highest need appears to be multi-family housing both at affordable rates as well as market priced larger units. The City will encourage this type of housing in all redevelopment projects, but especially in the Gateway District.

Table 2-7: Affordable Housing Need Allocation

At or Below 30 AMI	15 Units
From 31 to 50 AMI	4 Units
From 51 to 80 AMI	9 Units
At or Below 30 AMI	28 Units

AMI = Area Median Income
Source: Metropolitan Council

Future Affordable Housing Needs

To ensure that each community is doing its share to provide affordable housing, the Metropolitan Council has forecasted affordable housing needs for all cities and townships within the Twin cities Metropolitan Area. The housing plan element of local comprehensive plans is required to reflect the allocated portion of the forecasted demand for affordable housing. The City's share of this allocation is 28 affordable units. The City is committed to doing its part as opportunities arise to meet this regional requirement for affordable housing.

Preferably such units would be located near existing and planned transit and employment opportunity centers; however, it is recognized that such opportunities are limited in the community. Planned redevelopment of existing commercial areas within the city to multi-family and mixed-use designations provides the best avenue for achieving the mandated goal. The City will use a combination of zoning, tax increment financing (TIF) and other local and regional resources to encourage and realize the affordable housing goals. Other tools the City may use to encourage affordable housing include:

- *Zoning and land use planning incentives. The City will consider planned unit developments to achieve the flexibility needed (including increased densities in mixed-use revitalization areas) to meet its regional goals;*
- *Funding via the three grant programs/funds created through the Livable Communities Act (the Tax Base Revitalization Account, the Livable Communities Demonstration Account, and the Local Housing Incentive Account).*

Concentrations of Substandard Housing

The only notable examples of run-down housing in Maple Plain generally correspond with residential lots currently guided for commercial development. Because the value of the land on these parcels' rests with a future commercial use, it is not uncommon for homeowners to forgo normal maintenance in anticipation of the future use. The comprehensive plan study did not identify any neighborhoods or developments as a whole that would be considered "substandard." The City has a regular inspection program for both multi-family and single-family housing and enforces compliance with its building maintenance code on a complaint driven basis.

Energy Conservation, Solar Access and Sustainable Development

Solar Access

It is now required that local governments in the Metropolitan Area include an element for protection and development of access to direct sunlight for solar energy systems in the Comprehensive Plan. The rationale for including a solar access protection element in the Comprehensive Plan is to assure the availability of direct sunlight to solar energy systems. According to the Metropolitan Council, "a majority share of energy consumed in Minnesota is used for purposes that solar

energy could well serve such as space heating and cooling, domestic hot water heating and low-temperature industrial processes." Maple Plain is well-suited for solar energy utilization, since a majority of its streets run east-west, giving many houses a southern orientation. However, the City's extensive mature tree cover partially shades the typical house.

As the zoning and subdivision ordinances are updated, the City will review current policy and make efforts to protect solar access with the updated ordinances. The City can protect solar access on individual properties by:

- Requiring that builders of buildings two or more stories in height demonstrate that their proposals will not reduce winter solar access to the second story or roof of the adjacent building to the north. Solar access should be explicitly reviewed in each development

- Exempting solar collectors from height restrictions if necessary, provided that they do not block solar access to the adjacent building's roof.

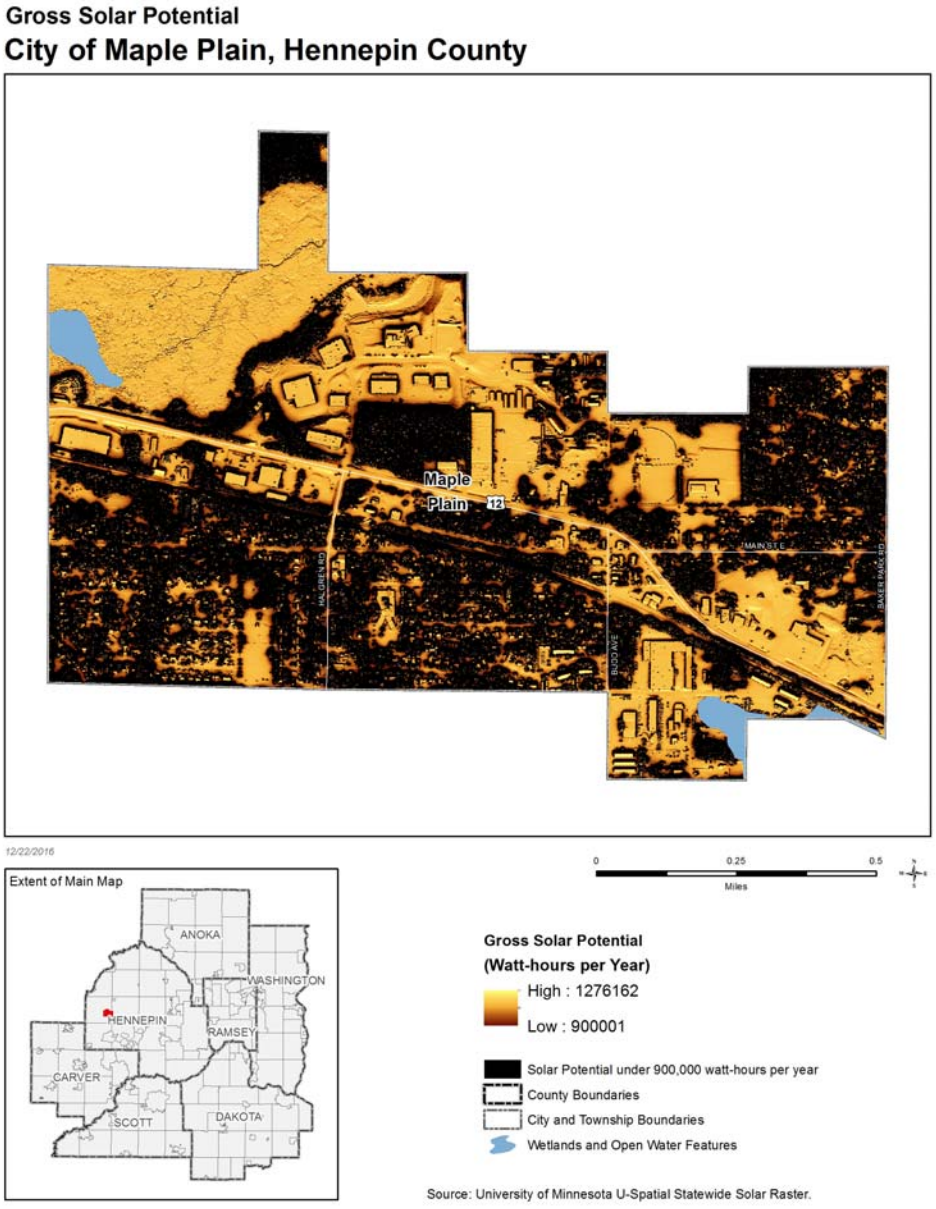
Table 2-8, Gross and Rooftop Solar Resource Calculations

1: Gross Potential (Mwh/year)	2. Rooftop Potential (Mwh/year)	3. Gross Generation Potential (Mwh/year)	4. Rooftop Generation Potential (Mwh/year)
1,475,186	176,175	147,518	17,617

The gross and potentials in columns 1 and 2 are expressed in megawatt hours per year (Mwh/year) and represent the gross potential resource before removing areas unsuitable for solar development or factors relating to efficiency of conversion. They are not intended to demonstrate the amount of solar likely to develop in the City.

The gross generation and rooftop generation potentials in columns 3 and 4 are estimates of how much electricity could be generated using existing technology and conversion factors; however, they do not consider building-specific structural limitations or other factors.

Figure 2-11, Gross Solar Potential



LEED-Certified Buildings and Minnesota GreenStar

In addition to protecting solar access, the City endorses the use of building design techniques that conform with the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™, the Minnesota Sustainable Design Guide (MSDG), or the Minnesota GreenStar program which all provide tools for the design, construction, and operation of high performance and environmentally

sustainable buildings and sites. These systems give building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED and MSDG promote a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. These systems provide a roadmap for measuring and documenting success for every building type and phase of a building's lifecycle.

Sustainable Development Practices

There is growing concern for the issue of sustainability – whether the Earth's resources will be able to meet the demands of a growing human population that has rising aspirations for consumption and quality of life, while maintaining the rich diversity of the natural environment or biosphere.

Patterns of human development - physical, social, and economic - affect sustainability at the local and the global level. City and regional planning is integrally related to defining how, where, and when human development occurs, which affects resource use. Planners can therefore play a crucial role in improving the sustainability of communities and the resources that support them.

There are several dimensions to the "sustainability" issue:

- We want to sustain communities as good places to live, and that offer economic and other opportunities to their inhabitants.
- We want to sustain the values of our society – things like individual liberty and democracy.
- We want to sustain the biodiversity of the natural environment, both for the contribution that it makes to the quality of human life and for its own inherent value.
- We want to sustain the ability of natural systems to provide the life-supporting "services" that are rarely counted by economists, but which have recently been estimated to be worth nearly as much as total gross human economic product.

A sustainable community is one that is consistent with all of these dimensions of sustainability; for more information on Maple Plain's green aspirations, please refer to Chapter 7.

Historic Resources

Maple Plain has long recognized the importance of identifying and discussing the protection of its historic sites as they reflect the City's past and are a reminder of the community's small-town values. In particular, the following twelve sites have previously been identified as important to the community:

1. 5334 Main Street—built in the year 1901
2. 5364 Main Street—built in the year 1906
3. 5420 Main Street—built in the year 1890
4. 5485 Main Street—built in the year 1893
5. 5505 Main Street—built in the year 1900
6. Main Street: "The Creamery"
7. Main Street: Church
8. Main Street: Restaurant
9. Main Street: Retail
10. Main Street: Old Post Office/Library
11. State Highway 12: School
12. State Highway 12: Native American Burial Grounds

The City is committed to promoting the use of historic structures and sites for the education, pleasure, and welfare of the community. To that end, the treatment of historic sites will be taken into consideration as redevelopment projects come forward in all zoning districts. Developers may be asked to pay special attention to the treatment of historic sites by utilizing buffers, screening, or open spaces in a manner necessary to blend old and new. Design guidelines established for redevelopment efforts will take historic preservation into account, and may require special signage and other features to preserve a historic unifying theme throughout the community.

The 1st Bank of Maple Plain on Main Street East was built in 1905 and is currently being used as a residence.

Land Use Plan Goals and Policies

1. Maple Plain will focus on opportunities for redevelopment, selective infill, and enhancement of the City's image through public improvements and private design.

2. Allow flexibility in zoning ordinances that would provide opportunities to entice and enhance redevelopment.

3. Continue to enhance and promote The Downtown, The Gateway, and the Budd Avenue/Highway 12 Districts.

4. Review and assess existing design standards for the Mixed-Use zoning districts to ensure that they are relevant, achievable and represent the City's current vision for the community.

5. Retaining existing core businesses will be a major objective for the City.

6. In the Gateway District, the standards promote a compact and sustainable development that reduces auto trips between uses by increasing connectivity and pedestrian movement.

7. The Downtown District is envisioned as the Town Centre. The City will look at approving mixed-uses that will serve a vibrant pedestrian-oriented environment through complimentary activities and public amenities.

8. A desired component of the Downtown District is the establishment of a civic center for the City that includes a new city hall and county library along with a wide-array of mixed uses.

9. The City will work with MnDOT, the County and the BNSF railroad to facilitate good pedestrian movement throughout the community.

10. The City will encourage highway commercial in the Budd Avenue/Highway 12 District.

11. The City will maintain its affordability goals as prescribed by the Metropolitan Council.

12. The City will continue its regular inspection program for its housing stock.

13. The City will endorse the use of building design techniques that conform with the Leadership in Energy Design (LEED) and the Minnesota Sustainable Design Guide (MSDG) programs.

14. The City is committed to promoting the use of historic structures and sites for the education, pleasure and welfare of the community. To that end, the treatment of historic sites will be taken into consideration as redevelopment projects are reviewed.

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Transportation

The existing transportation system in the City consists of a combination of transportation modes and facilities including a planned network of roadways, from neighborhood based local streets to a regional principal arterial that bisects the community. The transportation plan provides a review of various transportation elements that meet the requirements of the Metropolitan Council. These transportation elements are discussed in this transportation plan. The most dominant element of the transportation plan involves the roadway system. Other elements reported on include transit, bicycling and walking, aviation, freight, roadway access management, traffic volumes, roadway functional classification and the status of U.S. Highway 12 roadway improvement planning.

Goals and Policies

The City of Maple Plain provides a transportation system that is intended to move people and goods through and within the City. The City of Maple Plain, working in conjunction with the State of Minnesota and Hennepin County, strives to plan the system for the future in order that transportation issues that can be forecasted can be planned for in the present. The preparation of City goals and policies is an important part of this 2040 Transportation Plan. These goals assist in the provision of an integrated multi-modal system that will serve the anticipated growth within Maple Plain.

The goals of the Transportation Plan that will aid in the guidance of the further development of the transportation system are as follows:

Existing Roadway Characteristics

The roadway system in Maple Plain is dominated by Highway 12. This 2-lane principal arterial passes through Maple Plain and provides a connection to the Minneapolis/St. Paul metropolitan area to the east and through west central Minnesota. All roadways in Maple Plain are 2-lane roadways.

The jurisdiction of roadways in Maple Plain consists of facilities controlled by the State of Minnesota, Hennepin County, and the City of Maple Plain. Refer to Figure 3-1 for illustrations on roadway jurisdiction within Maple Plain.

Traffic volume data for certain roadways in Maple Plain is available from traffic flow maps produced by the Minnesota Department of Transportation (MnDOT) and by Hennepin County. The latest available daily traffic volumes, shown as average annual daily traffic (AADT), is provided on Figure 3-2.

Socio-Economic Forecasts

The Metropolitan Council has provided the traffic assignment zone (TAZ) map for Maple Plain. The City is a part of one TAZ which also includes Independence. The TAZ is shown on Figure 3-3. The comprehensive plan is required to show the forecasts for the population, households and employment for the years 2020, 2030 and 2040. These values are derived from the land use plan data. Since Maple Plain's growth is contained in one TAZ, the Metropolitan Council population forecasts for 2020, 2030, and 2040 are listed in the land-use section of the comprehensive plan in Table 1-1and not repeated in this section. These forecasts are used by the Metropolitan Council to plan for its regional systems. Communities base their planning work on these forecasts.

The Metropolitan Council forecasts growth at appropriate densities for communities to protect the efficiency of wastewater, transportation, and other regional system investments and to help ensure the metropolitan area can accommodate its projected growth by the year 2040. However, given the nature of long-range forecasting, the Metropolitan Council will maintain an on-going dialogue with communities to consider any changes in growth trends or community expectations about growth that may have an impact on regional systems.

Projected Traffic Volumes

The daily traffic volumes of the major roadways have been projected to the year 2040. MnDOT assigns a 20-year growth factor by County. The latest 20-year factor for Hennepin County is 1.0, which translates to flat growth. From review of the Metropolitan Council travel demand model, the 2016 traffic counts by Hennepin County, and the 2015 traffic counts by MnDOT, and the City of Maple Plain future land use plan, the City is estimating a 1% growth factor to calculate the 2040 travel demand forecasts. The 2040 daily traffic volume forecasts allow an assessment of potential roadway capacity issues and are illustrated on Figure 3-2. Capacity issues are discussed in a later chapter of this transportation plan.

Functional Classification System

The functional classification of roadways provides guidelines for safe and efficient movement of people and goods within the City. Roads are categorized based upon the level of access and/or mobility provided.

Functional classification of a roadway system involves determining what function each roadway should be performing with regard to travel within and through the City. The intent of a functional classification system is the creation of a roadway hierarchy that collects and distributes traffic from local roadways and collectors to arterials in a safe and efficient manner. Such classification aids in determining appropriate roadway widths, speed limits, intersection control, design features, accessibility and maintenance priorities. Functional classification helps to ensure that non-transportation factors, such as land use and development, are taken into account in planning and design of the roadway system.

A balanced system is desired, yet not always attainable due to existing conditions and characteristics. The criteria of the functional classification system are intended to be guidelines and are to be applied when plans are developed for the construction or reconstruction of a given classified route. It can and does occur that different roadways with very similar design characteristics may have different functional classifications. Some roadways, for a short segment, may carry higher volumes than a roadway with a higher classification. Spacing guidelines may not follow recommendations for a variety of reasons such as topography, land use type and density, and environmental concerns.

The two major considerations in the classification of roadway networks are access and mobility. Mobility is of primary importance on arterials, thus limitation of access is a necessity. The primary function of a local roadway, however, is the

provision of access, which in turn limits mobility. The extent and degree of access control is a very important factor in the function of a roadway facility. The functional classification types utilized are dependent upon one another in order to provide a complete system of streets and highways. The relationship of functional classification with regard to traffic mobility and land access is shown on Figure 3-4.

A complete functional design system provides a series of distinct travel movements. Most trips exhibit six recognizable stages. These stages are as follows:

- Main movement
- Transition
- Distribution
- Collection
- Access
- Termination

As an example, Figure 3-5 depicts this hierarchy of movement by illustrating a hypothetical trip using a freeway, which comprises the main movement. When the vehicle leaves the freeway, the transition is the use of the freeway ramp at a reduced speed. The vehicle then enters the moderate speed arterial, the distribution function, to travel toward a neighborhood. From the arterial the vehicle enters a collection road.

A local access road then provides direct approach to the residence or termination point. Each of the six stages of the trip is handled by a facility designed specifically for that function. Speeds and volumes normally decrease as one travels through the six stages of movement.

It must be recognized that all intermediate facilities are not always needed for various trip types. The character of movement or service that is provided has a function, and these functions do not act independently. Thus, the travel categories, more movements, become consistent with function and the classification of that function.

The functional classification of roadways is shown on Figure 3-6. This system is based upon the regional system developed by the Metropolitan Council and the

system developed by Hennepin County. General characteristics of the system are described below.

Principal Arterials

Principal arterial roadways serve major activity centers, higher traffic volumes, longer trips and carry a higher proportion of total urbanized travel on a minimum of mileage. Along these facilities, access needs to be limited in order to preserve the ability of the roadway to accommodate the volumes and to maximize safety. Spacing varies from 2-3 miles for a fully developed area to 3-6 miles for a developing area. The management criteria require that a 40 mph average speed be achieved during peak traffic periods. The current speed limit in the downtown area of Maple Plain is 35 mph. Also, little or no direct land access should be allowed within an urban area. Grade separated intersections are required for freeways and highly desired for other principal arterial roadways. The only Principal Arterial in Maple Plain is U.S. Highway 12 that passes through the entire City.

Minor Arterials

Minor arterial roadways connect the urban service area to cities and towns inside and outside the region and generally service medium to short trips. Minor arterials may also provide an alternate route for congested principal arterial roadways. Minor arterials connect principal arterials, minor arterials, and collectors. The spacing ranges from ¼ to ¾ of a mile in metro centers to 1-2 miles in a developing area. The desired minimum average speed during peak traffic periods is 20 mph in fully developed areas and 30 mph in developing areas. The metropolitan highway system contains two classifications of minor arterials. These are "A" minor arterials and "B" minor arterials.

The emphasis for minor arterial roadways is on mobility rather than on land access. In urban areas, direct land access is generally restricted to concentrations of commercial/industrial land uses.

‘A’ Minor Arterials

‘A’ minor arterials have less emphasis on land access than ‘B’ minor arterials. This allows ‘A’ minor arterials to become eligible to compete for Federal funding. ‘A’ Minor Arterials are roadways that are of regional importance because they relieve, expand, or complement the principal arterial system. ‘A’ Minor Arterials are categorized into four types, consistent with Metropolitan Council guidelines:

- Relievers – Minor arterials that provide direct relief for metro highway traffic
- Expanders – Routes that provide a way to make connections between urban areas outside the I-494/I-694 beltway.
- Connectors – Roads that provide good, safe connections to and among communities at the edge of the urbanized area and in rural areas.
- Augmenters – Roadways that augment principal arterials within the I-494/I-694 beltway.

