city of spring park

comprehensive plan

SP
SPRING PARK
On Lake Minnetonka

2030

RESOLUTION NO. 09-21

CITY OF SPRING PARK
HENNEPIN COUNTY, MINNESOTA

A RESOLUTION ESTABLISHING FINDINGS OF FACT AND ADOPTING THE SPRING PARK 2030 COMPREHENSIVE PLAN

WHEREAS, the City of Spring Park has finalized the draft of the 2030 Comprehensive Plan; and after having conducted a public hearing relative thereto, the Planning Commission recommended that the 2030 Comprehensive Plan be approved; and

WHEREAS, the City Council of the City of Spring Park now makes the following findings of fact:

1. The Spring Park Comprehensive Plan Task Force completed their review of the draft of the 2030 Comprehensive Plan on June 26, 2008 and recommended its approval; and

2. The Planning Commission held a public hearing at their August 8, 208 meeting, took comments from the public, closed the public hearing, and recommended that the 2030 Comprehensive Plan be forwarded to the adjoining jurisdictions, affected agencies, and the Metropolitan Council for review; and

3. The City Council, at their September 15, 2008 meeting, adopted the recommendation of the Planning Commission and authorized the 2030 Comprehensive Plan to be forwarded to adjoining jurisdictions, affected agencies, and the Metropolitan Council for review.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF SPRING PARK THAT THE SPRING PARK 2030 COMPREHENSIVE PLAN BE ADOPTED SUBJECT TO FINAL REVIEW AND APPROVAL OF THE METROPOLITAN COUNCIL.

Adopted by the City Council of the City of Spring Park this 18th day of May 2009.

Sarah Reinhardt
Mayor Sarah Reinhardt

ATTEST:

Wendy Lewin, City Clerk

So as to insure that the City's Comprehensive Plan is truly reflective of the community's interests and objectives and is responsive to constituent concerns, the work must be directed from the outset by the views and opinions of officials, citizens, and property owners. As an initial phase of Spring Park's 2030 Comprehensive Plan Update, elected and appointed City officials and City staff were consulted to gain insight into local perspectives and community goals. The following individuals contributed their time and effort to formulate the 2030 Spring Park Comprehensive Plan:

Spring Park 2030 Comprehensive Plan Committee

Mayor
Jerry Rockvam

City Council
Gary Hughes
Sarah Reinhardt
Tom Scanlon
Joanna Widmer

Residents
Joel Buttenhoff/Joe Sullivan
Jeff Hoffman
Rob Lahammer, Presbyterian Homes
Kathy Olson
Kevin O'Neil
Rick Rehman
Bill Weeks
Chester Yanik

Planning Commission
Norina Dove
Mike Mason
Bill Tyler

City Staff
Sarah Friesen
D.J. Goman
Wendy Lewin

List of Maps:

List of Tables:

introduction

SPRING PARK

On Lake Minnetonka

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comprehensive plan

In response to local needs and State Statute requirements, the City of Spring Park has conducted a planning process to update its Comprehensive Plan through the year 2030. The Comprehensive Plan is intended to define the land use development/redevelopment, transportation, and infrastructure goals of the community as a means of defining Spring Park's future growth and vision of development.

Beyond the desires and needs of the local community, the Metropolitan Council's 2030 Regional Development Framework also establishes a regional context in which the City of Spring Park must define its role and direct its future. This Regional Development Framework mandates specific regional criteria that must be addressed in the 2030 Comprehensive Plan Update.

The City's past planning efforts and the regional planning documents listed below provide the foundation for Spring Park's Comprehensive Plan Update.

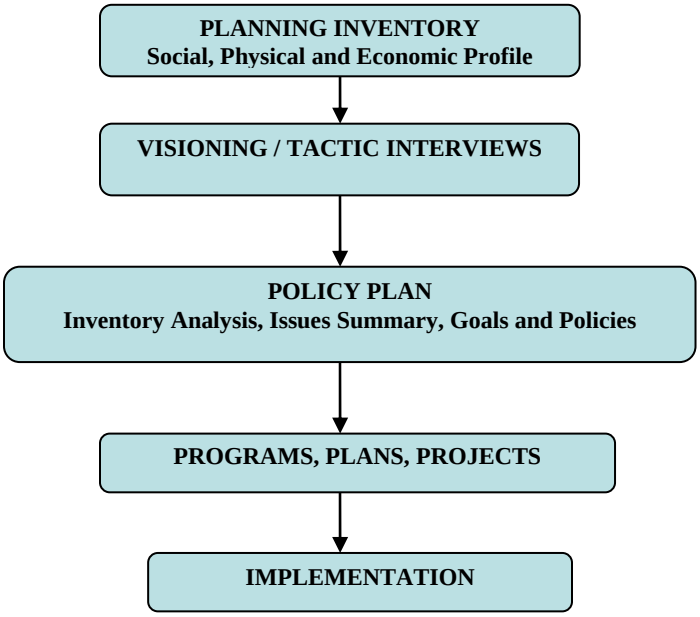
1991 Spring Park Comprehensive Plan, Amended 1998
2004 2030 Regional Development Framework – Metropolitan Council
2006 Spring Park Commercial Guidelines

This section outlines the Comprehensive Plan process, local planning history, and regional context that defines Spring Park's future planning efforts.

THE LOCAL PROCESS

Comprehensive planning is a broad problem solving process. As such, the effort involves well defined steps which begin with issue and goal identification and progresses to proposed solutions and actions. The diagram below illustrates the general series of stages which have been undertaken in Spring Park's comprehensive planning process.

COMPREHENSIVE PLANNING PROCESS



The first phase of the 2030 Spring Park Comprehensive Plan planning process is the assembly of a Planning Inventory. The Inventory identifies the current social, environmental, and physical facts and trends that define the community. The Inventory provides empirical data from which to build recommendations and strategies for future land use and transportation planning.