‘B’ Minor Arterials

The ‘B’ minor arterial roadways provide connections to surrounding cities. ‘B’ minor arterial roadways typically serve medium to long distance trips.

Minor arterial roadways in the City are as follows:

"A" Minor Connectors
County State Aid Highway 83 (Halgren Road)
County State Aid Highway 29/19 (on East City Border)

"B" Minor Arterial
County State Aid Highway 19 (Budd Avenue from Main Street South)

Collector Streets

Collector streets provide more land access than arterials and provide connections to arterials, although not in all cases. As is the case with any roadway system, there will always be exceptions to the planning guidelines that are used to classify a roadway system. Collectors serve a dual function of accommodating traffic and provision of more access to adjacent properties. Mobility and land access are equally important and direct land access should predominately be to development concentrations. Collector road spacing ranges from ¼ to ¾ miles in a fully developed area to ½ to 1 miles in a developing area. Collectors are broken down further into major and minor collectors.

Major Collectors

Major collectors generally connect to minor arterials and serve shorter trips within the City. These roads supplement the arterial system in that mobility is slightly emphasized over access. County State Aid Highway 19 (Main Street from Budd Avenue East) is a major collector.

Minor Collectors

Minor collectors provide the connection between neighborhoods and commercial/industrial areas and the major collector/minor arterial system. Access is slightly emphasized over mobility in minor collectors.

Local Streets

The lowest classification of roadways is the local roadway where access is provided with much less concern for control but land service is paramount. Spacing for local streets is as needed to access land uses. Local roadways generally have lower speed limits in urban areas and normally serve short trips. Local streets will connect with some minor arterials but generally connect to collectors and other local streets. The development of local streets will be guided by the location of the existing and proposed minor arterials and collectors as well as by development and the expansion of local utilities.

Roadway Capacity/Right of Way Needs

The year 2040 traffic projections are used as a planning tool to help test the ability of a roadway to accommodate future volumes. In addition to the number of lanes provided, the daily capacity of any individual roadway is based upon many factors. Number of access points per mile, number of signalized intersections per mile, percentage of truck traffic, and the physical grade of the roadway are examples of some of these factors. However, for planning purposes, a generalized ADT threshold for roadways is used. Table 3-2 shows the generalized ADT volume thresholds for a roadway type and number of lanes in terms of level of service. Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels, LOS A to LOS F, are generally used for traffic analysis. LOS A is the best with free flow conditions and little to no delay. LOS F is the worst with congestion, long delays, and forced flow. Table 3-3 provides a brief description of Levels of Service.

Table 3-2 - Generalized Average Daily Traffic Volume Thresholds

Facility Type	Maximum ADT Volume at Level of Service[1]				
	A	B	C	D[2]	E
2-Lane Roadway –					
Without Turn Lanes	3,000	4,500	6,500	8,500	10,000
With R Turn Lanes	4,750	7,200	10,300	13,500	15,900
With L Turn Lanes[3]	5,250	7,900	11,400	14,900	17,500
With L and R Turn Lanes[3]	7,500	11,250	16,250	21,250	25,000

[1] ADT Volumes above the LOS E maximum threshold would be considered LOS F.

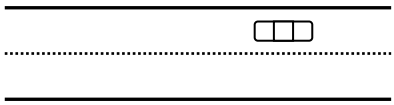
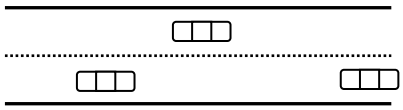
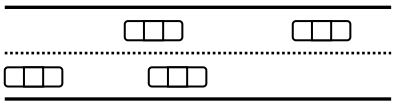
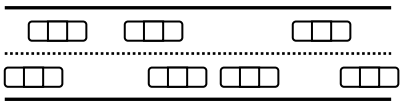
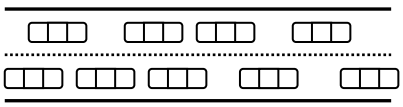
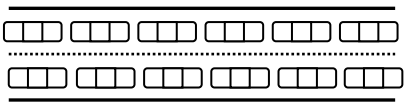
[2] LOS D is usually the lowest acceptable LOS allowed by most agencies within the metro area.

[3] Also considered the planning capacity for a 3-lane roadway (one through lane in each direction with a center, two-way left turn lane) without or with a right turn lane.

Note: Approximate values based upon several assumptions:

- Capacity assumptions per lane
- Peak hour percentages
- Directional orientation
- ¼ mile signal spacing

Table 3-3 - Level of Service Description

Level of Service	Description	
A	Lower volumes Little to no delay Unimpeded movement	
B	Minor delays Reasonably unimpeded operation Slightly restricted movement	
C	Stable conditions More restricted movements Speeds controlled by higher volumes	
D	Higher density traffic Volumes near capacity Some noticeable congestion	
E	At capacity Major delays are common Lower speeds	
F	Failing condition Significant delays Very low speeds with stop and go traffic	

It is important to remember that these tables are for planning purposes only.

The review of the future planning volumes on the major roadway systems as tested against values show in Table 3-2 indicates the only roadway that would appear to be in need of future improvements would be U.S. Highway 12. The potential volumes of 22,900 vehicles per day would cause a 2 or 3 lane facility to operate at level of service E.

ACCESS MANAGEMENT

The management of thoroughfare access along roadway systems, particularly arterial and collector roadways, is a very important component of maximizing the capacity and decreasing the crash potential along those roadway facilities. As mentioned in a previous section, arterial roadways have a function of accommodating larger volumes of traffic and often at higher speeds. Therefore, access to such facilities must be limited in order to protect the integrity of the arterial function. Collector roadways provide a link from local streets to arterial roadways and are designed to provide more access to local land uses since the volumes and speeds are often lesser than arterial roadways.

MnDOT reports that studies have shown that as the density of access increases, whether public or private, the traffic carrying capacity of the roadway decreases and the vehicular crash rate increases. Well-designed access to commercial properties supports long-term economic vitality.

As with many transportation related decisions, land use activity and planning is an integral part of creation of a safe and efficient roadway system. Land use decisions have a major impact on the access conditions along the roadway system. Every land use plan amendment, subdivision, rezoning, conditional use permit, or site plan involves access and creates potential impact to the efficiency of the transportation system. Properties have access rights and good design will minimize the deleterious effect upon the roadway system. Access management is a combination of good land use planning and effective design of access to property.

The granting of access in Maple Plain is shared by the State, the County and the City, with each having the permitting process responsibility over roadways under their control. Access control guidelines are used to preserve public investment in the roadway system and to inform developers for plan preparation. The guidelines

balance the public interest (mobility) with the interests of property owners (access).

Hennepin County's Access Spacing Guidelines should be followed on all roads that are under the County's jurisdiction. MnDOT and Hennepin County's access guidelines can be found in the Tables 3-4 through 3-7 below.

Table 3-4: Summary of MnDOT Public Street Spacing Access Guidelines

Functional Classification	Facility Type or Community Designation**	Public Street Spacing		Signal Spacing
		Primary Full-Movement Intersection	Secondary Intersection	
Principal Arterial	Interstate Freeway	Interchange Access Only		None
	Non-Interstate Freeway	Interchange Access Only		None
	Rural	1 mile	1/2 mile	Only at Primary Intersections
	Suburban	1/2 mile	1/4 mile	Only at Primary Intersections
	Urban	300-600 feet, dependent on block length		1/4 mile
Minor Arterial	Rural	1/2 mile	1/4 mile	Only at Primary Intersections
	Suburban	1/4 mile	1/8 mile	Only at Primary Intersections
	Urban	300-600 feet, dependent on block length		
Collector	Rural	1/2 mile	1/4 mile	Only at Primary Intersections
	Suburban	1/8 mile	Not Applicable	1/4 mile
	Urban	300-600 feet, dependent on block length		1/8 mile

* This table is a summary of MnDOT Access Guidance for the Metropolitan Area. This chart does not reflect all the MnDOT guidance. Agencies should work with MnDOT, the appropriate county highway authority, and the local land use authority when planning new or modified access.

**Community Designations are from Thrive MSP 2040, they are not MnDOT designations.

Hennepin County Access Spacing Guidelines

Hennepin County access spacing guidelines were developed for both urban and rural settings. The access spacing guidelines are just that, guidelines. Existing constraints and pre-existing conditions may limit full compliance with the guidelines. Special considerations will be taken into account on a case-by-case basis. The guidelines developed for Hennepin County are based on 20-year future forecasted average daily traffic (ADT) volumes for minor arterial roadways. This allows for the spacing to balance the mobility and access based on operations. This also allows the roadway's function to change based on growth expected in the community. The Hennepin County access spacing guidelines are shown in Table 3-6 for urban areas and Table 3-6 for rural areas.

Table 3-6 - Hennepin County Access Spacing Guidelines – Urban

Access Type	Movements Allowed	Urban and Urbanizing Arterial		
		Undivided	Divided	Collector
Single family residential driveway or farm field entrance	Full movements allowed	Not allowed	Not allowed	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	1/16 mile (330 feet)
Low Volume Driveway (less than or equal to 500 trips per day)	Full movements allowed	Not allowed	Not allowed	1/8 mile (660 feet)
	Limited access	Not allowed	1/8 mile (660 feet)	1/16 mile (330 feet)
High Volume Driveway (greater than 500 trips per day)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	1/8 mile (660 feet)	Not allowed
Low Volume Public Street (less than or equal to 2,500 ADT)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	1/8 mile (660 feet)	Not allowed
High Volume Public Street (greater than 2,500 ADT)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)
	Limited access	Not allowed	1/8 mile (660 feet)	Not allowed

Table 3-5 - Hennepin County Access Spacing Guidelines - Rural

Access Type	Movements Allowed	Rural Arterial		
		Greater than 7,500 ADT	Less than 7,500 ADT	Collector
Single family residential driveway or farm field entrance	Full movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed
Low Volume Driveway (less than or equal to 500 trips per day)	Full movements allowed	1/4 mile (1,320 feet)	1/8 mile (660 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed
High Volume Driveway (greater than 500 trips per day)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed
Low Volume Public Street (less than or equal to 2,500 ADT)	Full movements allowed	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)	1/8 mile (660 feet)
	Limited access	Not allowed	Not allowed	Not allowed
High Volume Public Street (greater than 2,500 ADT)	Full movements allowed	1/2 mile (2,640 feet)	1/4 mile (1,320 feet)	1/4 mile (1,320 feet)
	Limited access	Not allowed	Not allowed	Not allowed

Hennepin County access spacing guidelines are being incorporated into the County's review process. Review of new plat proposals will include the monitoring and managing of the access spacing such as:

- Orientating access to adjacent collector streets or interior local streets rather than to the county road.
- Consolidating driveway access where possible to reduce conflicts.
- Suggesting modifications to internal site circulation designs to reduce and relocate proposed access points, and minimize the impact on the county road.
- Limiting access to partial movements through channelization to reduce vehicular conflicts.

Maple Plain Access Spacing Guidelines

For other roads within the City, a set of access spacing guidelines has been prepared which is intended for use in the access permitting process. The guidelines are presented for functionally classified arterial and collector roadways without reference to the jurisdiction over these roadways. The basic references for the spacing guidelines for city access guidelines are presented in Table 3-7, which follows. The stated values are meant to be "minimum" values. Some existing connections, both public and private, may not meet these guidelines. It is also recognized that access may need to be granted which cannot adhere to these guidelines due to various circumstances.

Table 3-7 - City Access Spacing Guidelines

Functional Class	Median Treatment	Existing & Proposed Land Use	Typical Posted Speed (mph)	Full Median Opening Spacing (miles)	Minimum Signal Spacing (miles)	Spacing Between (feet)
Minor Arterial	Divided	Rural Urban Urban Core	55 ≥40 <40	½ ½ ¼	½ ½ ¼	820 490 275
	Undivided	Rural Urban Urban Core	55 ≥40 <40	NA NA NA	½ ½ ¼	820 490 350
Collector	Divided	Urban Urban Core	≥40 <40	¼ 1/8	¼ 1/8	435 275
	Undivided	Rural Urban Urban Core	55 ≥40 <40	NA NA NA	½ ¼ 1/8	585 435 310
Other County Roads	Undivided	Rural Urban	≥40 <40	NA NA	½ ¼	550 400

NA – Not Applicable

[1] Distances are based upon spacing between connections (major roads, local public streets, and private driveways). Distances are minimum and greater spacing is beneficial.

Transit

Demand for transit services varies throughout different regions. To represent these various demands, Met Council has divided the region into five districts called Transit Market areas. These Transit Market areas represent different levels of potential transit demand by accounting for differences in development density, urban form, and demographics. Maple Plain is in Market Area V.

Existing Transit Service

Metro Transit is the regional transit provider for the Minneapolis-Saint Paul metropolitan area. Metro Transit operates fixed-route bus services, park-and-ride facilities, and regional commuter rail. Metro Transit currently operates fixed route service, metro vanpool, and metro link services within Maple Plain. Private transportation services are limited to various taxicab companies which service a variety of locations within the Minneapolis/St. Paul Metropolitan region.

Fixed-route services include only peak period express bus service operated by Metro Transit on route 674 to Downtown Minneapolis. This route is only available during the morning and evening commute times on weekdays. Routes depart from the Maple Plain Park and Ride located on the west side of Baker Park Road between Main Street East and US Highway 12. Limited reverse commute service is offered on two buses a day.

Metro Vanpool is a regional program subsidized by the Metropolitan Council to provide additional transportation options for those who do not live within close proximity to Metro Transit fixed-route services. Metro Vanpool provides 7, 9, 12, or 15 person vans, depending on individual needs, to a primary volunteer driver who drives and coordinates services for others carpooling to the same general area. The lease of the van includes insurance, maintenance, repairs, 24-hour roadside assistance, and free ridership for the primary driver.

Metro Mobility provides demand-responsive transit service to persons unable to ride fixed-route services due to a disability. Eligibility is determined by Americans with Disabilities Act (ADA) guidelines and offers door to door service. Transit Link, previously known as Dial-a-Ride, is a service available for rides which cannot be accommodated by regular fixed-route transit services. Riders are asked to call ahead to reserve trips one week in advance. In general, a trip through Transit Link is not eligible if it starts and ends within ¼ mile of a transit stop in winter, or ½ mile of a transit stop in summer. This service is available weekdays from 6am to 7pm.

Future Transit Service Improvements

Maple Plain is currently in discussions with government agencies related to relocation of the Park and Ride as part of development in the Gateway area of the City located north of US Highway 12 and between Baker Park Road and Howard Avenue.

Freight

There is one commercial rail lines operating within the City of Maple Plain. The Burlington Northern and Santa Fe Railroad runs east and west through the City. At this time, the railway functions primarily for freight transportation. Met Council does not list Maple Plain as having any freight terminals within the city.

The existing rail crossing is located along Budd Avenue (County Road 19). The crossing is controlled with crossing lights, arms, or signals. The majority of land uses and zoning surrounding the rail line are commercial, industrial, and residential land use. Care should be taken in the future to protect the interest of all adjoining property owners.

Heavy commercial trucking vehicle traffic is shown on Figure 3-2.

Aviation

There are currently no existing or planned aviation facilities within Maple Plain. The airspace protection is for potential hazards to air navigation including electronic interference. City ordinances need to require proper notification to Federal and State agencies about activities that could potentially interfere with air navigation, including height of structures.

Existing building structures within the City of Maple Plain are currently less than 200 feet above the ground. According to both the Federal Aviation Administration (FAA) and MnDOT Aeronautics safety standards, any applicant who proposes to construct a structure 200 feet above the ground level must get appropriate approval. If a structure over 200 feet is proposed, the City of Maple Plain will notify both organizations.

U.S. Highway 12 Improvement Planning

A major transportation issue in Maple Plain is the status of improvement planning of U.S. Highway 12 through the City. Paramount in that overall issue is the future lane needs and the access to/from the highway.

The future volume projections indicate that there could well be a need for a facility that needs to be improved at some future time. Presently, U.S. Highway 12 contains two thru lanes with left and right turn lanes at selected locations. The City of Maple Plain has been desirous of the development of a plan that improves traffic operations along the corridor and at the intersection of U.S. Highway 12 and Main Street East. A high intensity activated crosswalk (HAWK)signal was added between Budd Avenue and Main Street East along U.S. Highway 12 to improve the north-south access to U.S. Highway 12 and provide a more safe crossing of U.S. Highway 12 for pedestrians and bicyclists. Additionally, access to existing streets and private business access is highly important in future planning along the corridor.

MnDOT is willing to help in the future planning of this corridor. Planning for the future will take time and study. Additionally, the appropriate studies will require finances to become available. At the present time, the City has met with both MNDOT and Hennepin County to discuss redevelopment in the area of Budd Avenue and Main Street East. Items discussed include closing of Budd Avenue to the south of U.S. Highway 12, placing a signalized intersection at Main Street East and U.S. Highway 12, eliminating the Hawk Signal, rerouting CSAH 19 from Main Street East to Oak Street, turn-back of Main Street East from Hennepin County to the City of Maple Plain, and various intersection improvements. Additional study of the corridor and these options are being discussed.

To help further future planning, Figure 3-8 has been been developed for the discussions with MnDOT and Hennepin County. This is conceptual and intended to be a starting point of the future study processes. The City and affected stakeholders need to be active in the future studies. The concept shown on Figures 3-8 should not be considered as recommendations, only as concept for future evaluation. There are other potential improvements scenarios that could be developed as well.

US 12 Road Safety Audit:Technical Report

The above referenced safety audit was completed in September 2015, and West Hennepin Public Safety Department, the City's safety department, participated in

the audit. The audit identified short-term, medium-term, and long-term solutions along portions of the U.S. Highway 12 corridor.

The City has been active in the Highway 12 Safety Coalition that was started in 2014. The City will continue to work with MnDOT involving corridor improvements. The affected stakeholders in the City must be a part of the studies and deliberations. The improvements to the corridor must give strong consideration to highway safety, beautification, traffic calming, and sustainability.

Figure 3-1

Roadway Jurisdiction

City of Maple Plain

N

0 600 1,200

Feet

State of Minnesota

Hennepin County

Source:
Hennepin County 2017
City of Maple Plain 2018

Stantec

10/25/2018

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Figure 3-2

Traffic Volumes

City of Maple Plain

N

0 600 1,200

Feet

2,400 Existing 2015/2016 Traffic Volume (AADT)

3,050 Projected 2040 Traffic Volume (AADT)

990 Existing 2017 Heavy Commercial Traffic Route amd Volume (HCAADT)

Source:
Volumes are 2015, 2016, and 2017 from MNDOT and Hennepin County Traffic Flow Maps

Stantec

10/25/2018

Pagenkopf Rd
Heritage Tr
Budd St
Lakeshore Dr
Perkinsville Rd
Pioneer Creek Dr
19
Gladview La
Drake St
Howard Ave
Perkins La
Bradford St
7,110
5,600
990
21,300
16,800
12
Pioneer Ave
Spring Ave
Marsh Ave
Delano Ave
22,900
18,000
Independence St
3,050
2,400
E Main St
1,050
Oak St
Boundary Ave
Baker Park Rd
W Main St
Parkview Rd
Three Oaks Ave
Henry St
Amy La
Meadow La
Maple Ridge Dr
Rainbow Ave
Halgren Rd
4,130
3,250
Wyman Ave
Pioneer Ave N
Prairie Land Ave
Bryant St
Clayton Dr
William Dr
Bryantwood Dr
Joyce St
5,970
4,700
29
Industrial St
Budd Ave
Poplar Ave
3,170
2,500
83
Timber Tr
Willow St

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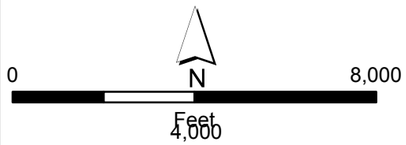
Figure 3-3

Traffic Assignment Zones

City of Maple Plain



Greenfield 808

Corcoran 807

Franklin WR45

Loretto

Delano

WR46

Medina 639

Independence 638

Maple Plain

Franklin WR47

647

Orono 644

Watertown 126

Minnetrista 636

635

Maple Plain

TAZ Boundary

Source:
Metropolitan Council

Stantec

10/25/2018

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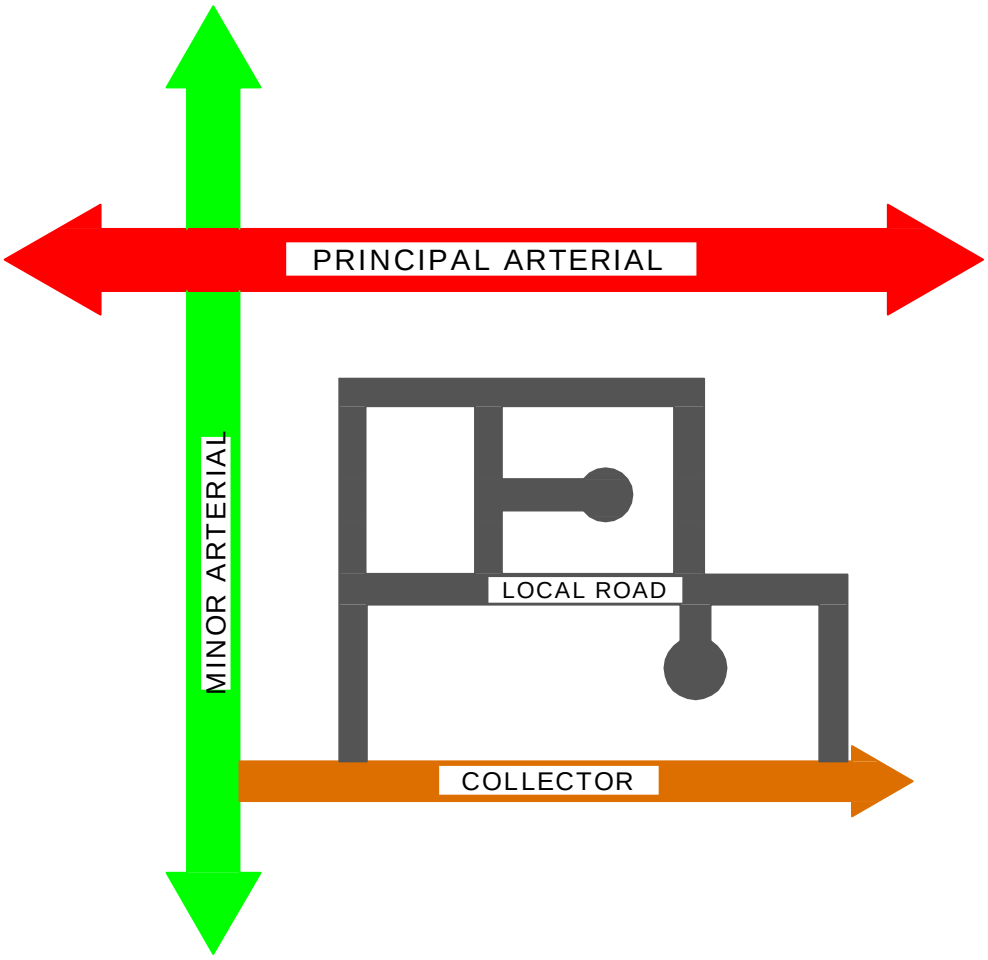

ROADWAY NETWORK CLASSIFICATION

BASED ON:

MOBILITY - PRIMARY IMPORTANCE ON ARTERIALS
- IMPROVES WITH LIMITING ACCESS

ACCESS - PRIMARY IMPORTANCE ON LOCAL ROADS
- INCREASED ACCESS LIMITS MOBILITY
- EXTENT & DEGREE IS AN IMPORTANT FACTOR IN THE FUNCTION OF A ROADWAY FACILITY

FUNCTIONAL CLASSIFICATION TYPES UTILIZED DEPEND ON ONE ANOTHER TO PROVIDE A COMPLETE SYSTEM

GOAL: BALANCE MOBILITY AND SAFETY

PROPORTION OF SERVICE

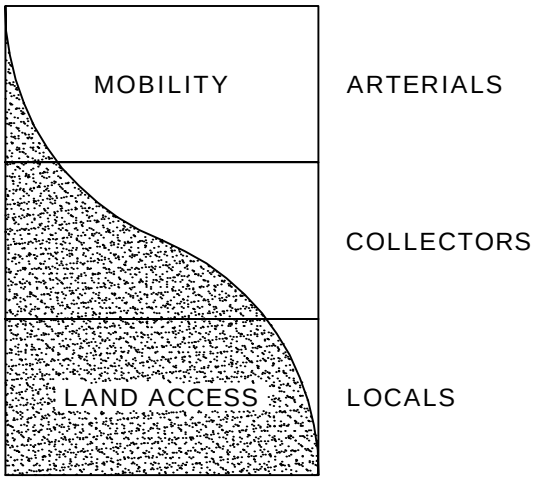

FIGURE 3-4

FUNCTIONAL CLASSIFICATION RELATIONSHIP
CITY OF MAPLE PLAIN

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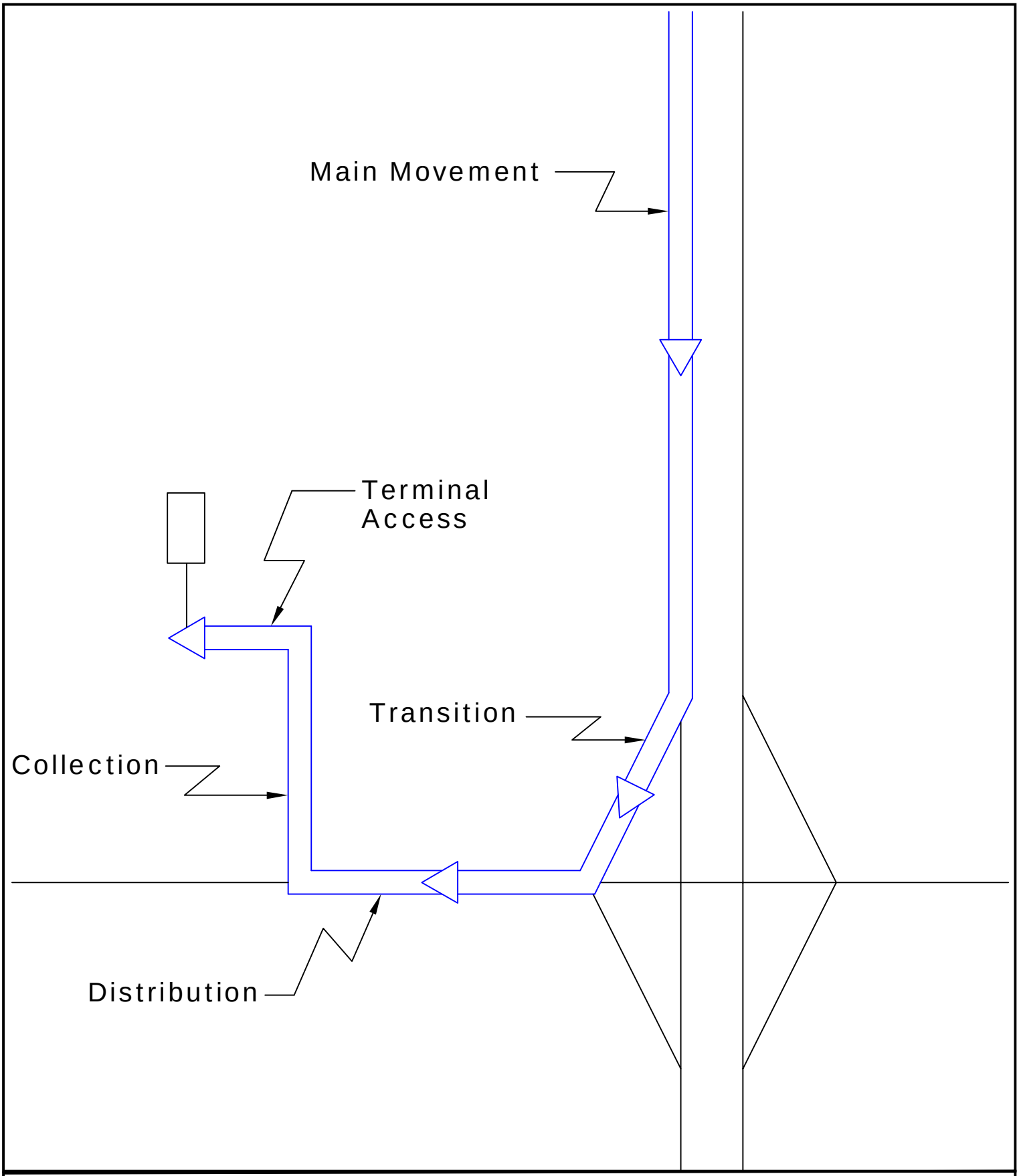

FIGURE 3-5

HIERARCHY OF MOVEMENT
CITY OF MAPLE PLAIN

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Figure 3-6

Functional Classification of Roadways

City of Maple Plain

N

0 600 1,200

Feet

- Principal Arterial
- A Minor Connector
- B Minor
- Major - Collector
- Minor - Collector

Source:
Hennepin County 2017
City of Maple Plain 2018

Stantec

10/25/2018

V:\19381active\193801803\GIS\Projects\Functional_Classifications.mxd

Figure 3-7

Existing Transit

City of Maple Plain

N

0 600 1,200

Feet

- Transit Stops
- Park-n-Ride
- Bus Route 674
- City Boundary

Pagenkopf Rd
Fieldstone Pl
Heritage Tr
McDow La
Budd St
Lakeshore Dr
Perkinsville Rd
Newport St
Pioneer Creek Dr
19
Baker Park Rd
Drake St
Perkins La
Howard Ave
Bradford St
12
Independence St
Pioneer Ave
Spring Ave
Marsh Ave
Delano Ave
Maple Ave
W Main St
Parkview Rd
Pioneer Ave N
Bryant St
Oak St
E Main St
Boundary Ave
Henry St
Amy La
Three Oaks Ave
Meadow La
Maple Ridge Dr
Halgren Rd
Wyman Ave
Prairie Land Ave
Clayton Dr
Driftwood Dr
William Dr
Rainbow Ave
Three Oaks Ave
Joyce St
Bryantwood Dr
29
Parkview Rd
Industrial St
Budd Ave
Poplar Ave
83
Timber Tr
Willow St

September 18, 2018

Source: Hennepin County 2017, City of Maple Plain 2018

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MAPLE PLAIN EST 1868 INC 1912

Stantec

Figure 3-8

US Highway 12 Transportation Plan

City of Maple Plain

N

0 600 1,200

Feet

- Existing Traffic Signal
- Future Traffic Signal
- Full Access
- NE Legs Closed, 3/4 Access
- Limited Access (Right in/out)
- Closed
- City Boundary
- Rail Right-of-Way
- Right-of-Way
- Open Water
- NWI Wetland

Main Street to function as a backage road

Existing 3/4 access

Existing Right In/Out

Existing 3/4 access

Heritage Tr
McDow La
Budd St
Lakeshore Dr
Perkinsville Rd
Newport St
Pioneer Creek Dr
Gladview La
Drake St
Bradford St
Perkins La
Howard Ave
Budd Ave
Independence St
Pioneer Ave
Spring Ave
Marsh Ave
Delano Ave
W Main St
E Main St
Parkview Rd
Three Oaks Ave
Henry St
Amy La
Maple Ridge Dr
Meadow La
Three Oaks Ave
Parkview Rd
Rainbow Ave
Halgren Rd
Wyman Ave
Joyce St
Prairie Land Ave
Bryant St
Clayton Dr
William Dr
Bryantwood Dr
Oak St
Boundary Ave
Baker Park Rd
Industrial St
Poplar Ave
Willow St
Timber Tr

12 19 29 83

September 18, 2018

Source: Hennepin County 2017, City of Maple Plain 2018

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MAPLE PLAIN EST 1868 INC 1912

Stantec

TABLE 4-1 CHAPTER 4 – PARKS, TRAILS AND OPEN SPACE PLAN: GOALS, POLICIES AND IMPLEMENTATION SUMMARY

GOALS	POLICIES	IMPLEMENTATION
1. Establish a visual identity in harmony with the physical context that reflects and respects the City of Maple Plain's small-town characteristics, historical past, and future with design solutions that are innovative, efficient, durable, beautiful and economically viable.	• Maintain design standards for high quality development which will provide the highest possible tax base within the City of Maple Plain.	▪ Require development to pay for all costs of improvements including any public facilities required to adequately serve the development. ▪ Development shall be fiscally sound and shall enhance or complement the existing land uses, housing or business types, and respect the small-town character of the community
2. Provide the community with a variety of affordable choices for physical activity and recreational opportunities for people of all ages.	• Use the City's parks to provide different opportunities for free physical activity and recreational opportunities (provide different opportunities at each of the City's parks).	▪ Apply for park and recreation related grants ▪ Monitor development/plans of nearby facilities in order to not over duplicate services.
3. Provide ample safe and clean park and trail facilities for everyone to enjoy.	• Maintain a parks maintenance and capital improvement plan and review them on an annual basis.	▪ Complete routine maintenance

PARKS SYSTEM ANALYSIS AND PLAN

This chapter of the Comprehensive Plan examines the parks, trails and open spaces currently in the City of Maple Plan; and establishes a vision for building upon the current system over the next twenty years. The inventories and analysis within this chapter are a result of resident input, multiple meetings, and tours of the various facilities. This chapter includes the following sections:

- Regional Partners & Connections
- Existing City Parks
- Existing Bikeways and Trails
- Park, Trail, and Open Space Plan
  - New parks
  - New trails
  - Focus on open space
  - Capital improvement plan
  - Active living principles

Regional Partners and Connections

In order to fully understand the park and trail needs for the City of Maple Plain, it is critical to have an understanding of the regional facilities that serve the community. Figure 4-1 on the following page highlights the main regional facilities near Maple Plain including:

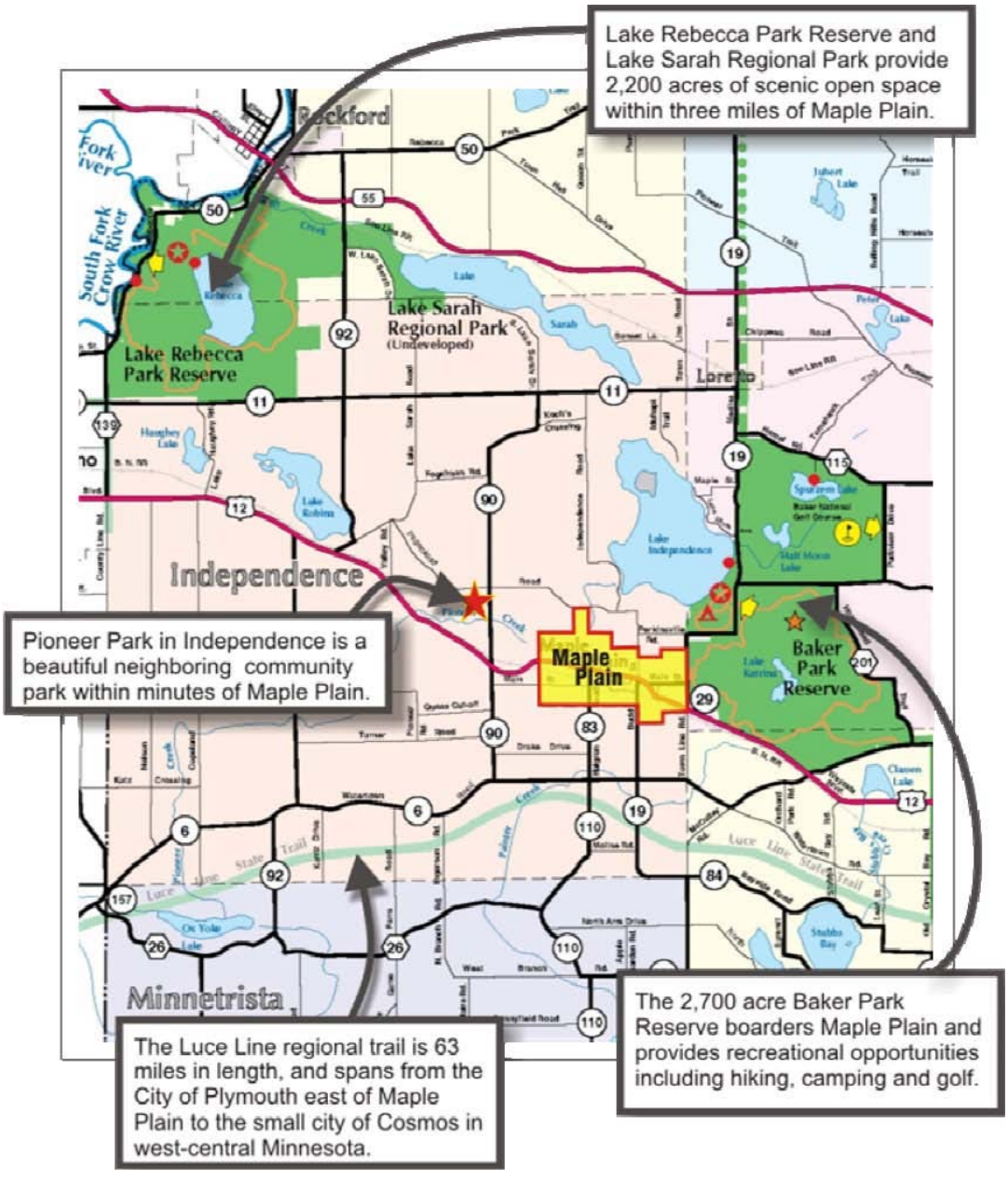
- Lake Rebecca Park Reserve/Lake Sarah Regional Park
- Baker Park Reserve
- Luce Line Regional Trail
- Pioneer Park (City of Independence)

While none of these facilities is within the borders of Maple Plain, each provides recreational opportunities for the citizens of Maple Plain. Additionally, each destination must be kept in mind when planning local parks, trails and open spaces to ensure the wise use of limited city dollars.

At this time, the Three Rivers Park District is in the process of drafting a new Master Plan for Baker Park Reserve. It is anticipated that this plan will be finished in April 2019. The City has

provided input for the plan through City Staff and the Parks Commission. Once complete, the City of Maple Plain will take this Master Plan into consideration as it plans future park improvements.

Figure 4-1: Regional Parks and Trails near Maple Plain



Regional Park System Improvements in Maple Plain

In 2014, the Three Rivers Park District drafted the Baker/Carver Regional Trail Master Plan. This proposed 10 foot wide trail is planned to go through Maple Plain as shown Figure 4-2 below. The Baker-Carver Trail will connect Maple Plain to the Luce Line Trail through Segment A (2.25 miles) as shown in Figure 4-3 on the next page. It is anticipated that Segment A will be completed 2024 or later (10+ years from 2014).