As important as the empirical data of the Inventory is the defining of Spring Park's local perspectives on community vision, development issues, and future City priorities. These perceptions will guide the comprehensive planning process. The Vision/Tactics involved interviews with the City Council, City staff and major property owners. The result of those interviews represents the second section of this plan.

The third phase of the process involves the formation of the Policy Plan. Following an intensive Inventory and Issues Analysis, the City will define desired community planning goals that it wishes to accomplish over the next 22 years (2008 to 2030). Policies will then be formulated to define actions for accomplishing these desired goals. Phase four involves the formulation of the Development Framework, which provides specific plan recommendations for land use, natural

environment, infrastructure, transportation and housing as directed by the Metropolitan Council's Regional Development Framework.

These plans and recommendations give attention on a City-wide scale. The fifth and final stage is the Implementation phase. The Land Planning Act requires each community's development plans and regulations to be consistent with the Comprehensive Plan. In this regard, the fifth phase involves an analysis of the City's implementation tools such as development regulations, capital improvement plans and housing programs to ensure that they will effectively serve to implement the Comprehensive Plan's goals.

Throughout the Comprehensive Planning process, each phase will be presented and reviewed by the Spring Park Comprehensive Plan Review Committee. The Review Committee is charged with developing a draft Comprehensive Plan document that address the community's issues and lays the foundation for community planning and land use development through 2030. Following this input and discussion, the plan will be revised and formally reviewed through a public hearing by the Planning Commission and formal adoption by the City Council. The process will be concluded with referrals of the Comprehensive Plan Update to the surrounding jurisdictions and affected units of government as well as the Metropolitan Council.

PLANNING HISTORY

Spring Park is a city of approximately 210 acres, located on Lake Minnetonka in Hennepin County. The first land abstracts that include the territory of Spring Park date back to the 1850s. In 1882, James J. Hill extended his Great Northern Railroad to Spring Park, making the City a thriving tourist destination. The Historic Hotel Del Otero, the Del Otero Cottages, and Casino in Spring Park contributed to the resort attractions of the area. While the hotel burned down in 1945, Spring Park remained an attractive resort destination.

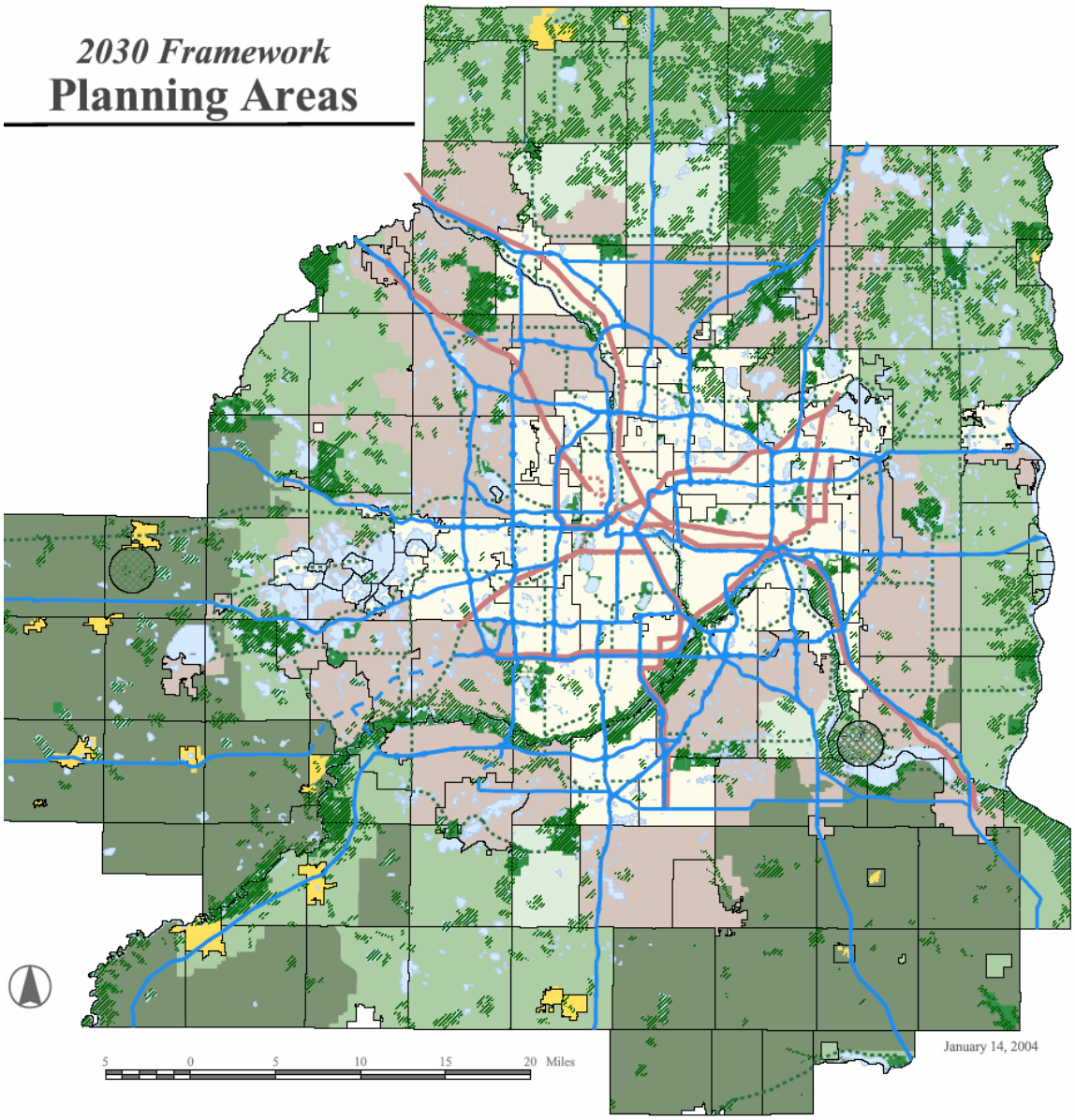
The City of Spring Park incorporated as a statutory city in 1951 with a Mayor and four Council Members. At the time of its incorporation, Spring Park's population was 221 residents. The City of Spring Park has moved away from its seasonal tourist history to be a fully developed community that provides a broad variety of housing options, commercial services, and industrial land uses. The 2000 U.S. Census estimates Spring Park's population at 1,717 residents.