Figure 4-2: Regional Parks and Trails near Maple Plain

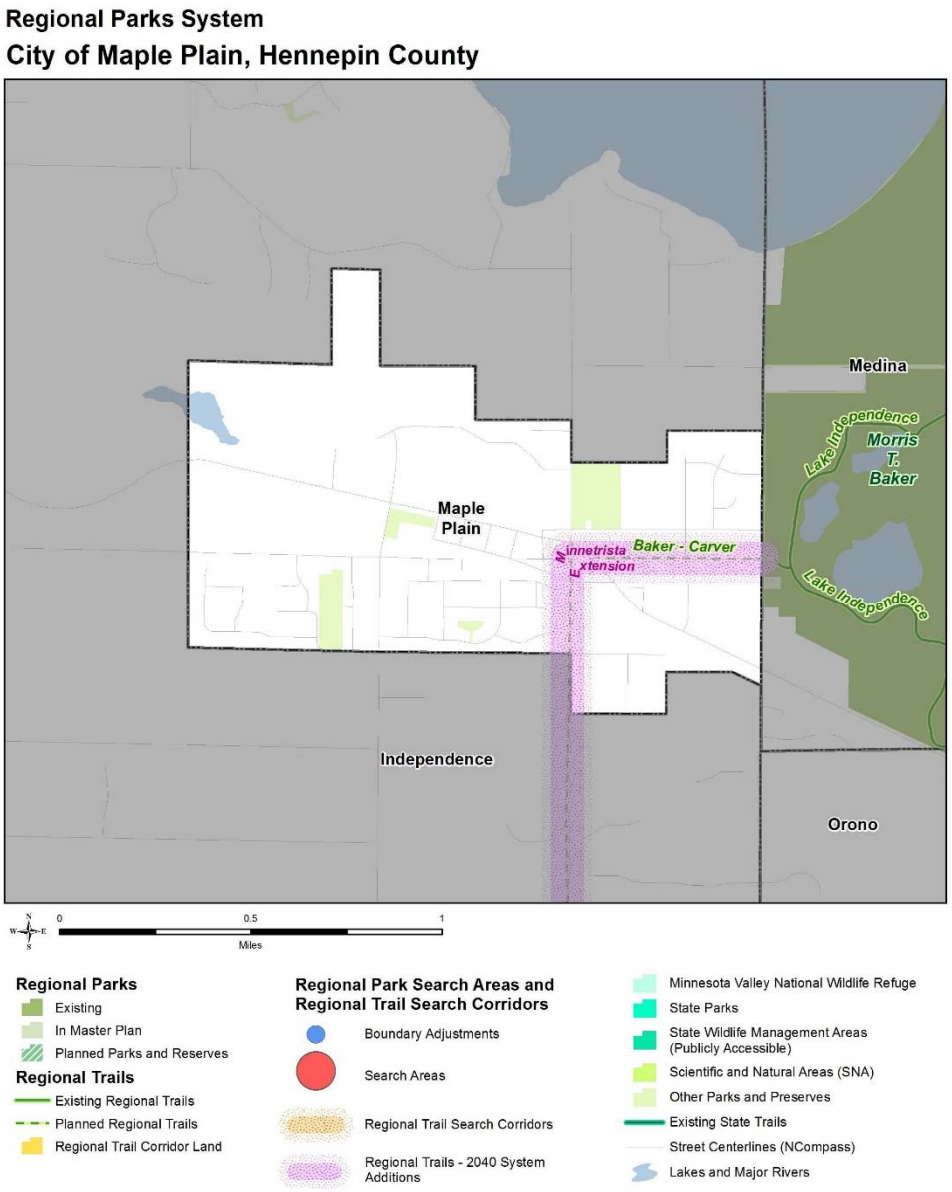
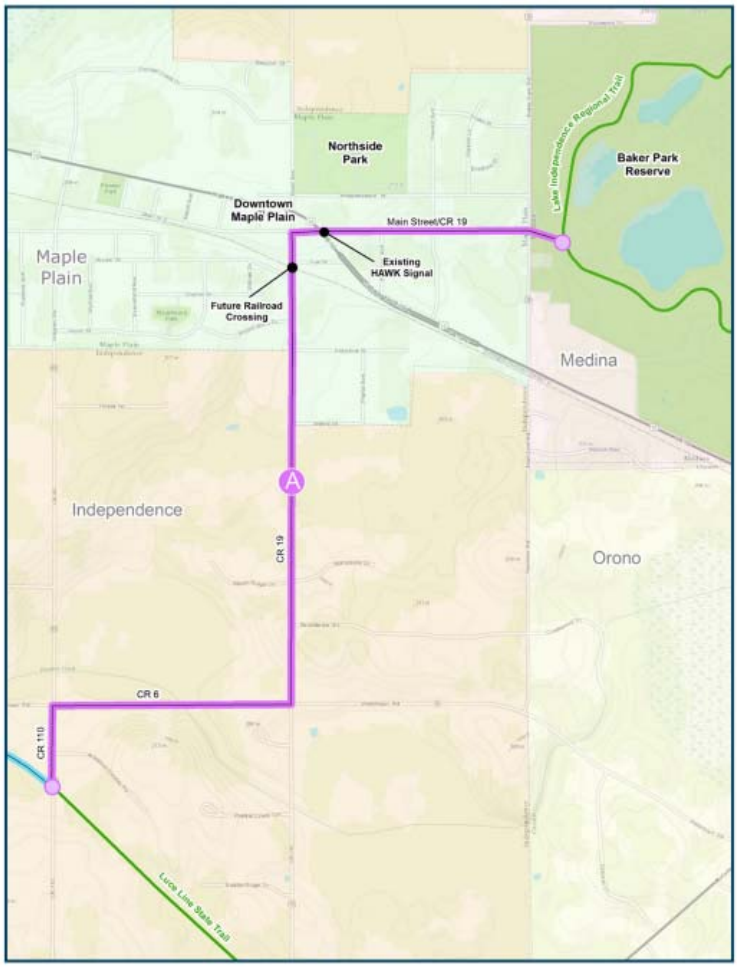


Figure 4-3: Segment A of the future Baker/Carver Trail



Existing & Proposed City Parks and Open Spaces

To its credit, the city of Maple Plain currently has a variety of park land that is well dispersed throughout the community. Geographically separating public facilities ensures that all portions of the community have access to parks and recreational areas. Currently the main park facilities in Maple Plain include:

- Northside Park
- Discovery Center/Orono School District Building
- Bryantwood Park
- Rainbow Park
- Pioneer Park
- Native American Burial Grounds

To complement these existing facilities, the City also intends to develop the following parks and open spaces through future redevelopment:

- Downtown Urban Square
- Gateway Urban Square

This section outlines the characteristics of these existing and proposed facilities.

Northside Park

Northside Park is one of two large community parks in Maple Plain which offers a concentration of many amenities for all age ranges. The prominent feature of this park is the high school baseball field which can accommodate many levels of competitive baseball or softball games. Adjacent to the baseball field is a high-quality public softball field. It is fortunate that Maple Plain has such facilities as ball fields are often difficult for communities to provide as they require a large land area. Other active use facilities at this park include a half basketball court and swing set. Finally, a large parking lot provides ample parking area for this heavily used facility. Improvements for this park are currently being explored including adding a bandshell, an upgraded picnic shelter, more sidewalks, Veterans Memorial, and ballfield lights.

Discovery Center (Orono School District Building)

Adjacent to Northside Park is the Discovery Center which hosts a number of community-based organizations. A large area of open space behind the Discovery Center complements the open space provided in Northside Park by providing an informal setting for any number of activities. For younger children, there are play structures on the east side of the Discovery Center building is open to the public during non-school hours. This provides opportunities for climbing and sliding and scaling monkey bars.

When viewed as a whole, Northside Park and the Discovery Center provide an all-inclusive facility with amenities for the entire family.

Rainbow Park

Rainbow Park is Maple Plain's second community park serving residents to the south of U.S. Highway 12. Like Northside Park, Rainbow Park also offers a concentration of many amenities for all age ranges. However, there are a number of amenities unique to this park such as tennis courts, a full basketball court, a soccer field, and a winter skating rink. Common elements found in this park are three small ball fields (for anything from kickball games to youth baseball and softball), and playground equipment including swings and a play structure. Finally, wide open areas of grass, abundant trees and a series of benches provide areas to relax and enjoy this picturesque park.

Rainbow Park is easily accessible from surrounding areas via the local road system. Planned improvements to the City's pedestrian infrastructure include a new trail along Bryantwood Drive west to Park Drive, and sidewalk improvements along Parkview Road, Joyce Street, and Bryantwood Drive to link Rainbow Park to Bryantwood Park to Downtown.

Bryantwood Park

Bryantwood Park is a small neighborhood park serving the area between downtown and Rainbow Park. Nestled amongst the back yards of numerous homes, this park's primary purpose is to provide a recreational opportunity for families and young children. Two areas with play equipment are the main amenities in this park. The first provides a small structure and slide designed specifically for toddlers. The second contains standard playground equipment including swings, see-saws, a jungle gym, and a slide. Access to Bryantwood park is provided via two trails; one connecting to Clayton Drive and the other to Joyce Street.

Pioneer Park

Pioneer Park serves a dual purpose for Maple Plain. Its primary use is as a location for the City's public works department and the water treatment plant. The secondary use is passive public recreation. There is currently a trail in which a part of it is bituminous and the other portion is gravel. Additionally, there is a sidewalk leading to a gazebo. The future for this park will be a fully bituminous mixed use path with proposed improvements including lighting and benches.

Amenities Summary

The amenities provided by Maple Plain's four parks are as follows:

	Ballfields – Multi-Use	Ballfields – Soccer	Ballfields – Baseball	B Basketball court(s)	Off-Street Parking	Picnic Area	Play Equipment	Shelter	Skating Rink	Tennis court(s)	Volleyball Court(s)	Walking Paths
Northside	✓		✓	✓	✓	✓	✓	✓				✓
Rainbow	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Bryantwood						✓	✓					✓
Pioneer												✓

New Parks

The need for additional new parks in Maple Plain is limited due to the strength of the current park system given its wide variety of amenities and geographical distribution of lands. While public gathering areas and other open space will need to be incorporated into the three proposed redevelopment areas, a new neighborhood park offering the same types of amenities found at Northside, Rainbow, or Bryantwood parks is likely unnecessary. Instead, much of the focus for parks in the coming years should be on ways to complement the existing park land and to fill identified gaps in recreational opportunities offered by the current system.

Over time, the City will likely receive numerous requests for park improvements ranging from cornhole, to a skate park, to a Frisbee golf course. In response to these requests, the City can assess the use of existing lands against the need for a requested amenity and the associated costs to determine whether a change is warranted. Maintaining and enhancing the overall park system for both aesthetic and recreational purposes will also play an important role in preserving existing parks as neighborhood centers and attractive gathering places. Periodic reviews of existing amenities for required maintenance are essential. As existing equipment ages, replacement needs will be identified and incorporated into future capital improvement budgets.

Trails and Sidewalks

There are very few existing trails and sidewalks within the City of Maple Plain. The few that do exist are mainly downtown and along Pioneer Creek Road.

The City recognizes that enhancement of the pedestrian system is needed in order to work towards the City's goal of providing adequate pedestrian connections to the different areas of the City. Providing more connections will promote walking and bicycling, improve access to employment and recreation centers and remove barriers that require travel by car. Proposed redevelopment efforts in the Gateway District, the Downtown District, and the Highway 12/Budd Avenue District will offer substantial opportunities. Furthermore, although not within Maple Plain limits, the City finds it important to provide pedestrian and biking connections to the Lake Independence Regional Trail access point at Baker Park Road and Main Street East. As a part of this effort, the City will work with Three Rivers Park District in the development of the Baker/Carver Regional Trail through Maple Plain. Additionally, the City will work with Hennepin County to provide a safer pedestrian crossing on Baker Park Road at Main Street East. In 2018, Hennepin County and Three Rivers Park District committed funding to preserve a pedestrian underpass at the railroad tracks at Highway 12 and Baker Park Road. Reconstruction and preservation of this underpass makes accessing Baker Park Reserve easier for Maple Plain Residents south of Highway 12.

In addition to the primary network of sidewalks and trails that is needed to provide city and regional connections, it is also recognized that some areas will require sidewalks regardless of whether they serve as the main link between major destinations. The primary need for such

sidewalks is in the Downtown District. Once people arrive by foot or by car, the new downtown area must provide for safe and easy pedestrian movements between the amenities envisioned in this area.

In order to improve connectivity and circulation of the City's walking and bicycling network as well as promote walking and bicycling, the City will implement system updates indicated in Figure 4-4 at the end of this chapter. This map is modified from the City of Maple Plain Walking and Biking Plan passed in 2012. Changes were made based on changing circumstances as well as from feedback from the City Council, Parks Commission, and residents. The City already has started progressing towards the realization of this plan. A sidewalk has been approved along the future Gateway Boulevard which will be a street through the Gateway area connecting Howard Avenue and Baker Park Road. This sidewalk will be installed with the construction of Gateway Boulevard anticipated to occur in 2019.

Trail & Sidewalk Design

Because specific alignments have not been established for the future sidewalk and trail system, it is important to outline general design standards for the benefit of both developers and local decision makers. These design standards can guide both parties in making sound decisions on how to incorporate the needed connections as a component of future development. For example, development within the Gateway District will play a key role in connecting Baker Regional Park to both the Luce Line Trail and Pioneer Park in Independence. The following design standards for different trail types will allow a developer to understand how these required connections may impact development of a site and what to propose up front that may be acceptable to the City.

Trails and pathways connecting to existing regional trails or other recreational systems shall meet or be compatible to the standards of the existing system to maintain the type and recreational experience and safety of its users. Maple Plain supports the interconnection of trailways into and/or through our City from neighboring communities or regional and state agencies. Maple Plain is committed to working with other agencies and government jurisdictions to develop a connective trail system without adverse impacts to our residents, development policies and natural resources.

The following trail types will be considered when establishing the conceptual connections identified in the comprehensive plan:

- Sidewalks – sidewalks consist of an off-road paved surface six (6) feet wide. Sidewalks are not intended for adult bicyclists, so they should be avoided as the sole trail facility for regional connections.

- Off-Road Trails – off-road trails parallel the side of a street to provide safe walking and biking travel. Off-road trails can allow the mix of pedestrian and bicyclists or separate them, depending on the amount of right-of-way or number of users. Separating the off-road trail

and the road is recommended, the width of the separation is again varied based on traveled speed and allotted space. Wherever feasible, to ensure safety of pedestrian and other trail users, the City shall encourage off-road trails. The City considers these trails important in providing an efficient trail system in providing accessibility to other regional trails and recreational opportunities.

- On-Road Bike Lanes – dimensions of on-road trails will vary depending upon several variables including the width of the street, whether parking is permitted, etc. Figures 4-5, 4-6 and 4-7 illustrate the minimums dimensions for different on-road trail types. Note that with these types of facilities, an off-road pedestrian component must also be included.

Figure 4-5: Minimum On-road Shoulder Trail Dimensions

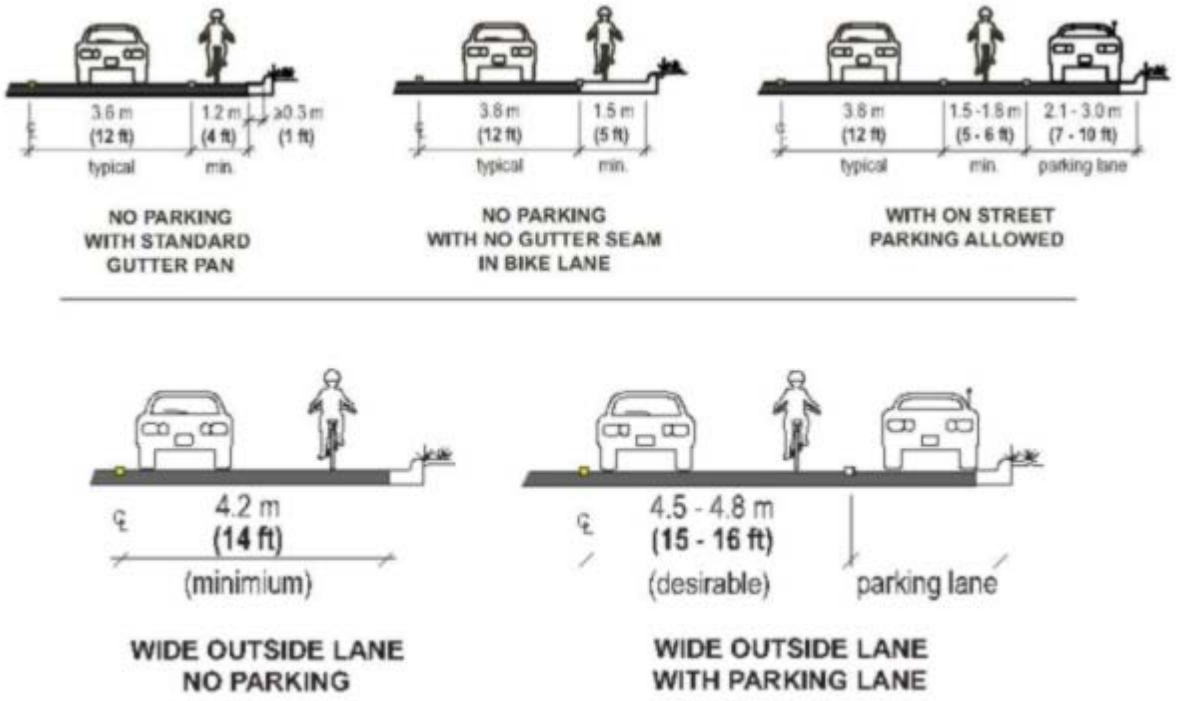
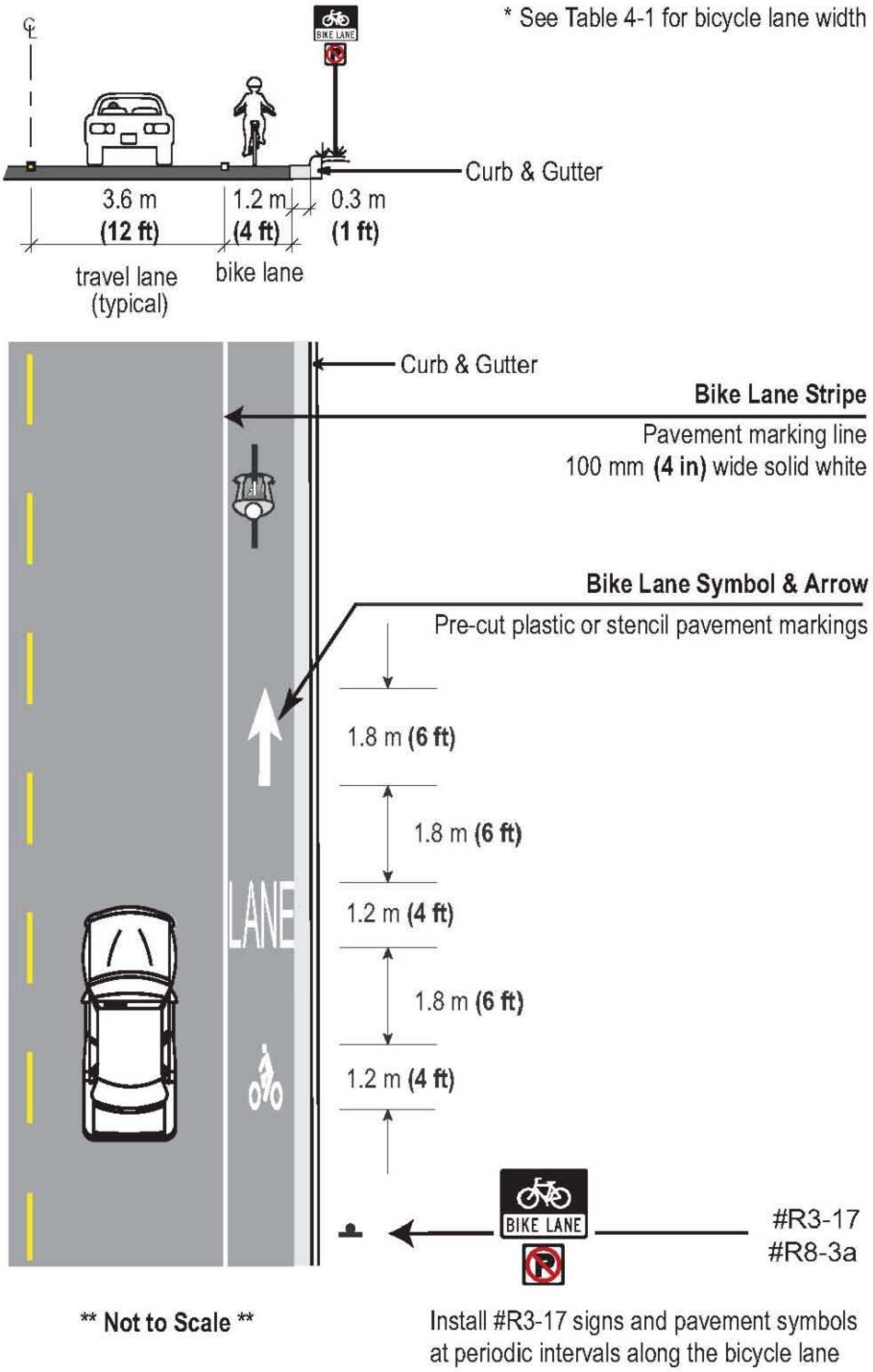


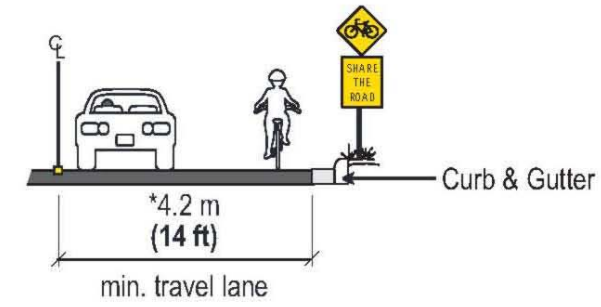
Figure 4-6: Bicycle Lane with No Parking and Standard Gutter Plan

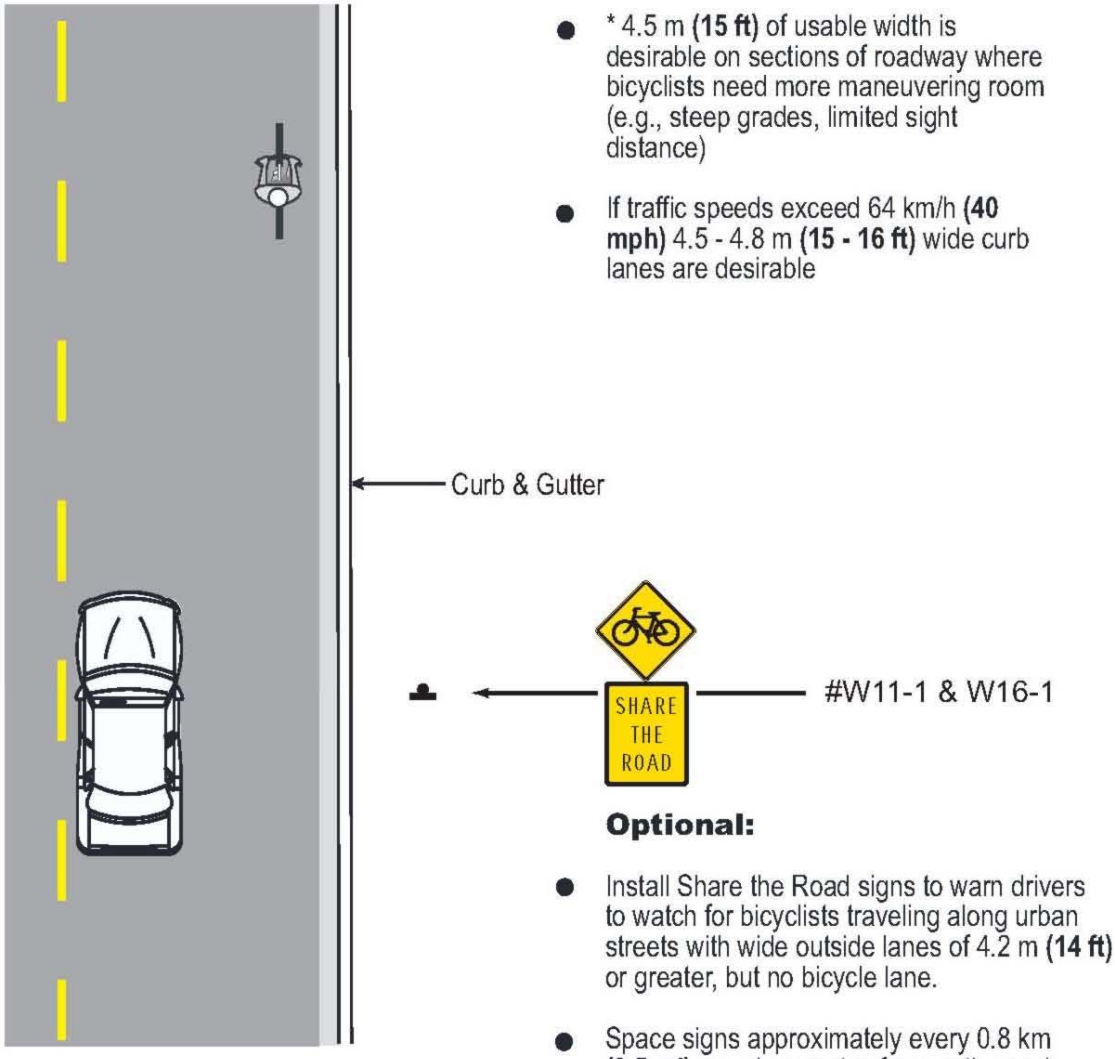


Note:

Application of MN MUTCD Series R7-9 or R7-9a "NO PARKING BIKE LANE" signage may be used. Check current MN MUTCD for any changes to signs and striping configurations.

Figure 4-7: Wide Outside Lane with No Parking





Design Requirements

- * 4.5 m **(15 ft)** of usable width is desirable on sections of roadway where bicyclists need more maneuvering room (e.g., steep grades, limited sight distance)
- If traffic speeds exceed 64 km/h **(40 mph)** 4.5 - 4.8 m **(15 - 16 ft)** wide curb lanes are desirable

Optional:

- Install Share the Road signs to warn drivers to watch for bicyclists traveling along urban streets with wide outside lanes of 4.2 m **(14 ft)** or greater, but no bicycle lane.
- Space signs approximately every 0.8 km **(0.5 mi)** on urban routes frequently used by bicyclists.

** Not to Scale **

Note: Check current MN MUTCD for any changes to signs and striping configurations.

Focus on Nature

One of the hallmark components of the conceptual park, trail and open space plan is a bog walk connecting Maple Plain to Independence Park in the neighboring City of Independence. In addition to providing a pedestrian link to a major activity center near the community, the bog walk can provide an educational opportunity to residents by incorporating signs with illustrations and commentary on common plant and animal species found in the bog. The walk is planned to be wheelchair friendly and can include benches for resting at strategic locations along the 4500' long walkway.

Focus on Public Space

The City will concentrate on providing public spaces within the Downtown District and the Gateway District as part of the planned redevelopment effort. Proper use of open space can help to define these new areas and provide ties to the greater community. In some cases, open space may be used as a buffer to offset the close proximity of old and new. And most importantly, great public spaces will draw people to areas and encourage active living principles. Specific thoughts on how open space will be incorporated into the redevelopment areas follow.

Gateway District

As development occurs, the City will strive to incorporate appropriate open spaces throughout the Gateway District. Consideration will be given to development of public squares containing a combination of paving and vegetative cover which work together to create an attractive setting that welcomes and draws people to the area. Plazas alongside or incorporated into proposed buildings can also provide unique public spaces with the same benefits of a square. Pedestrian friendly streets with vegetative plantings and curb-bulbs round out a series of important tools for creating an inviting and exciting district.

Downtown District

Open space is viewed as an important component for revitalization of the Downtown District. Specifically, the area surrounding the future city hall, library and post office in the Downtown District is envisioned to become an asset for the institutions it surrounds—and by extension—the community as a whole. The open space will be designed to provide a sense of connection to the rest of the community and inherently reflect the small town feel and values of Maple Plain. The public gathering areas provided within the Downtown District should also draw people to this portion of the City and the services offered there.

Capital Improvement Plan

On a yearly basis, the City will review and revise a capital improvement plan for future expenditures relating to parks, trails and open spaces. The City's current draft of the Capital Improvement Plan is included in the Implementation Chapter of the Comprehensive Plan.

Active Living Principles

Maple Plain's vision to create a comprehensive series of trails and open spaces serving the entire city is shared by many communities and is strongly encouraged by today's health professionals as such facilities promote increased physical activity which translates to a healthier community. The term "active living" is commonly used to describe this type of development. The City recognizes the importance of following active living principles and will seek funding assistance when available to promote this type of development. The following are general principles the City will use to guide decisions on the design, location, and implementation of future parks, trails and open spaces.

- Physical activity is a behavior that can favorably improve health and quality of life.
- Everyone, regardless of age, gender, language, ethnicity, economic status or ability, should have safe, convenient and affordable choices for physical activity.
- Places should be designed to provide a variety of opportunities for physical activity and should accommodate a wide range of individual preferences and abilities.
- Development patterns should encourage mixed-uses, compact design, and a variety of transportation choices.
- Buildings should be designed and oriented to promote opportunities for active living, especially active transportation.
- Transportation systems, including transit, should provide safe, convenient and affordable access to housing, worksites, schools and community services.
- Parks and green space, including trails, should be safe, accessible and part of a transportation network that connects destinations of interest, such as housing, worksites, schools, community services and other places with high population density.

The City should plan for ongoing routine maintenance of facilities to provide for the continued safety, quality and attractiveness of the physical infrastructure. It is recognized that not all development will achieve all or some of the active living principles listed above. However, by acknowledging these principles as important, it is hoped that most if not all future projects will work to promote a healthier community for the citizens of Maple Plain.

Parks, Trails, and Open Space Goals and Policies

1. To compliment the City's existing parks, the City intends to develop public spaces and trails within the Gateway, Downtown and Budd Avenue/Highway 12 Districts and the surrounding areas.

2. Providing adequate pedestrian connections to the different areas of the City will improve access to employment and recreation centers and reduce the need of automobiles

3. Improvements to Pioneer Park to provide a full bituminous mixed-use path and scenic thoroughfare.

4. Incorporate sidewalks or bikeways into all new development projects. The need of sidewalks along other streets will be determined during street improvement projects.

5. Work with Three Rivers Park District on the development of the Baker/Carver Regional Trail through Maple Plain.

6. Create a regional trail link between Baker Park Reserve and Pioneer Park in Independence.

7. The City recognizes the importance of following active living principals and will seek funding assistance when available to promote this type of development.

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Water Conservation Plan

This section of the Comprehensive Plan provides a summary of certain information included in the Minnesota Department of Natural Resources Water Emergency and Conservation Plan for the City of Maple Plain (included in this plan as Appendix A). The City's Water Distribution Map (Figure 5-1) identifies the existing water facilities and infrastructure that serves Maple Plain.

Growth and Water Demand

Maple Plain has maintained a steady population over the years. Water needs will increase slightly with an estimated 2030 served population of 2,510. The City has developed agreements with neighboring communities to serve certain properties adjacent to the Maple Plain's city limits.

Water use has increased steadily over the years; however there has been a decrease in the last few years due to the loss of a wet commercial/industrial user. Maple Plain currently pumps an average of 230,000 gallons each day. In the past 10 years, the maximum day occurred in 2001 with 0.57 million gallons (MG) being pumped on one day. The projected water demand for 2030 is a daily average of 0.33 MG, with an estimated daily maximum of 0.82 MG.

Existing Facilities

The existing water supply and distribution system has served Maple Plain's needs well. Previous studies have identified and quantified cost effective and timely improvements for the system. The existing distribution system is presented on the Water Distribution Map at the end of this section. The existing system operates all under one pressure zone. The high water level for this pressure zone is at an 1165 elevation. The City currently has three wells with capacities of 100 gallons per minute (gpm) (Well 1), 500 gpm (Well 2), and 650 gpm (Well 3). The City has an existing water treatment plant near Well 2 with 720,000 gallons per day capacity. The City built a new water treatment plant near Well 3 which began operation in Fall 2008. Construction of the new facility is the result of radium levels in the existing Well 3. Water tests indicated radium levels exceeded the Maximum Contaminant Level in February 2006. Well 3 was restricted for emergency use at that time.

The firm capacity of the City of Maple Plain's existing well fields is 600 gpm. Firm capacity is defined as the amount supplied with the largest well out of service.

One 400,000 gallon elevated storage facility stabilizes pressures during peak water demands and also serves as a source of water during fires or power outages. Water from Well 2 is pumped to the current treatment facility where iron and manganese is removed. Chlorine and fluoride are added to disinfect and prevent tooth decay. After treatment, the water is pumped to the distribution system and the elevated storage tank, based on signals from the elevated storage tank.

Ultimate Design Water System

The ultimate system plan is to add a future Well 4 near the new Water Treatment Facility by Well 3. The table below does not include the current new Water Treatment Facility completed in 2008. There will be watermain replacements and extensions with new redevelopment in the City as well as maintenance on the existing water tower.

The improvement program for Maple Plain's ultimate trunk water supply and distribution system is estimated to cost $1,770,000. This cost is broken down into supply, storage, and distribution as follows:

Distribution	$ 1,020,000
Supply	$ 425,000
Storage	$ 325,000
Treatment	$ 0
TOTAL	**$ 1,770,000**

Phasing of Proposed Improvements

The City will continue to monitor redevelopment, commercial/industrial growth, and requests from neighboring communities in phasing future improvements to their water system. The near term recommended improvements will be Well 4 and watermain replacement and extensions with street reconstructions and redevelopment.

Water Resources Analysis and Plan

The Metropolitan Land Planning Act (amended 1995) requires local governments to prepare comprehensive plans and submit them to the Metropolitan Council to determine their consistency with metropolitan system plans. The local Comprehensive Plan is to include a sanitary sewer element covering the collection and disposal of wastewater generated by the community.

In March, 2005 the Metropolitan Council adopted a revised Water Resources Management Policy Plan (WRMPP). The 2030 WRMPP includes the metropolitan wastewater system plan with which local comprehensive plans must conform. This chapter of the Comprehensive Plan demonstrates Maple Plain's conformance with the metropolitan wastewater system plan, updates Maple Plain's previous sewer planning efforts, and describes in detail the City's sanitary sewer system.

Maple Plain projects a modest increase in sanitary sewer flows through the year 2030. This increase results from new development and redevelopment. Metropolitan Council Environmental Services will use Maple Plain's projected sewer flow, in combination with those from other communities, as it manages the regional sewage disposal system.

Existing Sanitary Sewer System

The City of Maple Plain's existing sanitary sewer system is shown on Figure 6-1. The existing system consists primarily of lateral sewer (defined as pipe smaller than 12-inch diameter), with the only trunk pipe occurring in district MP-5, in the southeast corner of the City along Poplar Avenue.

Maple Plain's sanitary sewer system connects to Metropolitan Council Interceptor 8352 at node MP-E on Figure 6-1. This node is also Metropolitan Council Lift Station L63. According to the Metropolitan Council, this interceptor currently has capacity for 0.49 million gallons per day (MGD) average flow, which is adequate to meet the future needs of the City of Maple Plain. Portions of Medina are also tributary to lift station L63 via a sewer pipe under County Road 19.

From Interceptor 8352 Maple Plain's sewage passes through a series of lift stations and other forcemain around the north and east shore of Lake Minnetonka to the City of Minnetonka border. From there an extensive network of gravity interceptors carry sewage through Eden Prairie, under the Minnesota River, and to the Blue Lake Wastewater Treatment Plant within Shakopee.

Metropolitan Council has proposed an interceptor improvement project to rehabilitate L63 and a project to add a second forcemain. This project is scheduled for the 2011 to 2020 time period.

Forecasts

Table 6-1 presents Metropolitan Council's population projections for Maple Plain.

Table 6-1 – Metropolitan Council City-wide Projections

			Revised Development Framework		
	1990	2000	2010	2020	2030
Population	2,005	2,088	2,550	2,570	2,600
Households	696	770	920	950	1,000
Employment	1,110	1,681	2,350	2,800	3,300

Table 6-2 presents projections of sewered population, households, and employees for the City of Maple Plain, as prepared by Metropolitan Council and presented in its 2030 Water Resources Management Policy Plan.

Table 6-2 -- Metropolitan Council Projections for Sewered Areas

Year	Sewered Population	Sewered Households	Sewered Employment
2010	2,553	922	2,350
2015[2]	2,561	936	2,575
2020	2,570	950	2,800
2025[2]	2,585	975	3,050
2030	2,600	1,000	3,300

Table 6-3 presents the City's projections for future households, population, and employment based on the area shown on Figure 6-1.

Table 6-3 – City Projections for Sewered Areas

Year	Sewered Population	Sewered Households	Sewered Employment
2007	1,961	753	X
2010	2,045	815	1,750
2015[1]	2,165	863	1,825
2020	2,284	910	1,900
2025[1]	2,397	955	2,050
2030	2,510	1,000	2,200

The City of Maple Plain projects lower population and employment in comparison to the Met Council projections.

Figure 6-1 (Front)

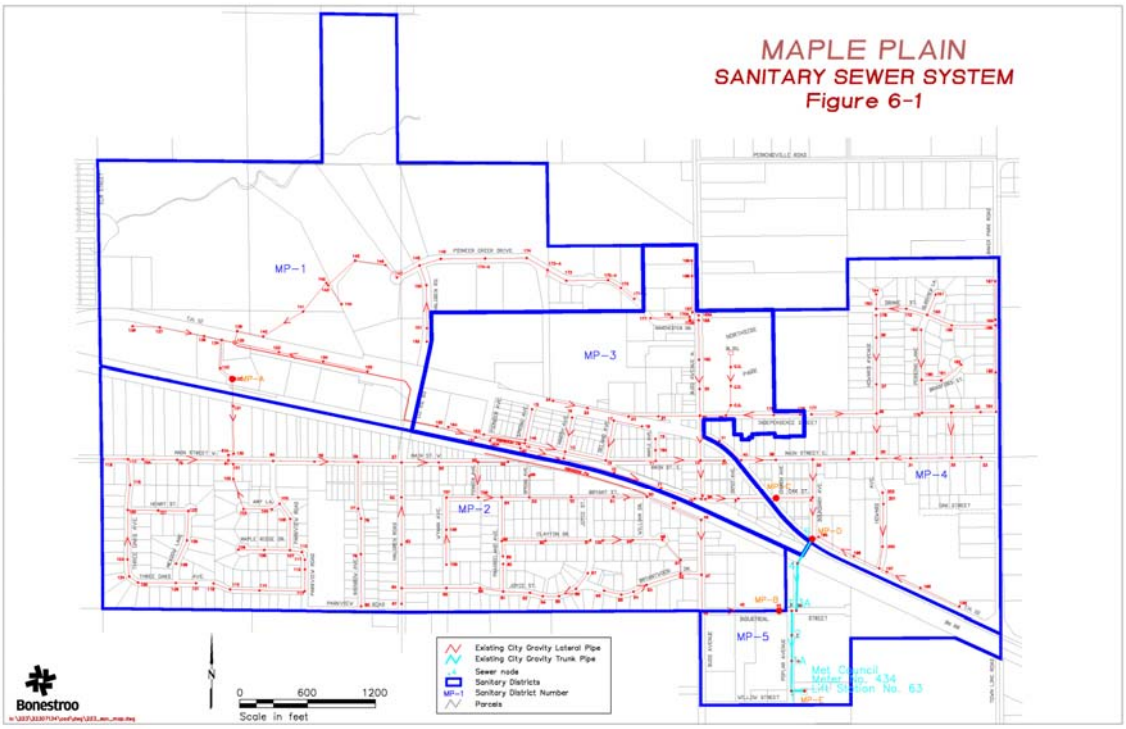


Figure 6-1 (Back)

Table 6-4 presents projected sewer flows for the entire service area represented in Figure 6-1. Both Maple Plain and Metropolitan Council Projections are provided. It is assumed that Metropolitan Council projections pertain to Maple Plain only. The 2006 flow is based on metering at Metropolitan Council's flow meter number M433. Maple Plain has based average flow projections by proportionally increasing the existing metered flow in the same rate as population and employment growth.

Table 6-4 -- Wastewater Flow Projections

Year	MCES Projected Average Flow (MGD)[1]	CSP Estimated Average Flow (MGD)
2006		0.29
2010	0.32	0.30
2015	---	0.32
2020	0.33	0.33
2025	---	0.34
2030	0.34	0.35

1. Metropolitan Council's Water Resources Management Policy Plan (May 2005).
2. Based on Met Council meter data (meter no. M433)

In addition to satisfying the requirements outlined in Metropolitan Council's Water Resources Management Policy Plan, Maple Plain would like this sanitary sewer chapter to accomplish the following:

- Provide Metropolitan Council with sufficient detailed information so that it can make reasonable plans for upgrades to its interceptors and the Blue Lake Wastewater Treatment Plant.

- Provide a trunk system that allows the City a certain measure of reserve capacity in the event that a high sewage generating use does appear within its borders.