The residential land use patterns and property divisions are reflective of the City's history as a lake resort community characterized by small narrow residential lots. The Comprehensive Plan must recognize these historical conditions and blend them with the land use trends and market realities that may be anticipated through 2030.

REGIONAL PLANNING

As part of the mandated comprehensive planning process, Spring Park is required to coordinate its comprehensive plan in a manner consistent with the 2030 Regional Development Framework as adopted by the Metropolitan Council. As shown in the following map, Spring Park has been classified as a "developed community" within the 2030 Regional Development Framework's growth strategies. The regional objectives for a developed community include:

- Work with Spring Park to accommodate growth in a flexible, connected and efficient manner.
- Plan and invest in multi-modal transportation choices based on the full range of cost and benefits, to slow the growth of congestion and serve the region's economic needs.
- Encourage expanded choices in housing location and types, and improve access to jobs and opportunities.
- Work with local and regional partners to conserve, protect and enhance the region's vital natural resources.



NOTE: Please refer to the Comprehensive Plans Composite map or the Regional Systems maps for the most recent information. These maps are available at the Metropolitan Council Data Center (651) 602-1140.

Geographic Planning Areas

Urban Planning Areas
- Developing Area
- Developed Area

Rural Planning Areas
- Rural Center
- Agricultural
- Diversified Rural
- Rural Residential

Additional Information
- Regional Natural Resource Areas (includes Terrestrial and Wetland Areas)
  SOURCE: Metro DNR in coordination with the Metropolitan Council
- Regional Park
- Proposed Regional Park
- Regional Trail
- Transit 2025 Corridor
- Principal Arterial
- Open Water

Metropolitan Council

inventory

SPRING PARK

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INTRODUCTION

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

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

Housing Profile – This profile describes the Spring Park housing stock by age, tenure, housing costs, and type.

Natural Environment Profile - This profile identifies the characteristics of Spring Park's natural environment that influences land use development including topography, soils, watershed, lakes, rivers, and wetlands.

Community Facilities Profile – This profile provides insight on public utilities, service regulations addressing wastewater, water supply, schools, and public safety.

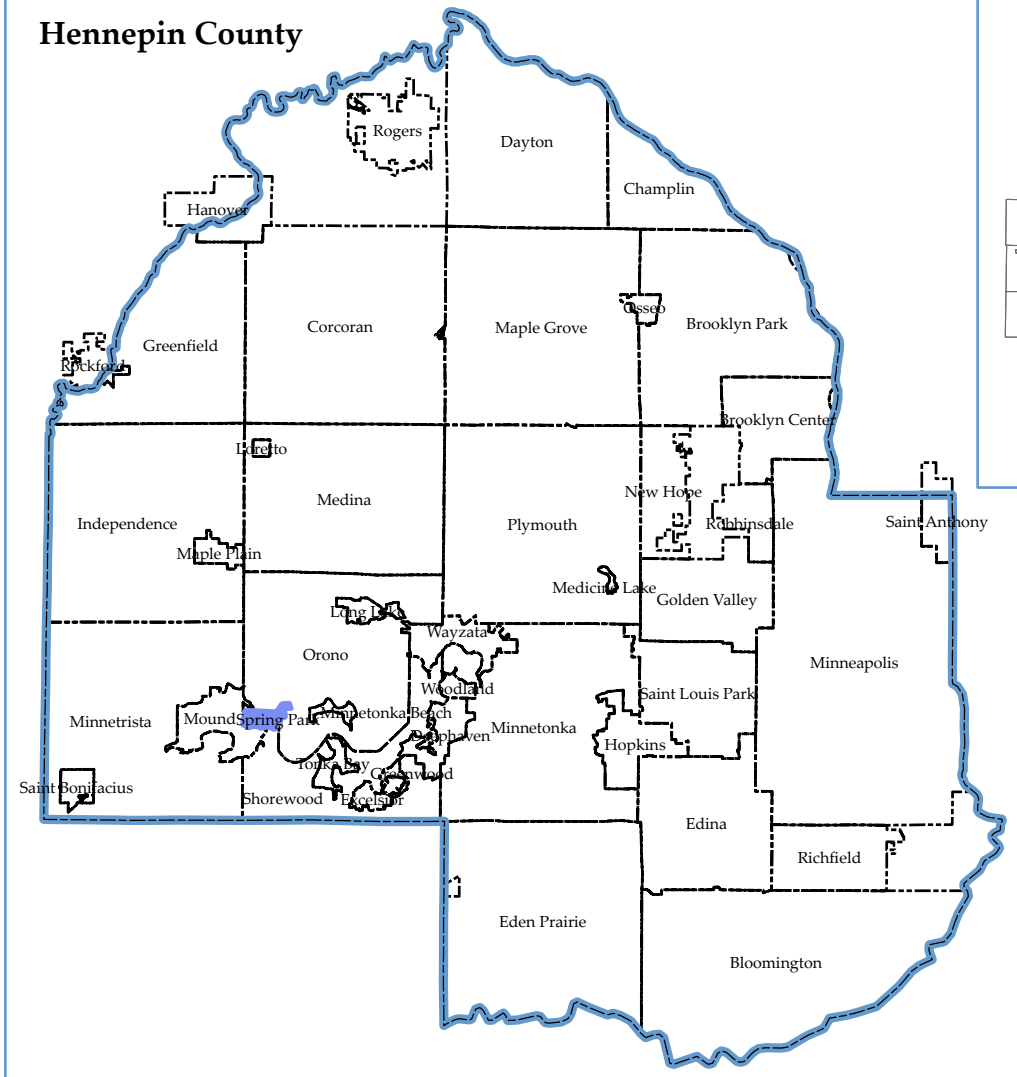
Transportation Profile – This profile describes the transportation infrastructure available in Spring Park. The transportation profile includes functional classification of roadways, traffic volumes, aviation, and transit opportunities.