The forecasts of Tables 6-3 and 6-4 provide the numeric detail for Metropolitan Council's regional sewer planning efforts. The remainder of this chapter provides information related to Maple Plain's sanitary sewer system including a discussion of land-use based sewer modeling and how it is used.

The flow projections presented in Appendix B originate from land use statistics which are based directly on the land use plan presented in Chapter 2. Certain reductions in land use area are made to account for wetlands, steep slopes etc., and a net developable acreage for each land use category is thus created. The net acreage is multiplied by standard unit flow rates to obtain an average flow for each sewershed. Table 2 in Appendix B provides these individual sewershed average flows, and calculates a total average flow of 0.55 MGD for the City. This average exceeds the table 6-3 projected flow of 0.34 MGD by a factor of 1.6 to 1.

The purpose of the spreadsheets in Appendix B is to conservatively estimate demand at the municipal level so that no City pipe is undersized for its projected sewershed. The question of sizing sewer pipe for Maple Plain may be moot considering that the City is nearly fully developed. None the less, redevelopment may occur that stretches the capacity of the existing system. As redevelopment projects come forward, the City will consider whether new sewer pipes are needed to support the redevelopment at hand as well as redevelopment in the future. The "system design" sewer flows represented in Appendix B provide a basis for conservatively calculating the impact of specific development proposals on the City's system.

It should be noted that the unit flow rates used in Table 2 of Appendix B to generate average flows represent an industrial economy characterized by manufacturing. In recent years industrial development has trended toward service economy and many communities have seen very little sewage flow within their industrial and commercial districts. Another more recent trend toward combining commercial and residential use in multi story buildings has re-established a need for sewer capacity in commercial sectors so it is still a valid assumption for Maple Plain to use these higher design flows.

Sanitary Sewer Design Criteria

Land Use

The land use plan for the City of Maple Plain served as the basis for the development of the sanitary sewer flow projections and analysis of the trunk system. The area of each land use was determined for each sewershed. Existing land uses used in this plan include those described in Chapter 2: Land Use Analysis and Plan. Detailed descriptions of the various land uses including density ranges can be found in Chapter 2. Areas of each land use by sewershed are presented in Table 1 of Appendix B.

Estimated Average Wastewater Flows

Municipal wastewater is made up of a mixture of domestic sewage, commercial and industrial wastes, groundwater infiltration, and surface water inflows. With proper design and construction, groundwater infiltration and surface water inflows, often called infiltration/inflow (I/I), can be minimized. The flows due to I/I are accounted for in the analysis and design of the trunk sewer system.

The anticipated average wastewater flows from the various sewersheds were determined by applying unit flow rates to each of the land use categories. The "system design" unit flow rates are presented in Table 6-5 on the following page. The average wastewater flows for each sewershed are presented in Table 2 of Appendix B.

For all land uses unit rates per acre were used to generate average flow projections. The units per acre assumptions for Low, Medium, and High Density Residential and Mixed-Use were based in part on information from the City Planning staff regarding projected number of units for each land use. National Wetlands Inventory (NWI) land and right-of-way (ROW) were all assumed to not generate any sewer flows.

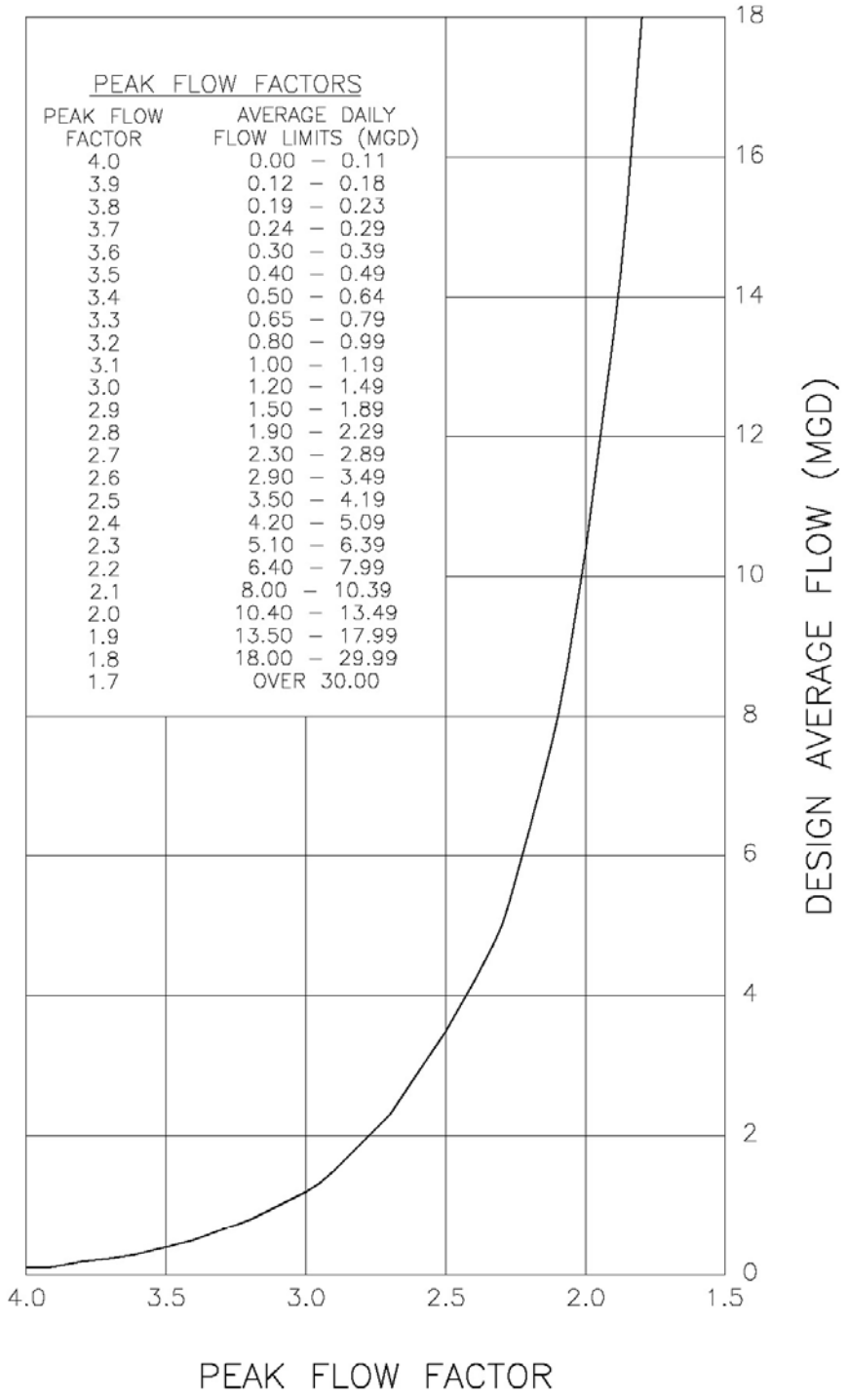
Table 6-5 -- System Design Wastewater Unit Flow Rates

Land Use Type	Gal/Acre/Day
Low Density Residential	693
Medium Density Residential	1,591
High Density Residential	3,115
Downtown	2,886
Mixed-Use	2,109
Industrial	1,200
Office Park	1,200
Public/Semi-public	250

Peak Flow Factors

The sanitary sewer system must be capable of handling the anticipated peak wastewater flow rate including any I/I. The design peak flow rate can be expressed as a variable ratio to the average flow rate. Curves used to describe this ratio, called the Peak Flow Factor (PFF), indicate a decreasing ratio of peak flow to average flow with increasing average flow.

The PFF values applied in this study are shown in Figure 6-2 as a curve and in tabular form. These values are generally conservative and widely used throughout the state for municipal planning. They include a standard allowance for I/I, which is typical of new sanitary sewer construction as well as properly operating existing sewers. The design flows for each sewershed are presented in Table 3 of Appendix B.



PEAK FLOW FACTORS

MAPLE PLAIN, MINNESOTA Figure 6–2

2030 COMPREHENSIVE SEWER POLICY PLAN

Sanitary Sewer Trunk System

General

The trunk sewer system layout for the City of Maple Plain is presented on figure 6-1 (on page 6-3). This map shows the main sanitary sewersheds, existing trunk sanitary sewers, and other sanitary sewer infrastructure. The existing sewer system was analyzed via several pipe segments through the use of a spreadsheet based sewer model. These segments include the 18-inch sewer pipe under Poplar Avenue. This pipe collects all sewage from Maple Plain and delivers it to the Metropolitan Council's sanitary lift station L63. The modeling of the sanitary sewer system was based on land use, standard wastewater generation rates, future land use plans, and pipe hydraulic capacity.

The remainder of Maple Plain's sanitary sewer system, upstream of the 18-inch pipe, consists of lateral sanitary sewer – typically eight inches in diameter. In most cases, lateral sanitary sewer has capacity for several hundred homes or more so it is rare that neighborhood sewage flows overwhelm lateral pipes. Broken and obstructed lateral pipe or lateral pipe inundated by clear water infiltration cause local sewer problems more often than does lateral design capacity.

Intercommunity Flows

Maple Plain sends sewage flow to the Met Council Interceptor 8352 in Orono. A summary of the estimated average and peak sewer flow generated by Maple Plain is presented in Table 6-6 based on meter number M433.

Table 6-6 – Intercommunity Flows

Community	Sewer District	Average Design Flow (MGD)	Peak Design Flow (MGD)
Maple Plain to Met Council	MP-5	0.29[1]	1.07

1. Based on current connections but not future growth.

Tables 3 and 4 in Appendix B contain detailed information regarding the sewer connection locations, ultimate sewered area, and "system design" sewer flow projections at the city limits of Maple Plain.

Individual Sewage Treatment Systems (ISTS)

The City of Maple Plain has three (3) septic systems within the City limits located at 1501 and 1515 Baker Road and 4975 Industrial Street. There are no known issues with these systems.

The City of Maple Plain is committed to the proper design, location, installation, and ongoing maintenance of ISTS. To that end, the City has delegated the responsibility of permitting and inspection of all ISTS sites to Hennepin County. Furthermore, Maple Plain Code reinforces County regulations by requiring that all new systems be installed according to Minnesota Pollution Control Agency (MPCA) rule 7080 permit requirements. And finally, the County is presently upgrading their ability to track ISTS maintenance activities to ensure all sites in Maple Plain are adequately maintained and pumped a minimum of every three years. Maple Plain is committed to working with the County as needed to implement this monitoring program.

System Design and Recommendations

The City of Maple Plain is divided into five (5) sewer districts. The districts are labeled Maple Plain 1 through 5. A summary of characteristics and special issues within each district is provided below.

Maple Plain District 1 (MP-1)

The Maple Plain District 1 is primarily industrial land use and is located in the northwestern portion of the City. The 2030 land use plan also includes some low density residential and large wetland areas, which are not included in the sewage flow calculations. MP-1 is served entirely by laterals and connects to MP-2 at the railroad bisecting the City.

Maple Plain District 2 (MP-2)

Maple Plain District 2 is located in the southwest corner of the city with the majority of the land being low density residential. The district is served by a lateral system that continues from MP-1 at node MP-A and extends southeasterly to node MP-B. This area also includes a substantial amount of railroad and other right-of-way (approximately 43 acres total). MP-2 is served entirely by lateral sanitary sewer.

Maple Plain District 3 (MP-3)

The Maple Plain District 3 consists of primarily mixed-use and public/semi public areas. It is located in the central portion of Maple Plain and also contains about two thirds of the city's high density residential area. As with MP-2, MP-3 also encompasses a significant amount of right-of-way. MP-3 is served entirely by lateral sanitary sewer.

Maple Plain District 4 (MP-4)

Maple Plain District 4 is located in the northeastern part of the City, bounded by U.S. Highway 12 to the south. The 2030 land use consists of primarily low and medium density residential with mixed-use along the U.S. Highway 12 corridor. MP-4 is served entirely by lateral sanitary sewer and connects to the trunk system at node MP-D at TH 12.

Maple Plain District 5 (MP-5)

Maple Plain District 5 is the only district with trunk sewer in the city. It connects nodes MP-D and MP-B into the trunk system at node MP-E (lift station L63) before exiting the city. The majority of this district is industrial and is located in the southeastern portion of Maple Plain.

Infiltration and Inflow

Subsequent to the adoption of the 2000 Maple Plain Comprehensive Plan, the Metropolitan Council instituted its Inflow/Infiltration (I/I) Surcharge Program. The fundamental policy statement summarizing this program is that Metropolitan Council "will not provide additional capacity within its interceptor system to serve excessive inflow and infiltration." To achieve this goal, the Metropolitan Council has established maximum inflow and infiltration thresholds for each of the communities utilizing the system. Communities that exceed their established threshold are required to eliminate the excess flow within a reasonable timeframe.

In 2005, the Metropolitan Council identified Maple Plain as a community with observed excess I/I. As a result, the City implemented a proactive and adapting program directed at identifying and correcting I/I problems. Some approaches used in the past or which may be considered in the future include inspections and repairs to public and private sanitary sewer lines, consideration of new ordinances specifically to address I/I, and upfront inspections of existing infrastructure in conjunction with street reconstruction projects.

In 2009, the City was removed from the I/I surcharge list as it was no longer identified as a community with excessive I/I. However, because the Metropolitan Council's I/I surcharge program is continuing, the City continues its efforts on I/I reduction measures, including inspections and repair to public and private sanitary sewer lines.

Summary and Outcomes

The Comprehensive Sanitary Sewer Plan presented in this chapter of Maple Plain's Comprehensive Plan provides the information required by Metropolitan Council so that the Council can determine that Maple Plain is in conformance with metropolitan sanitary sewer system plans. This chapter also serves as an inventory of City of Maple Plain's existing sanitary sewer facilities, particularly its self-defined trunk system and the capacity of that trunk system to serve future redevelopment. Maple Plain also describes current and future efforts to reduce infiltration and inflow into its sanitary sewer system and identifies future activities, including capital expenditures and programmatic elements, to continue improving its sanitary sewer system. Based on all this the following outcomes are desired:

- That Metropolitan Council uses the City's population and flow projections (Table 6-4) in determining the appropriate capacity for its own facilities.
- That Metropolitan Council consider Maple Plain's "system design" peak flow of 1.9 million gallons per day when considering capacity upgrades downstream of Maple Plain.
- That the "system design" flows and criteria in Tables 3 & 4 of Appendix B be used for sizing all future sanitary sewer facilities that support redevelopment and future development activities.

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FIGURE X-X CHAPTER 7 – SURFACE WATER MANAGEMENT PLAN: GOALS, POLICIES AND IMPLEMENTATION SUMMARY

GOALS	POLICIES	IMPLEMENTATION
1. Manage land disturbance that creates impervious surface to prevent flooding and adverse impacts.	• Developments to reduce discharge rates, nutrient loading, and runoff volumes where feasible. • Amend or modify ordinances where appropriate. • Consider water quality retrofits on existing city properties. • Use MPCA and Met Council documents as Best Management Practices	▪ SWMP ▪ Watershed Requirements
2. Protect the City's wetlands, lakes, streams, groundwater, and natural areas to preserve the functions and values of these resources for future generation through Wetland Conservation Act, buff standards, groundwater protection rules and coordination with outside agencies.	• Wetland Management. • Lake Management • Stream Management • Groundwater Recharge and Protection. • Use highest and best use of land when analyzing rate control.	▪ Incorporate Hennepin County, MN Department of Health, PSCWMC, and MCWD requirements.
3. Management of Floodplains and Natural Areas.	• Floodplain Management • Natural Area Management	▪ PSCWMC and MCWD requirements.

4. Citywide Program Elements.	• Pollution prevention. • Monitoring and maintenance • Public education • Funding	▪ MS4 program.
5. Support of other Agencies.	• Cooperate with Local Water Management Organizations. • Coordinate development review with LWMO. • Participate in Resource Management Plans • Cooperate in implementation of the Hennepin County Groundwater Plan • Support well-sealing programs developed by Hennepin County and MN Department of Health	▪ City Ordinances ▪ LSWMP

Local Surface Water Management Plan

The Local Surface Water Management Plan serves as a comprehensive planning document to guide the City of Maple Plain in conserving, protecting, and managing its surface water resources. The City of Maple Plain updated its Local Surface Water Management Plan in conjunction with its 2030 Comprehensive Plan update. The Local Surface Water Management Plan is a technical, stand alone document separate from the Comprehensive Plan. This chapter provides an overview summary of the larger document (see Appendix C).

This plan meets the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. The Local Surface Water Management Plan also seeks consistency with the goals and policies of the two watershed districts having jurisdiction within Maple Plain: Minnehaha Creek Watershed District and Pioneer Sarah Creek Watershed Management Commission; and with the requirements and guidance provided in the Metropolitan Council's 2030 Water Resources Management Policy Plan.

Regional System Statement

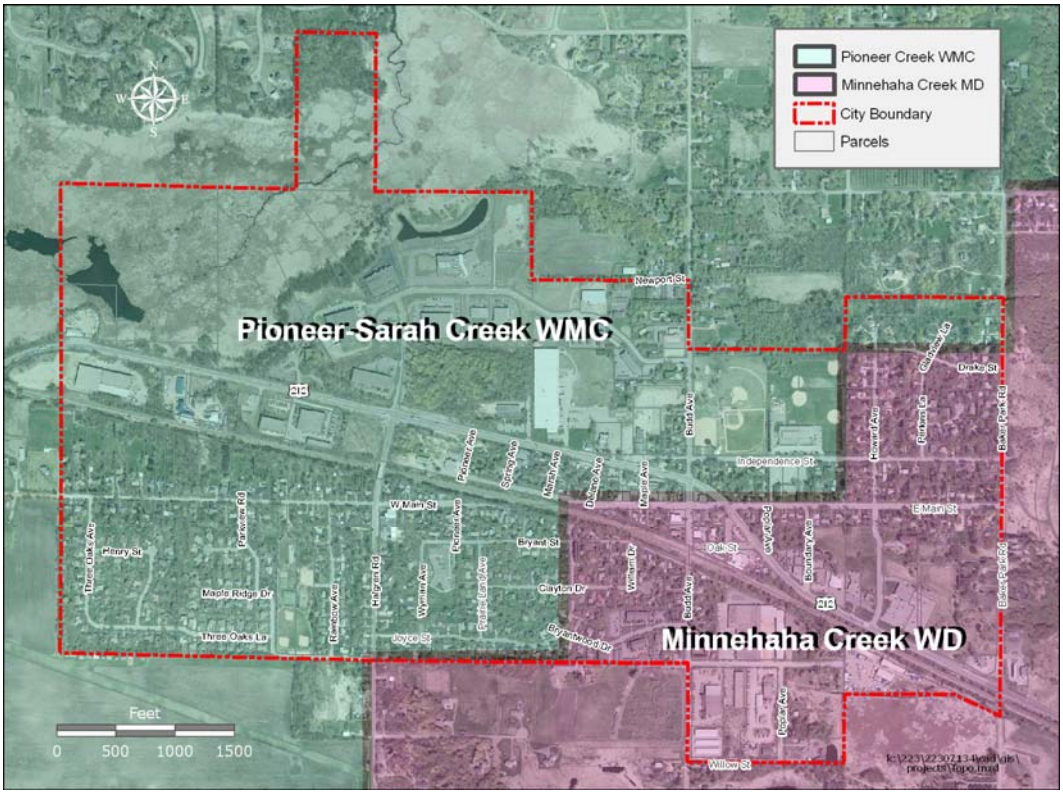
The following discussion summarizes Metropolitan Council's Maple Plain System Statement in regard to surface water management.

In 1995, Minnesota Statutes section 473.859, subd. 2, was amended to make the local surface water management plan required by Minnesota Statutes section 103B.235 a part of the land use plan of the local comprehensive plan. Section 103B.235 provides that a local surface water management plan should be prepared once a watershed plan for the area has been approved. Section 103B.235 also generally identifies the content requirements for the plan. The Local Surface Water Management Plan must be submitted to the watershed management organization(s) within which the community is located and to the Metropolitan Council for its review. Appendix B-2 of Metropolitan Council's Water Resources Management Policy Plan outlines the statutory requirements for content.