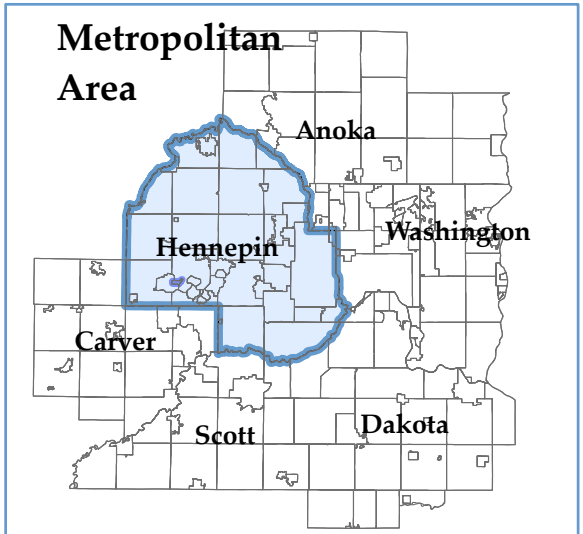
Land Use Profile – This profile describes, locates and quantifies the various land uses within the City of Spring Park.

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

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

Regional Map





City of Spring Park

Legend

- Hennepin County
- Spring Park
- Municipalities

Prepared:November 21, 2007

Feet

0 8,000 16,000 32,000 48,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
Telephone: 763.231.2555 Facsimile: 763.231.2561 planners@nacplanning.com

SOCIO-ECONOMIC PROFILE

Population and Household Growth Trends

The statistics in the following table illustrate the trends in population within Spring Park, surrounding cities, and Hennepin County. Between 1990 and 2010, the City grew at a rate of 17.8 percent, while Hennepin County grew at a comparable 17.6 percent rate. The growth rate through 2030 for the Spring Park is projected to be greater than the surrounding communities, but will slow down in comparison to Hennepin County.

Population Growth

	1990	2000	2006*	2010 Projection*	1990-2010 % Change	2030 Projection*	2000-2030 % Change
Spring Park	1,571	1,717	1,900	1,850	17.8%	2,100	22.3%
Mound	9,634	9,435	9,800	10,400	7.9%	11,400	20.8%
Tonka Bay	1,472	1,547	1,525	1,800	22.3%	1,800	16.4%
Minnetonka Beach	573	614	595	640	11.7%	660	7.5%
Hennepin County	1,032,431	1,116,200	1,150,912	1,213,950	17.6%	1,384,800	24.1%

Source: U.S. Census 1990, 2000 *Estimate from Minnesota State Demographer

The second table below represents the Metropolitan Council's forecast for Spring Park through 2030. Population is shown by the Met Council to gradually increase 100 to 150 people every ten years. As a fully developed community the new household growth for the expanding population is anticipated to occur through redevelopment of existing properties.

Metropolitan Council Population Forecast Through 2030 for Spring Park

	1990	2000	2010 Forecast	2020 Forecast	2030 Forecast
Population	1,571	1,717	1,850	2,000	2,100
Households	741	930	1,000	1,080	1,130
Employment	807	1,028	1,330	1,690	1,800

Source: 1990, 2000 U.S. Census,
Metropolitan Council 2030 Regional Development Framework
Updated January 2008

In looking at the data for Spring Park since 1990, the number of households has steadily increased, while the number of persons per household has slightly declined. This is likely reflective of an increase in persons age 65 and over. It also reflects the natural trend of people having fewer children and the dynamics of the modern family. The 2006 estimate of population and households reflected below is from the State of Minnesota Demographer.

1990-2004 Spring Park Household Information

Year	Population	Households	Persons Per Household
1990	1,571	741	1.85
2000	1,717	930	1.63
2006	1,900	1,051	1.62

Source: U.S. Census 1990, 2000/Minnesota State Demographer

The 1990 and 2000 Census provides a demographic profile of the households in Spring Park as illustrated in the following table. As the table indicates, in 1990 of the total number of households in Spring Park, 126 contained at least one child and were considered families with children. In 2000, the number of households with at least one child slightly decreased to 107. The number of households without children increased slightly from 1990 to 2000. Data on the number of non-family households with children and without children was not available for the 1990 Census.

Spring Park 1990 and 2000 Household Type

Household Type	Total Number of Households		Households With Children		Households Without Children	
	1990	2000	1990	2000	1990	2000
Family-Married Couple	224	245	65	55	159	190
Family- Male Householder	22	34	14	21	8	13
Family- Female Householder	66	43	47	31	19	12
Total Family	312	322	126	107	186	215
Non-Family Households	429	608	N/A	2	N/A	606
Total Households	741	930	126	109	186	821

Source: U.S. Census 1990, 2000

Age Characteristics

The following table illustrates Spring Park's population by age group. School age population (under 18) declined between 1990 and 2000 by 6 percent. In 1990, the labor force represented the largest age group, at 56.2 percent. In 2000 this age group was again the City's largest, accounting for 58.8 percent of the total population. The retired age group represented 28.5 percent of the total population in 1990, and 31.9 percent in 2000. It is expected that the retired age group will become the fastest growing segment of the population in the coming decade. Changes in the demographics of the City and surrounding area will have significant planning implications for the future.

Spring Park Population Growth by Age Group					
Age Group	1990	1990%		2000	2000 %
School Age					
Under 18	241	15.3%		159	9.3%
Labor Force					
19-39	547	34.8%		549	32.0%
40-59	275	17.5%		397	23.1%
60-64	61	3.9%		64	3.7%
Sub-Total	883	56.2%		1,010	58.8%
Retired					
65-69	60	3.8%		34	2%
70-79	149	9.5%		153	8.9%
80+	238	15.2%		361	21.0%
Sub-Total	447	28.5%		548	31.9%
TOTAL	1,571	100%		1,717	100%
Source: U.S. Census 1990, 2000/Minnesota State Demographer					

Comparing age with surrounding communities in the table below, Spring Park had the oldest median population in 2000. But many adjacent communities also have a much higher median age when compared to Hennepin County. The population of these communities and the cost of homes may play a role in the age of the populations that live there. A higher median age in Spring Park could be due to the presence of Presbyterian Homes.

Median Age of Population Compared to Surrounding Communities (years)	
Spring Park	46.6
Mound	37.5
Tonka Bay	41.4
Minnetonka Beach	42.3
Hennepin County	34.9
Source: U.S. Census 2000	

Education

The following table illustrates education levels for residents ages 25 and over in 2000. An overall comparison of Spring Park to Hennepin County illustrates that Spring Park is below the larger regional area in education attainment according to the 2000 Census. The highest percentages of Spring Parks population are people who were high school graduates, obtain some college education or are bachelor degree holders.

2000 Educational Attainment (Ages 25 and over)				
	Spring Park		**Hennepin County**	
Level Attained	**2000**	**2000 %**	**2000**	**2000 %**
<9th Grade	60	4.2%	32,219	4.4%
9th to 12th Grade (no diploma)	102	7.2%	37,029	5.0%
High School Graduate	383	27.0%	156,947	21.2%
Some College (no degree)	358	25.2%	172,999	23.4%
Associate Degree	91	6.4%	51,845	7.0%
Bachelors Degree	343	24.2%	199,740	26.9%
Graduate Degree	83	5.8%	89,665	12.1%
TOTAL	1420	100%	740,444	100%
% of High School Grad +	88.6%		90.6%	
% of Bachelor's Degree +	30.0%		39.0%	
Source: U.S. Census 2000/Minnesota State Demographer				

Employment

Information from the 1990 and 2000 Census regarding employment demographics for Spring Park and Hennepin County are depicted in the table below. The majority of those employed in the City in 1990 were in Manufacturing. In 2000 the majority of those employed in the City were in Trade, Transportation, and Utilities. The second largest category was Manufacturing, employing 16.5 percent of the population in 2000. For Hennepin County, the majority of those employed in 1990 were in Manufacturing, and in 2000 the majority was in Trade, Transportation, and Utilities. Information from 2005, in the second table) indicates a similar pattern for the County.

1990 and 2000 Occupations								
	Spring Park				Hennepin County			
	1990	%	2000	%	1990	%	2000	%
Natural Resources and Mining	3	.4	12	1.4	4,224	.8	720	.10
Construction	65	8.1	50	5.7	22,958	4.0	29,938	3.6
Manufacturing	164	20.3	144	16.5	98,217	17.2	86,656	10.4
Trade, Transportation and Utilities	107	13.3	179	20.5	71,672	12.5	164,343	19.7
Information and Retail	139	17.2	32	3.7	97,344	17.0	22,336	2.7
Financial Activities	75	9.3	89	10.2	54,946	9.6	88,792	10.6
Professional and Business Services	49	6.1	106	12.2	36,666	6.4	153,015	18.3
Education and Health Services	92	11.4	119	13.6	93,537	16.4	102,326	12.3
Leisure and Hospitality	48	5.9	87	10	25,717	4.5	72,091	8.6
Other Services	59	7.3	24	2.8	51,250	9.0	27,181	3.3
Government	6	.7	30	3.4	14,894	2.6	86,534	10.4
TOTAL	**807**	**100**	**872**	**100**	**571,425**	**100**	**833,932**	**100**
Source: U.S. Census 1990, 2000/Minnesota State Demographer								

The following table represents the most recent employment demographics for Hennepin County.

2005 Hennepin County		
	2005	Percent
Natural Resources and Mining	720	.10%
Construction	29,938	3.6%
Manufacturing	86,656	10.4%
Trade, Transportation and Utilities	164,343	19.7%
Information	22,336	2.7%
Financial Activities	88,792	10.6%
Professional and Business Services	153,015	18.3%
Education and Health Services	102,326	12.3%
Leisure and Hospitality	72,091	8.6%
Other Services	27,181	3.3%
Government	86,534	10.4%
TOTAL	**833,932**	**100%**
Source: Minnesota Dept of Employment and Economic Development		

As illustrated in the tables below, the Metropolitan Council is predicting that Spring Park will have 1,800 employment opportunities within the community. The Met Council's estimate of an additional 900 employment opportunities within Spring Park by 2030 contrasts with the State Demographers employment estimates which indicates the loss of 128 jobs. It is overly optimistic for the Met Council to believe that Spring Park will create 900 more jobs between 2006 and 2030.

Number of Jobs Within Spring Park Between 2000-2006							
Employment	**2000**	**2003**	**2004**	**2005**	**2006**	**change**	**% change**
Spring Park	1,028	1,060	1,031	980	900	-128	-12.5%
Source: Met Council 04/07, State Demographer							

Met Council 2030 Employment Forecast for Spring Park				
	2000	**2010**	**2020**	**2030**
Spring Park	1,028	1,330	1,690	1,800
Source: Metropolitan Council				

Travel Time to Work

The travel time to work table below is broken up into 10, 15, 30 minute intervals. The majority of the population is traveling 44 minutes or less to work, which coincides with the average travel time of 30.2 minutes.