Maple Plain lies within the Minnehaha Creek Watershed District and the Pioneer Sarah Creek Watershed Management Commission. The Pioneer Sarah Creek Watershed Plan was approved by Board of Water and Soil Resources in 2004. The Minnehaha Creek Watershed Plan was approved by the Board of Water and Soil Resources in 1997. Therefore, Maple Plain was required to update its local surface water management plan by the end of 2006. Maple Plain chose to prepare its local surface water management plan as part of its comprehensive plan update rather than proceed independently in 2006. The plan was to be submitted to the

Council for its review concurrent with the review by the watershed management organizations. Failure to have an updated local surface water management plan consistent with the content requirements found in Appendix B-2 of the Water Resources Management Policy Plan would result in a metropolitan system impact.

Figure 7-1: Watershed Management Organization



Metropolitan Council has expanded the content required by statute. This expanded content is outlined in Appendix B-2 of the Water Resources Management Policy Plan and is summarized here:

- A strong policy statement toward non-degradation of surface water resources.
- Adoption of official controls that control peak runoff rates (for the 2, 10, and 100-year rainfall events) and lead to total suspended solids and total phosphorus reductions of 80% and 50% respectively.
- Preparation of wetland management plans.
- Inclusion of funding mechanisms that support implementation and enforcement.

- Integration of Maple Plain's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit into the Surface Water Management Plan.
- Assessment of issues and corrective actions and Maple Plain's actions to assist in solving the issues identified.
- Acknowledgement of impaired waters to which the City drains and Maple Plain's perceived role in future Total Maximum Daily Loads (TMDLs).
- A capital improvement plan that relates to the issues and corrective actions.
- An erosion and sediment control ordinance consistent with requirements in the National Pollutant Discharge Elimination System (NPDES) Stormwater Construction Permit.
- Require infiltration of the first ½-inch of runoff of impervious surfaces where soils lend themselves to this practice.

Other requirements based on direct guidance from the Metropolitan Council are addressed more specifically in Maple Plain's Local Surface Water Management Plan (see Appendix C).

Major Policy Changes for Maple Plain

The major policy changes relate to infiltration and water quality treatment for both new development and redevelopment. Maple Plain is fully developed, so implementation of infiltration and water quality improvements will occur within a diverse set of redevelopment projects both large and small. These projects will vary in regard to the feasibility of retrofitting infiltration and water quality. As a result Maple Plain's redevelopment infiltration and water quality policies must provide flexibility so that the quality of the City's drainage improves without impeding redevelopment activity.

Maple Plain's development/redevelopment goal is to seize every opportunity to retrofit rate control, infiltration, and water quality treatment. While this goal emphasizes taking advantage of opportunities that present themselves, the City will also take specific steps through its own capital improvement projects to obtain a minimum 10% phosphorus load reduction from existing developments, roadways, neighborhoods and impervious surfaces. This phosphorus load reduction strategy is mandated in Minnehaha Creek Watershed District areas of the City. Maple Plain intends to seek these reductions city-wide. The 10%

reduction in phosphorus loading is a city-wide goal. Individual development and redevelopment sites are required to provide higher levels of treatment to the extent that individual sites lend themselves to this.

The Local Surface Water Management Plan includes policies that mandate water quality treatment and infiltration according to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit. These policies apply to projects that create new impervious surfaces area where none previously existed. For redevelopment projects where existing impervious surfaces are replaced with new, the policies require strong consideration of infiltration and water quality retrofits to these existing surfaces. If a project proposer cannot meet the infiltration and water quality retrofit targets, an explanation must be provided in the development application as to why meeting the targets is not feasible within their project.

As noted, the 10% phosphorus load reduction applies only to existing surfaces. Developers of new impervious surfaces must provide Best Management Practices (BMPs) to maintain existing runoff volume and reduce phosphorus loading to 10% below existing conditions.

Another notable change reflected in Maple Plain's Local Surface Water Management Plan is the dedication of stormwater utility funds for stormwater improvements on municipal projects including street reconstruction projections. Such efforts fall within Maple Plain's overall strategy of reducing existing phosphorus loads by 10%.

The Local Surface Water Management Plan requires the use of functions and values assessments as a companion to the wetland delineations that typically accompany development applications. Wetland delineations show where wetlands exist but do not tell the City whether these wetlands have value. A functions and values assessment gives the City a snapshot of the vegetative and habitat qualities of each wetland. This allows more thorough consideration of wetland impacts. Within the constraints of current law, cities have flexibility in how to use wetlands for stormwater storage.

With its Local Surface Water Management Plan, Maple Plain moves to control negative stormwater impacts to wetlands by identifying specific vegetation and wildlife within wetlands and determining whether urban stormwater might negatively affect this vegetation and wildlife. For instance, a wetland with little vegetative diversity and slight susceptibility to urban stormwater might become an important component of the flood control and ponding system. In contrast, wetlands with more diverse vegetation that are more susceptible to urban

stormwater impacts might be protected by limiting the amount of urban stormwater discharged to them. Regardless a wetland's susceptibility, future urban development that discharges to Maple Plain's wetlands must provide upstream water quality treatment.

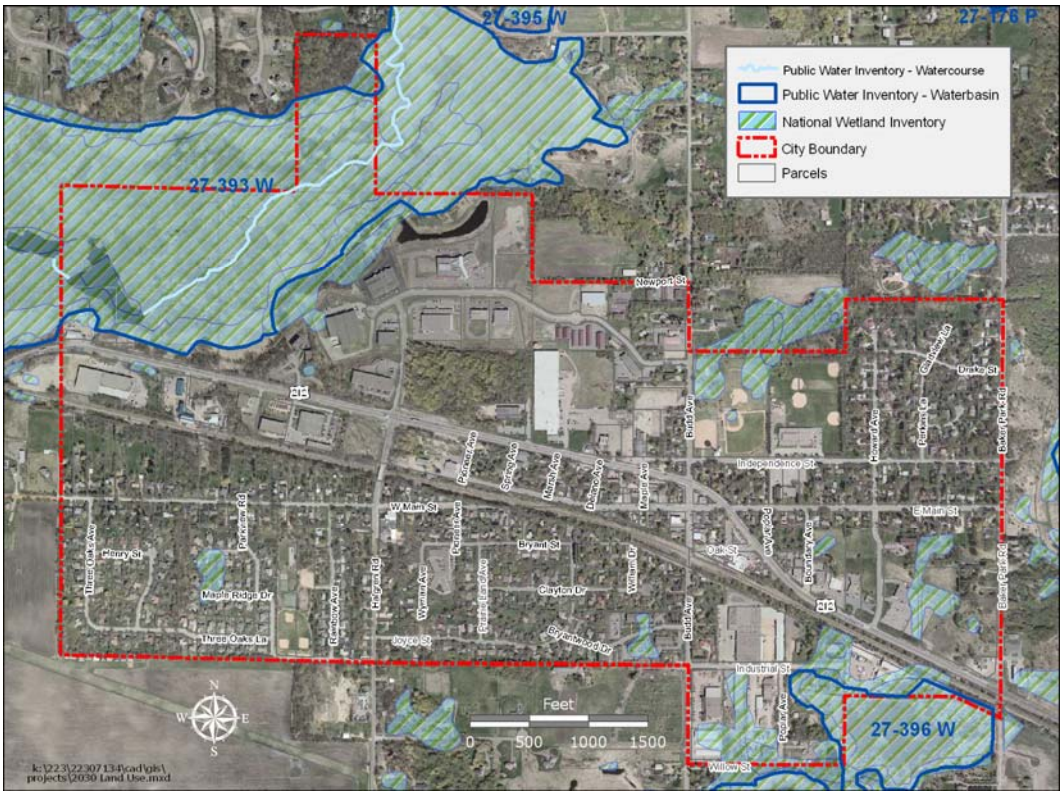


Figure 7-2: National Wetlands Inventory and DNR Public Waters

Maple Plain's Surface Water Management Assessment

The Minnehaha Creek Watershed District completed hydrologic and hydraulic modeling for areas in Maple Plain within its jurisdiction. Within Maple Plain the model did not identify any landlocked areas, locations of known flooding, or locations of significant erosion. There are no key conservation areas located in Maple Plain, as identified by the watershed district.

Through their study, Minnehaha Creek Watershed District quantified the phosphorus loading to the various bays of Lake Minnetonka, many of which are impaired due to nutrient loadings. Maple Plain discharges into the Painters Creek sub-watershed of the Watershed, which ultimately drains to Jennings Bay of Lake

Minnetonka. In response to phosphorus loading impairing water quality in Lake Minnetonka, the Watershed requires local plans to incorporate a phosphorus reduction strategy. For Maple Plain, this strategy must accomplish 13 pounds per year reduction in phosphorus loading. Based on a cursory loading assessment presented in Maple Plain's Local Surface Water Management Plan, the City must reduce its overall phosphorus loading by 10% to achieve the 13 pound reduction. Maple Plain intends to achieve the reduction by 2030. Maple Plain has committed to applying the phosphorus reduction strategy city-wide.

Neither the Pioneer-Sarah Creek Watershed Management Commission nor the City has undergone a wetland functions and values assessment. The 2003 Watershed Management Plan states consideration of doing such a study.

The Minnehaha Creek Watershed District performed a Functional Assessment of Wetlands from 2001-2003 in the Painters Creek subwatershed, in which a portion of Maple Plain is located. The study identified two small pockets of forested wetlands and one large shallow marsh wetland. The western pocket of forested wetland was classified as Preserve, and the eastern pocket was not classified. A majority of the large shallow marsh wetland was classified as Manage 2, with a smaller portion of it classified as Manage 3. None of the wetlands located within the Minnehaha Creek Watershed District's portion of Maple Plain were noted for having exceptional or high values for aesthetics, fish habitat, vegetative diversity, or wildlife habitat. The eastern pocket of forested wetland was identified as having moderate restoration potential, but the other forested wetland and shallow marsh wetland were not evaluated in the study for restoration potential.

The Minnesota Pollution Control Agency has designated the City of Maple Plain as a National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) community. Maple Plain's most recent application for NPDES coverage was submitted in 2006 with approval received in 2008/2009. The permit application outlined Maple Plain's Stormwater Pollution Prevention Plan (SWPPP) to address six minimum control measures:

- Public education
- Public involvement
- Illicit discharge detection and elimination
- Construction site runoff control
- Post-construction runoff control
- Pollution prevention in municipal operations

The City's SWPPP contains several Best Management Practices (BMPs) within each of the listed control measures. These were identified using a self-evaluation and input process with City Staff.

Many of the goals and policies discussed in the Local Surface Water Management plan are directly related to requirements listed in the NPDES program. As a result, the Implementation Section of the plan references the items listed in the City's SWPPP.

Issues and Corrective Actions

As required by statute and Metropolitan Council requirements, the Maple Plain Local Surface Water Management Plan identifies water resources issues that Maple Plain might have some responsibility for or participation in. Corrective actions are presented for each issue. In some cases Maple Plain's role is prominent in the corrective action. In the cases of more regional issues, Maple Plain's role is less prominent support role. The implementation plan is built around addressing more local issues through city-led corrective actions.

Goals and Policies

The City has a strong interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development and redevelopment, and fiscal responsibility. Maple Plain promotes sustainable stormwater management practices for meeting its water resource management goals. The City residents value their small town atmosphere, sense of community, learning opportunities through its Discovery Center, and natural setting adjacent Baker Park Reserve, wetlands, and creeks. Sustainable stormwater management is well-aligned with the City's values. Sustainable practices capture rain water as near as possible to the point where it fell and avoid collecting and conveying runoff through gutters, catch basins and pipes. Rather, sustainable practices look to the absorption and infiltration of runoff through innovative and aesthetically pleasing landscape design and conserved natural areas.

The Maple Plain Local Surface Water Management Plan provides goals and policies in the following areas:

- Land Development and Redevelopment
- Water Resource Management
- Management of Floodplains and Natural Areas
- City-wide Program Elements
- Support of Other Agencies

Land Development and Redevelopment

The land development and redevelopment policies recognize that Maple Plain is a fully-developed community and that focuses on redevelopment rather than new development. In light of this distinction, Maple Plain's policies focus on retrofitting rate control, infiltration, and water quality treatment. The policies set minimum standards that reflect the requirements of the NPDES Construction Stormwater Permit. The policies also set higher targets that challenge development and redevelopment projects to provide not just the required mitigation for new impervious surfaces but also to mitigate for existing impervious surfaces. The policies are written under the presumption that retrofit mitigation is typically feasible, and where it is not proposed very specific reasons must be provided as to why it is not feasible.

Water Resource Management

Maple Plain's water resource management goals and policies reflect how the City intends to protect its own and the region's wetlands, lakes and streams. In these policies lie support for Three Rivers Park District and Minnehaha Creek Watershed District toward improving the water quality of Lake Katrina and Jennings Bay in Lake Minnetonka. With lakes and streams, Maple Plain's policies reflect a desire to improve the quality of its own discharge, but that this discharge is only a small part of the whole. Consequently, Maple Plain's efforts alone cannot improve the quality of these surface water resources. In its wetland policies, Maple Plain outlines future steps to augment wetland protection within its borders including a new requirement that a function and values assessment be conducted when a project involves wetland.

Management of Floodplains and Natural Areas

These goals and policies outline Maple Plain's commitment to protecting flood plain and natural areas.

City-wide Program Elements

Formally, Maple Plain's city-wide program consists of its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit activities. More informally, the City envisions a city-wide program of promoting sustainable stormwater management practices. Sustainable stormwater management mimics nature by integrating stormwater into development and utilizing it as a resource, not a nuisance. This approach limits runoff and pollutants leaving a site, and thereby reduces the effects of urbanization on water resources.

Stormwater is often considered a waste product requiring disposal from developed areas as quickly as possible. A wide range of design possibilities becomes available when stormwater runoff is viewed as a resource that takes advantage of the benefits of water including irrigation, groundwater recharge, and wildlife habitat. Taking into account natural drainage features and balancing infiltration, evaporation, transpiration, and surface flow will minimize impacts and protect water resources. Maple Plain's stormwater management program looks to infiltrate, detain, or retain stormwater as close to where the rain falls as possible.

Maple Plain's rate control, infiltration, and water quality policies lead to sustainable stormwater design at the development and redevelopment scale. On a smaller scale, that of the individual homeowner and individual lot, a different approach is necessary. Maple Plain's goals and policies facilitate this different approach by recognizing that the City must take the lead on educating its residents on how to implement sustainable practices on their lots.

Support of Other Agencies

As a small community, Maple Plain has a limited impact on resources that might have many square miles of drainage. None the less, Maple Plain can have an affect out of proportion to its size by serving as an example of how sustainable stormwater practices can be retrofited into an already built environment. Maple Plain's support of other agencies like its watershed districts is best provided by serving as a prominent example of sustainable stormwater management.

Implementation Plan

Phosphorus Reduction and Capital Improvement Plan

The City developed an implementation program based on the information developed in its assessment and review of Issues and Corrective Actions. This program reflects the needs and concerns of many stakeholders including the City Council, city staff, citizens, property owners and watershed management organizations. The implementation program also reflects the City's funding capability and limitations to this capability. Consequently, among the issues and corrective actions identified not all appear as implementation items. Some are not there because Maple Plain's role as a supporter of more regional efforts and those regional efforts are not underway. Some corrective actions do not appear as implementation items because other priorities, such as phosphorus reduction or repairing erosion, take precedence.

The implementation program consists of three parts: phosphorus reduction plan, planned activities and potential activities. The phosphorus reduction plan is a requirement of the Minnehaha Creek Watershed District. The planned activities are the water resources-related activities outlined in the City's Capital Improvement Plan and have funding sources identified. Potential activities and potential funding are discussed for consideration for the period between the end of the Capital Improvement Plan period and the end of the comprehensive planning period (2013-2030).

The planned activities within the Minnehaha Creek Watershed District portion of the City will be assessed for phosphorus reduction potential in order to determine progress made in reducing phosphorus loads to Painters Creek and ultimately Jennings Bay of Lake Minnetonka. Additionally, the City will review past activities – going back to the year 2000 – as to whether any phosphorus reduction occurred there. The Watershed has set a goal of 13 pounds per year total phosphorus reduction during the comprehensive planning period. Maple Plain's Phosphorus Reduction Plan includes a five-year projection of reduction for specific projects outlined in the City's capital improvement plan. The annual report to Minnehaha Creek Watershed District will include an assessment of projects for one additional year, as well as potential activities under consideration for implementation in the next five years. The phosphorus reduction strategy will be applied city-wide though reporting will focus on the MCWD portions of the City.

The City's current Capital Improvement Plan includes several projects that directly address issues identified in the Local Surface Water Management Plan. Additionally, several projects have potential to include rate control, infiltration and water quality retrofits and thus provides phosphorus reduction under the City's Phosphorus Reduction Strategy.

Local Surface Water Plan Administration

Review and adoption of Maple Plain's Local Surface Water Management Plan will follow the procedure outlined in Minnesota Statutes 103B.235:

> *'After consideration but before adoption by the governing body, each local government unit shall submit its water management plan to the watershed management organization[s] for review for consistency with the watershed plan. The organization[s] shall have 60 days to complete its review.'*
>
> *'Concurrently with its submission of its local water management plan to the watershed management organization, each local government unit shall submit its water management plan to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the local plan. The council's 45-day review period shall run concurrently with the 60-day review period by the watershed management organization. The Metropolitan Council shall submit its comments to the watershed management organization and shall send a copy of its comments to the local government unit.'*
>
> *'After approval of the local plan by the watershed management organization[s], the local government unit shall adopt and implement its plan within 120 days, and shall amend its official controls accordingly within 180 days.'*

Periodic amendments may be required to incorporate changes in local practices. In particular, changes in the two applicable Watershed Management Plans may require revisions to this plan. Plan amendments will be incorporated by following the review and adoption steps outlined above.

Maple Plain's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit requires an annual public hearing. At the time this hearing is held each year the City will also submit to each of the watershed jurisdictions a report on the amount of phosphorus reduction obtained through projects that year. This report will also update the five-year projected capital improvement plan by one year and will thus present a revised estimate of project phosphorus reduction.

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IMPLEMENTATION

INTRODUCTION

The City of Maple Plain 2040 Comprehensive Plan outlines a vision for future growth and development. Over the lifespan of this plan, the City will work to enhance its image through public improvements and private site design. Flexibility in redevelopment, creation of a new town centre, enhancements to the historical downtown, and improvements to public areas—including parks and trails—will be key to achieving the City's goals.

OFFICIAL CONTROLS

The City currently has zoning controls in place over all properties within the city. The City will want to review the existing ordinances, primarily the Design Standards to ensure that their use will allow for the realization of the City's ultimate vision for the community. The City will continually monitor existing regulations as proposals come forward to identify existing roadblocks that may need to be addressed. Identified changes to official controls within this plan include:

Official Control Change:	***Completion Date:***
• Review of all existing ordinances to ensure compatibility with the 2040 Comprehensive Plan	**2019-2020**
• Revise the ordinance to remove the OP-Office Park zoning district and incorporate changes into the MU-D zoning district as necessary	**2019-2020**

In addition to the official control changes identified above, the City will continually review its local ordinances to ensure proper controls are in place to achieve the goals outlined in this plan. Additionally, the City will continue to review and update this plan on a regular basis. Periodic amendments to the Plan may be initiated by citizens, land owners, the Planning Commission and/or the City Council. All proposed Comprehensive Plan amendments require a Public Hearing.

HOUSING IMPLEMENTATION PROGRAM

The City will continue to work on developing and redeveloping properties in the City to achieve a continuum of housing options for all of its residents. Affordable senior housing along with the known need for new, rental housing units will be the focus of the City in the short term. The City will assess and respond to market conditions as opportunities arise for the development of affordable housing. To this extent, the City will look for those projects that integrate affordable housing with market rate housing where possible.

CAPITAL IMPROVEMENTS PROGRAMMING

A Capital Improvement Plan (CIP) is a 5- to 10-year analysis and programmed expenditure plan for the City's infrastructure (streets, utilities, parks, trails, etc.), vehicles and equipment, and public buildings. A CIP identifies the major capital projects identified by the community, their potential cost and financing methods. The timeframe for completing each project is largely dependent on funding.