Spring Park Travel Time to Work 2000		
Total of Workers who did not work at home	792	100.0
Less than 10 minutes	108	13.6
10 to 19 minutes	133	16.7
20 to 29 minutes	180	22.7
30 to 44 minutes	252	31.8
45 to 59 minutes	56	7.1
60 to 89 minutes	29	3.7
90 or more minutes	34	4.3
Mean travel time to work (minutes)	30.2	(X)
Source: U.S. 2000 Census Bureau		

Household Income

The 1989 and 1999 Census data regarding median family income for Spring Park and Hennepin County is illustrated in the following tables. The 1999 Census data regarding per capita income is also shown below. The second table indicates household income ranges for Spring Park. The per capita income and median family income for the City is slightly above that of Hennepin County, according to data from 1999. However, the median family income for the City was below that of Hennepin County in 1999. Based on the Consumer Price Index inflation rate the incomes of Spring Park in comparison to Hennepin County have remained the same as the 1999.

1989 and 1999 Income				
	Per Capita Income	Median Family Income	Persons Below Poverty Level	Percent of Population
1989				
Spring Park	$18,089	$35,625	96	7.1%
Hennepin County	$18,496	$44,189	93,388	9.2%
1999				
Spring Park	$30,290	$42,969	131	8.8%
Hennepin County	$28,789	$65,985	90,384	8.36%
2006*				
Spring Park	$35,460	$50,304		
Hennepin County	$33,703	$77,249		
Source: U.S. Census 1990, 2000/Minnesota State Demographer/*2006 Income figured by using the Inflation Increase based on the Consumer Price Index				

The latter portion of the table above shows the number of individuals below the poverty line. While the incomes in Spring Park have grown over 10+ years the number of individuals below the poverty has also increased.

Spring Park 1989 and 1999 Household Income				
	1989		1999	
Category	Number of Households	Percent of Households	Number of Households	Percent of Households
Less than $10,000	108	14.5%	85	9.3%
$10,000 to $19,999	131	17.6%	154	16.7%
$20,000 to $39,999	264	35.5%	275	30%
$40,000 to $74,999	180	24.2%	243	26.5%
$75,000 to $99,999	34	4.6%	71	7.7%
$100,000 or more	26	3.6%	90	9.8%
TOTAL	743	100%	918	100%
Source: U.S. Census 1990, 2000/Minnesota State Demographer				

NATURAL RESOURCES PROFILE

Lake Minnetonka

Lake Minnetonka is the largest natural resource within the City of Spring Park. As a large recreational lake it is of prime importance to the citizens of the community and their livelihood. However, all areas of Lake Minnetonka have been classified as impaired by the Minnesota Pollution Control Agency. This classification comes from the amount of development surrounding lakes and the amount of direct runoff channeled into the waters.

Topography

Steep slopes are not a general concern in Spring Park, but there are several areas with slopes exceeding eighteen percent (18%). In these areas there is a cause for concern due to the fact that disruption of the existing ground cover or unauthorized grading may result in destabilization of the slope and result in erosion and sedimentation into the lake and/or adjacent wetlands.

Soils

Many areas of Spring Park have been built upon soils that have questionable to moderate limitation in terms of building site suitability. Since Spring Park is fully serviced by sanitary sewer, the primary consideration regarding the soils is their suitability for new and existing building sites. Factors such as slope, depth to water table, bearing capacity, volume change (shrink-swell potential) and potential for frost heave have definite influence on the development capability of a given site. In areas of questionable soils, soil testing and special construction techniques will be necessary to overcome the construction limitations. Due to the limited supply of available land for development or redevelopment and the value of shoreland property around Lake Minnetonka, these special development costs become less prohibitive.

Tree Preservation

The City of Spring Park contains significant numbers of oak, elm and other deciduous trees which contribute to the aesthetic quality of the community. In addition these trees play an important role in the function of the natural systems. To preserve the local tree stock, Spring Park has implemented their Shade Tree Ordinance (Section 40.61) for the monitoring, removal and replacement of diseased trees within the community. The Comprehensive Plan must include provisions for preserving these natural amenities and encourage further landscaping as part of future development.

Wetlands

The number of wetlands and natural buffer areas are few within the City due to dense small lot development through the majority of the community. Wetlands areas are located in the southwest and northeast corners of Spring Park. These wetlands are to be protected to preserve their role in the City's stormwater management system as well as providing habitat for wildlife.

Surface Water Quality

Spring Park is a lake oriented community surrounded by Lake Minnetonka. Surface water quality is a critical issue. According to the Minnesota Pollution Control Agency, West Arm Bay of Lake Minnetonka which lies north of Spring Park has the third worst water quality of all the tested areas of the lake. While it is recognized that development factors influencing or impacting the quality and/or use of the lake must be controlled, the question remains, who exercises this control? There are currently four government agencies which have jurisdiction, in one form or another, over the lake, including: the individual municipalities, the Lake District and the Minnesota Department of Natural Resources. Historically, the City manages its shoreland development and stormwater drainage is reviewed and approved by the Minnehaha Creek Watershed District.

Water Resources

City of Spring Park

Wetlands & Floodplains

- Deep Marsh
- Seasonally Flooded Basin or Flat
- Shallow Marsh
- Shallow Open Water
- Uplands Systems
- Wet Meadow
- Wooded Swamps
- Flood Plain Overlay District

Prepared: December 6, 2007

Feet

500 250 0 500 1,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

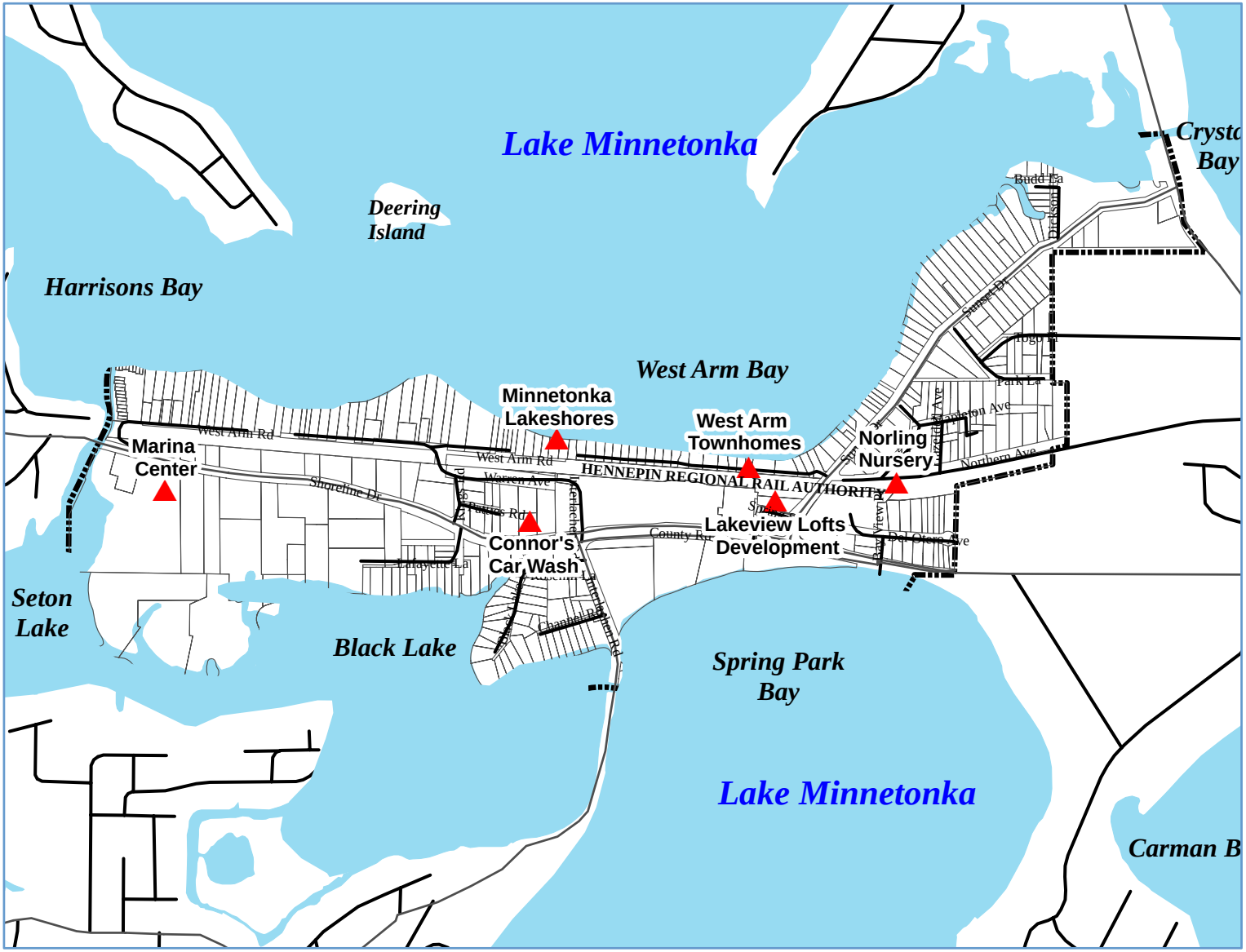
Air and Noise Pollution

Neither air nor noise pollution has been identified as being immediate problems in Spring Park. However, the planning program should provide means for preventing noise and air pollution from ever becoming a problem.

Polluted Sites

Six sites along and with Spring Park have voluntarily enrolled in the MPCA's Voluntary Investigation and Cleanup (VIC) Program. The VIC program allows buyers, sellers, developers or local governments to voluntarily investigate and, if necessary, clean up contaminated land to facilitate its sale, financing or redevelopment. Voluntary parties that complete investigation and/or cleanup activities under MPCA oversight can receive liability assurances that protect them from future Superfund liability. In some cases, the MPCA may use Institutional Controls as part of the overall site remedy and to notify interested parties of any property use conditions or restrictions.

Polluted Sites



City of Spring Park

Legend

- Voluntary Investigation & Cleanup Program
- Boundary
- Lakes

Feet

0 250 500 1,000 1,500

Source: Hennepin County, City of Spring Park, MN DNR, MPCA, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

EXISTING LAND USE AND ZONING PROFILE

Land Use

Spring Park is a fully developed City with 100 percent of the land within Spring Park's municipal boundaries lying within the Metropolitan Urban Service Area (MUSA). The 210 acres of the City are sandwiched between two bays of Lake Minnetonka. The majority of the land use is classified as single family and high density residential or commercial.

Existing Land Use Analysis			
Land Use	Acres	Percent of Total	Average Density Units Per Acre
Low Density Residential	69	26.1%	3.3
Medium Density Residential	13	4.7%	5.5
High Density Residential	51	19.1%	14.6
Mixed Use Residential	4	1.6%	41.5
Commercial	42	15.6%	NA
Industrial	9	3.4%	NA
Public	21	8.1%	NA
Vacant	1	.3%	NA
Open Water and Right-of-Way	56	21.1%	NA
TOTAL	**266**	**100.0%**	**8.8**

Residential Land Use Patterns

Residential land use occupies 51 percent of Spring Park total land area. The majority of the residential land use is Single Family; however, High Density is also a predominant land use with the City. Single Family homes can be found throughout the City, the majority of the homes site on small narrow lots. The high density is distributed in three large areas within the City as illustrated on the land use map.

Few lots are classified as medium density. The medium density lots are designated for twinhomes or townhomes. The breakdown of the land uses are illustrated in the table above. The City's residential development densities for each housing type exceed the Metropolitan Council standards for developed communities.

Commercial Land Use Patterns

Commercial development presently accounts for roughly 21 percent of the City's total land use. Spring Park's large commercial hub is located along County Road 15 on the west end of the community. Other commercial sites are scattered to east ending with Lord Fletchers at the eastern along County Road 15 and extending north along County Road 51 edge of the City. The

majority of the uses consist of boat sales and water recreation sales, restaurants, and medical clinics. Many of the others commercial locations provide offices or service retail. Other commercial needs like grocery stores and gas stations are met outside of the community.