The primary benefit of developing and implementing a CIP is a tool that assists the City Council in directing financial resources, impacts on future budgets, and future funding options. The CIP document is also an important communications tool to help residents understand how, where and why their tax dollars are spent.

The City of Maple Plain continually evaluates and adopts budgets necessary to address expected revenues and expenditures, and planned improvements for the upcoming years. This includes short-term and long-term capital improvement needs. The City has prepared a CIP for the next five (5) years impacting transportation, water and wastewater, and parks, trails and open space facilities.

CITY OF MAPLE PLAIN
2019 - 2023 Comprehensive Capital Improvement Plan

Department	Item	2019	2020	2021	2022	2023	Five Year Total
Transportation							
	Main Street and Rainbow Seal Coat and Crack Fill	$ 35,600					$ 35,600
	Three Oaks Ave, Henry St, Meadow Ln, Parkview Rd, Joyce St, Prairieland Ave, Clayton Dr, Bryantwood Dr, William Dr, Independence St, Pioneer Creek Dr, and Halgren Rd Seal Coat and Crack Fill		$ 167,400				$ 167,400
	Main St. E. and Maple Ave. Reconstruct			$ 1,609,800			$ 1,609,800
	Oak St, Boundary Ave, Howard Ave, Bryant St, Manchester Dr, Spring Ave, and Marsch Ave Seal Coat and Crack Fill				$ 51,800		$ 51,800
	Amy Ln, Maple Ridge Dr, Parkview Rd Mill/Overlay				$ 274,700		$ 274,700
	Budd Ave Seal Coat and Crack Fill					$ 19,200	$ 19,200
	Yearly Patching	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 250,000
	Replace Ford F350 Truck		$ 50,000				$ 50,000
	Upgrade Ford F150 Truck to Ford F550 Truck		$ 65,000				$ 65,000
Sewers							
	Replace sanitary sewer- Main St. E. and Maple Ave			$ 313,200			$ 313,200
	Purchase camera for I&I POS inspections	$ 12,000					$ 12,000
Parks							
	Northside Park Improvements	$300,000					$ 300,000
	New Picnic Shelter- Rainbow				$ 40,000		$ 40,000
	Repair Hockey Rink- Rainbow		$ 15,000				$ 15,000
	Warming house expansion		$ 30,000				$ 30,000
	Playground- Rainbow			$ 100,000	$ -		$ 100,000
Water Supply							
	Seal Well 2	$ 15,000					$ 15,000
	Replace watermain- Main St. E. and Maple Ave			$ 248,300			
Open Space Facilities							
		$ -	$ -	$ -		$ -	$ -

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GLOSSARY OF TERMS

Definitions of terms used in the City of Maple Plain's Comprehensive Plan.

Adaptive Reuse - Rehabilitation or renovation of existing buildings or structures for uses other than the current ones.

Affordable Housing - Housing that a low- or moderate-income household can occupy without spending more than 30% of household income. Also incorporates the idea of quality (safe and decent dwelling), choice of location, and an adequate supply.

Agricultural Area - Large contiguous land areas planned and zoned to maintain agriculture as the primary land use.

Americans with Disabilities Act (ADA) – 1990 federal act provides a framework and approach for ending discrimination in employment and access to services against persons with disabilities. The goals of the ADA are to assure that persons with disabilities have equality of opportunity, a chance to fully participate in society, are able to live independently, and can be economically self-sufficient.

Aquifer - Saturated geologic formation that will yield a sufficient quantity of water to serve as a private or public water supply.

Assessment - An appraisal, judgment or evaluation based on information provided by inventories and informed by specified criteria.

Benchmark - Indicator that shows progress toward meeting Framework goals.

Best Management Practices (BMPs) - Recommendations regarding development and maintenance of varied land uses, aimed at limiting the effects of development, such as soil erosion and stormwater runoff, on the natural environment. See the Council's Urban Small Sites Best Management Practices Manual for specific examples of best management practices.

Brownfield - Industrial or commercial property that is abandoned or underused and environmentally contaminated, especially one considered as a potential site for redevelopment.

BWSR - Board of Soil and Water Resources

Capital Improvement Program (CIP) – An itemized program for a five year prospective period, and any amendments thereto, subject to at least biennial review, setting forth the schedule, timing, and details of specific contemplated capital improvements by year, together with their estimated cost, the need for each improvement, financial sources, and the financial impact that the improvements will have on the local governmental unit or school district.

Center - Place of sufficient scale, density and mix of uses, where there is convenient access to housing, jobs, daily services, shopping and recreation. (See transit-oriented development.)

Clustering – Design technique to allow a reasonable amount of land development while conserving rural character, such as farmland, natural areas, and open views.

Community Facilities Plan - Compilation of policy statements, goals, standards, maps and action programs for guiding the future development of the public or semipublic facilities of the municipality such as recreational, educational and cultural facilities. (M.S. 462.352)

Commuter Rail - Public transportation mode using passenger trains operating on railroad right-of-way. Generally, commuter rail systems are integrated with other regional transit providers to permit transfers throughout the metropolitan region.

Compatibility - With the plans of other local jurisdictions, including school districts. The third of the three review criteria the Metropolitan Council uses to evaluate local comprehensive plans.

Comprehensive Plan - Plan for the development of an area, which recognizes the physical, economic, social, political, aesthetic, and related factors of the community involved. (Compare with local comprehensive plan.)

Conformance - With metropolitan system plans for transportation, water resources and parks. The first of three review criteria the Metropolitan Council uses to evaluate local comprehensive plans.

Conservation - Natural resources management to prevent waste, destruction or degradation.

Consistency - With requirements of the Metropolitan Land Planning Act and Council policies. The second of three review criteria the Metropolitan Council uses to evaluate local comprehensive plans.

Context Sensitive Design – Inclusive design approach that integrates and balances community, aesthetic, and environmental values with traditional transportation safety and performance goals. Includes roadway standards and development practices that are flexible and sensitive to community values, balancing economic, social, aesthetic and environmental objectives.

Cost-Sharing – Contractual arrangement whereby a local unit of government or other governmental body enters into an agreement to pay for part of a physical facility or a service; includes subscription transit service.

D

Degradation – A decline to a lower condition, quality, or level.

Density - Number of dwelling units per net residential acre of land.

Density range – Scale associated with residential land use and zoning designations that specifies the minimum and maximum number of dwelling units that may be built per acre of land.

Developable Land - Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas including surface waters, wetlands, floodplains, parks, steep slopes.

Developed Communities – Centrally located portion of the region, including the central cities of Minneapolis, and St. Paul and adjacent suburbs. Communities generally 85 percent developed or more at the end of 2000, and contiguous to one another.

F

Failing System - System that discharges sewage to a seepage pit, cesspool, drywell, or leaching pit, and any system with less than three feet of soil or sand between the bottom of the distribution medium and the saturated soil level or bedrock. In addition, any system posing an imminent threat to public health or safety shall be considered failing.

Forecast - In the Framework, a calculation of growth in population, households and jobs based on data about current conditions (e.g., the 2000 Census) that is extrapolated into the future.

Functional Assessment of Wetlands – Wetland functions include water quality improvement, floodwater storage, fish and wildlife habitat, aesthetics, and biological productivity. The value of a wetland is an estimate of the importance or worth of one or more of its functions to society. A functional assessment is one that makes distinctions among different wetlands based on function and values.

G

Groundwater - Supply of freshwater in an aquifer.

Growth Management Strategy – Metropolitan's Council's selection of an urban growth and development pattern for the region and the measures to implement it.

H

Household - Group of all the people who occupy a housing unit.

Housing and Redevelopment Authority (HRA) - Municipal department, agency, or authority which exercises the powers of a housing and redevelopment authority pursuant to M.S. 469.003.

Housing Stock – An inventory or description of a communities existing residences by age, condition, structure type, number of bedrooms, rental cost or value.

I

I/I – Inflow and Infiltration

Illicit Discharge – Non-stormwater discharges to the storm sewer or surface water system.

Impact Fees – Charges to individuals or groups intended to supplement existing funding and to account for the increased use of public facilities or services.

Impaired Water – A surface water that is not meeting a designated use, such as swimming or fishing, due to pollution. The Clean Water Act requires states to publish, every two years, an updated list of streams and lakes that are not meeting their designated uses because of excess pollutants.

Individual On-Site Septic System - See on-site septic treatment systems.

Individual Sewage Treatment System (ISTS) - System for disposing and treating human and domestic waste, such as a septic tank and soil absorption system or other system allowed by the state and city. This includes community drainfields, where a common on-site system serves several properties.

Infill - Development or redevelopment of land that has been bypassed, remained vacant, and/or is underused.

Infiltration – In wastewater, seepage of groundwater into sewer pipes through cracks or joints in the pipes. In stormwater, seepage of runoff water into the ground.

Inflow - Flow from a single point into sewer pipes, such as discharges from sump pumps and foundation drains, or stormwater that enters openings in the sewer access covers.

Infrastructure - Fixed facilities, such as sewer lines and roadways, that serve existing and new development and redevelopment.

Intensity of Development – Relative measure of development as defined by characteristics such as the number of dwelling units per acre, number of employees, amount of traffic generated, and amount of site covered.

Land Planning Act, Metropolitan Land Planning Act - Minnesota Statutes directing the Metropolitan Council to adopt long-range, comprehensive policy plans for transportation, airports, wastewater services, and parks and open space. It authorizes the Metropolitan Council to review the comprehensive plans of local governments.

Land Supply - Available amount of developable land.

Land Use Plan - Compilation of policy statements, goals, standards, and maps, and action programs for guiding the future development of private and public property. The term includes a plan designating types of uses for the entire municipality as well as a specialized plan showing specific areas or specific types of land uses, such as residential, commercial, industrial, public or semipublic uses or any combination of such uses. A land use plan may also include the proposed densities for development.

Land use categories – Standardized system for classifying and designating the appropriate use of properties.

Lifecycle Housing - Varied housing options that meet people's preferences and circumstances at all of life's stages, providing a balance of single-family homes, apartments, condominiums, townhomes, and senior housing for independent living or with a range of assisted-living services.

Life-Cycle Maintenance – Concept of keeping a facility useable at least through its design life by conducting scheduled maintenance.

Low Impact Development (**LID**) – Simple management and preservation technique used to restore aquatic, terrestrial and biologic natural resources.

Low Income - Household income that is 50% or less ($38,350 for 2003, adjusted for family size) of the area median income, as defined by the U.S. Dept. of Housing and Urban Development.

M

Master Plan - According to Minn. Stat. 473.301, Subd. 3, is a plan describing the boundaries of specific parks or other regional recreation open space and the nature of their development and use.

Median Income - Income measure used by the U.S. Dept. of Housing and Urban Development to define income categories; 2003 area median income for the Twin Cities metropolitan area is $75,300.

mgd – million gallons/day

Mixed-Use - Single building containing more than one type of land use or a single development of more than one building and use, where the different land uses are in close proximity, planned as a unified, complementary whole, and functionally integrated with transit, pedestrian access and parking areas.

Mobility – Person or persons' ability to travel from one place to another.

Moderate Income - Household income that is 80% ($61,360 for 2003, adjusted for family size) of the area.

Multifamily Housing - Residential structure with two or more separate dwelling units.

Multimodal Link – The connection between two or more passenger transportation methods (such as bicycle, walking, automobile and transit).

Multi-modal - Utilizing more than one means of transportation.

MUSA – Municipal Urban Service Area

MS4 (Municipal Separate Storm Sewer System) - A municipal separate storm sewer system is a conveyance or system of conveyances owned or operated by a state, city, town, borough, county, parish, district, association, or other public body having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes.

NPDES (National Pollution Discharge Elimination System) – The federal stormwater regulations, which are part of the National Pollutant Discharge Elimination System (NPDES) permit program, were developed in two phases. The U.S. Environmental Protection Agency first promulgated federal regulations establishing the Phase I Stormwater Program in 1990. The MPCA promulgated rules to establish the Phase I Stormwater Program at the state level in 1994 and 1995. The Phase II federal regulations, promulgated in 1999, expanded the scope of the NPDES Stormwater Program to include smaller MS4s in urbanized areas, construction activities that disturb between one and five acres of land, and smaller municipally owned industrial activities.

Nationwide Urban Runoff Program (NURP) – From 1978 through 1983, the EPA conducted a comprehensive study of urban runoff called the Nationwide Urban Runoff Program (NURP). This study provided a better understanding of the nature of urban pollutants from various urban land uses. This study focused primarily on monitoring runoff from residential, commercial, and industrial land and clearly presents information on the magnitude and variety of pollutants encountered in the urban environment.

Net Density - The result of dividing the number of total dwelling units existing on a site by the net acre in acres. Net density is expressed as dwelling units per net acre.

Net Residential Area – The total area of a site for residential development excluding arterial streets right of ways, wetlands and water features, and other publicly dedicated improvements such as parks. Net area is expressed in acres or square feet.

Net Residential Density – The number of dwelling units per acre of land when the average involved includes only the land devoted to residential uses and excludes such areas arterial streets right of ways, wetlands and water features, and other publicly dedicated improvements such as parks. Net density is expressed as dwelling units per net acre.

Nondegradation – A concept found in Minnesota statute that considers increases in runoff volume, phosphorus loading, and total suspended solids loading over a 1988 baseline conditions. Nondegradation is satisfied when the current discharge of these three does not exceed 1988 conditions.

Nonpoint Source Pollution – Sources of pollution that are less definable and usually cover broad areas of land such as agricultural land with fertilizers or automobile pollution that are carried away by runoff. Discharge of waste cannot be located to a specific source.

O

Official Controls - Ordinances and rules which control the physical development of a city, county or town or any part thereof or any detail thereof and implement the general objectives of the comprehensive plan. Official controls may include ordinances establishing zoning, subdivision controls, site plan regulations, sanitary codes, building codes and official maps.

Open Space – Describes public and private land that is generally natural in character. It may support agricultural production, or provide outdoor recreational opportunities, or protect cultural and natural resources. It contains relatively few buildings or other human-made structures. Depending on the location and surrounding land use, open space can range in size from a small city plaza or neighborhood park of several hundred square feet, corridors linking neighborhoods of several acres to pasture, croplands or natural areas and parks covering thousands of acres.

Ordinance - Law or regulation set forth and adopted by a governmental authority, usually a city or county.

P

Package Treatment Plant - Wastewater treatment systems that serve developments larger than individual homes, served by septic systems, and urban development served by municipal wastewater systems. They serve uses country clubs, resorts, rural townships or military institutions.

Planned Land Use – The long range plan for the desirable use of land in the city as officially adopted by the planning commission. The purpose of such plan includes to serve as a guide in the zoning to meet the changing needs of the community in the subdividing and development or redevelopment of land.

Planning Area – Designation assigned by the Metropolitan Council and illustrated on Regional Growth Strategy Map or Planning Area map. The planning area designation incorporates the current land use plans of the region's communities and identifies the specific policies a community must use in the 2008 comprehensive plan update process.

Point Source Pollution – A discrete source from which pollution is generated before it enters receiving waters, such as a sewer outfall, smokestack, or industrial waste pipe.

Policy - Specific statement of guiding actions that expresses the general direction that the Metropolitan Council intends to follow in order to meet its goals.

Preservation – Preservation activities are directed toward the elimination of deficiencies and major cost replacement of existing facilities. Preservation is not meant to include work that will increase the level of service by the addition of traffic lanes.

R

Redevelopment - Process by which an existing building, structure, or developed area is adaptively reused, rehabilitated, restored, renovated and/or expanded.

Regional Development Framework – The Metropolitan Council plan that sets a general direction for future development patterns in the metropolitan area and establishes guidelines for making decisions about major regional facilities that are needed to support the commercial, industrial and residential development of the area.

Regional Infrastructure - Infrastructure pertaining to any of the Council's four systems - wastewater services, transportation, parks and open space, and airports.

Reinvestment - Investment in redevelopment, infill or adaptive reuse.

Residential Acre - An acre of residential land that includes local streets, alleys, parks and locally protected natural resources. Does not major transportation rights-of-way, major parks and open space, wetlands identified in the National Wetlands Inventory, and steep slopes steeper than an 18 percent grade.

ROW – right of way

Runway – Any prepared landing and takeoff surface of an airport.

Runway Protection Zone (RPZ) Federally Defines "Clear Zone" - An areas beyond the end of a runway, under control of the airport owner, in which the presence of structures or other obstructions are controlled to permit a minimum angle of flight for takeoff and landing operations.

Rural Area – Part of the seven-county area lying outside the metropolitan urban service area limits.

Rural Centers - The small towns, like Belle Plaine and St. Francis, located throughout the rural area.

Rural Growth Center - Rural Centers that are interested in and show a potential for urban growth.

Rural Residential - The land area identified in 4 communities (Ham Lake, Andover, Inver Grove Heights and Credit River Township) that are currently developed at one unit per 2 to 2 ½ acres or less, with no plans to provide urban infrastructure such as centralized wastewater treatment.

S

SAC – sewer access charge

Septage - Solids and liquids removed during periodic maintenance of an individual sewage treatment system, or solids and liquids which are removed from toilet waste treatment devices such as a holding tank.

Sewer Flow – The total volume of organic waste and wastewater generated by residential, industrial, commercial, institutional or other establishments and carried off site by a sewer system. Sewer flow is expressed as gallons per day per day.

Sewered - Development served by a wastewater treatment facility owned, constructed or operated by a local governmental unit or the council.

Sewershed - Area tributary to the MCES interceptor system at a single point is a sewershed.

Smart Growth – Pro-growth approach to guiding development into more convenient patterns and into areas where infrastructure allows growth to be sustained over the long term. It envisions developments of complementary land uses, including affordable and lifecycle housing, retail and offices, on interconnected streets amenable to walking, bicycling or using transit or car to reach destinations.

Staging - A plan that documents the planned timing of development and growth in an area so that the development and growth are coordinated with needed public infrastructure in accordance with the adopted policies and plans.

SWPPP (Stormwater Pollution Prevention Program) - A plan for stormwater discharge that includes erosion prevention measures and sediment controls that, when implemented, will decrease soil erosion on a parcel of land and will decrease off-site nonpoint pollution.

Stormwater - Surplus surface water generated by rainfall and snowmelt that does not seep into the earth but flows overland to rivers, lakes or streams.

Sump Pump - An automatic submersible pump that removes water from wet foundations and basements.

Surcharging - To fill beyond the capacity of the pipe; overflow.

Surface Water - Water on the earth's surface exposed to the atmosphere such as rivers, lakes and creeks.

Sustainable Development - Development that maintains or enhances economic opportunity and community well-being while protecting and/or restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

System Statements – As defined in Minn. Stat. Sec. 473.855-856, statements the Council sends to local governments and school districts containing information and direction necessary for preparing comprehensive plan amendments.

Total Maximum Daily Load (TMDL)- Calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards and an allocation of that amount to the pollutants source.

Total Phosphorus (TP)- A nutrient essential to the growth of organisms, and is commonly the limiting factor in the primary productivity of surface water bodies. Total phosphorus includes the amount of phosphorus in solution (reactive) and in particle form. Agricultural drainage, wastewater, and certain industrial discharges are typical sources of phosphorus, and can contribute to the eutrophication of surface water bodies.

Total Suspended Solids (TSS) - Very small particles remaining dispersed in a liquid due to turbulent mixing that can create turbid or cloudy conditions.

U

Unsewered - Development served by a private sewer facility.

W

Wastewater - Water carrying waste from homes and commercial and industrial facilities.

Watershed Management Organizations - Watershed management organizations and watershed districts are special purpose units of local government whose boundaries generally follow those of a natural watershed. Watershed districts are local units of government that work to solve and prevent water-related problems. The functions of a watershed district may include development and implementation of a watershed management plan, review and approval of local water management plans, regulation of the use and development of land, and construction, repair, improvement, and management of drainage systems.

WWTP – Wastewater Treatment Plant

Z

Zoning - The classification of land by types of uses permitted and prohibited and by densities and intensities permitted and prohibited. Regulations govern lot size, building placement, and other development standards.