Industrial Land Use Patterns

One industrial site is located in Spring Park. The seven acres site stretched along County Road 15 nearly in the center of the community. The industrial use has operated favorably within the City and provides jobs and tax base for the community.

Mixed Development

In the last few years mixed development has become a land use classification in Spring Park. Two large condo units with ground floor retail were built at the major crossroads of the community. The mixed use was a favorable option to redevelop blighted areas at a major community intersection. The mixed development land use occupies approximately four acres and is the building sites of Lakeview Lofts and Mist. The residential densities within the mixed use redevelopment projects average 41.5 units per buildable acre.

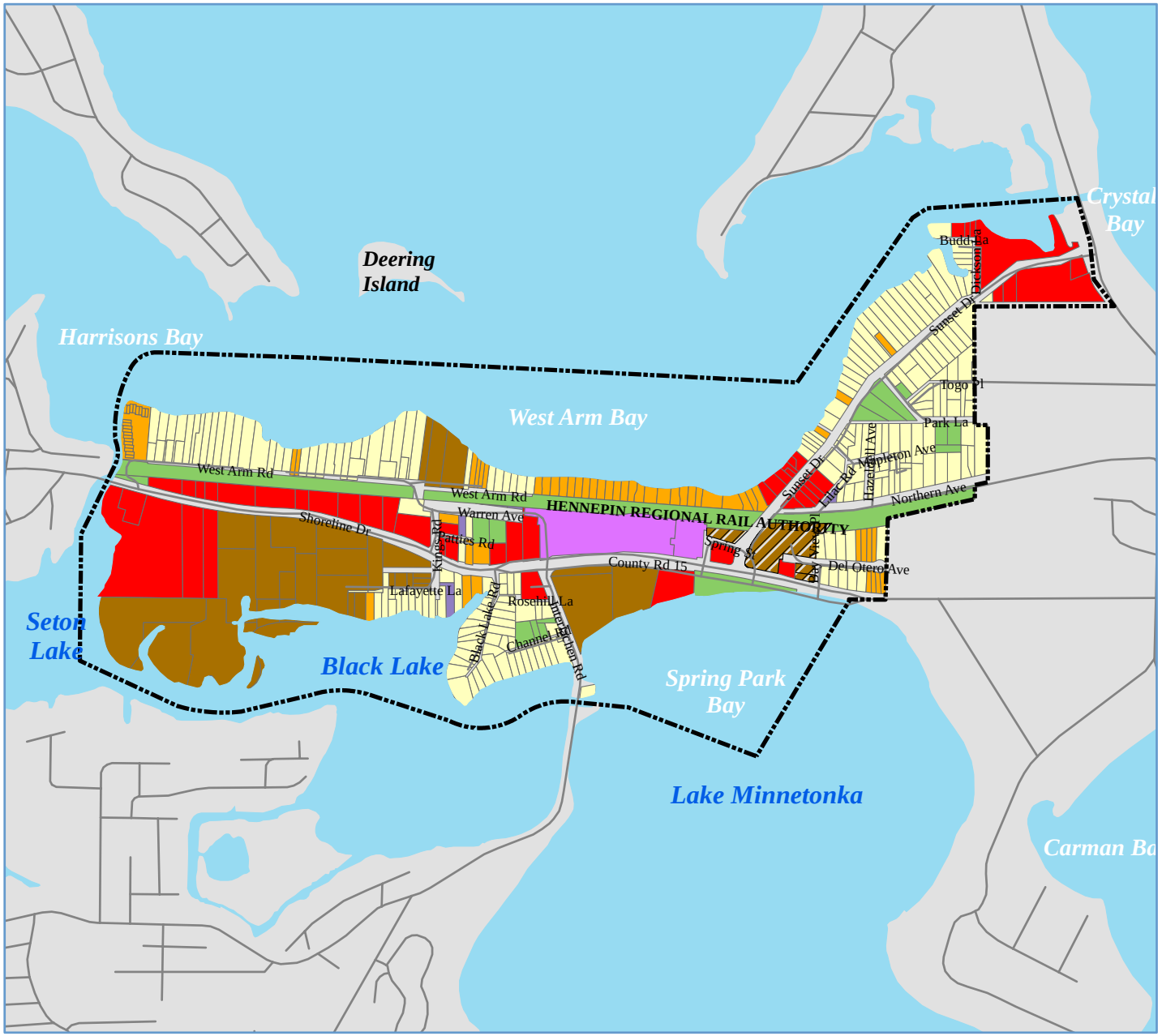
Public/Semi-Public and Park/Recreation Space

Approximately ten percent of Spring Park is set aside for public or semi-public use. The public recreation areas are made up of the two community parks and the boat launch, and a public amenity to be built is the bike trail along the Hennepin County rail line now owned by Hennepin County.

Historic Preservation

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

Existing Land Use



City of Spring Park

Existing Land Use

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use-Residential
- Seasonal Recreational
- Commercial
- Industrial
- Institutional
- Public
- Vacant

Prepared: May 6, 2008

Feet

0 245 490 980 1,470

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

Zoning

Spring Park is currently governed by the Spring Park Zoning and Subdivision Ordinances. Development applications are reviewed by the Planning Commission and subject to approval by the City Council.

The following map illustrates the current arrangement of zoning districts. An approximate statistical breakdown of the amount and proportion of land zoned for various uses is provided in the following table. A description of all zoning districts follows the zoning area table.

Spring Park Existing Zoning Analysis 2007		
Category	Acres	Percent of Total
R-1, Single & Two Family Residential	68.3	32.56%
R-2, Medium Density Residential	6.3	2.98%
R-3, High Density Residential	50.2	23.95%
C-1, General Commercial	34.0	16.19%
C-2, Shopping Center	16.6	7.93%
C-3, Health Care Facility	3.2	1.53%
C-4, Office Commercial	1.5	0.74%
M, Manufacturing	8.8	4.09%
P, Public/Semi- Public	20.9	9.98%
TOTAL	210.0	100.00%

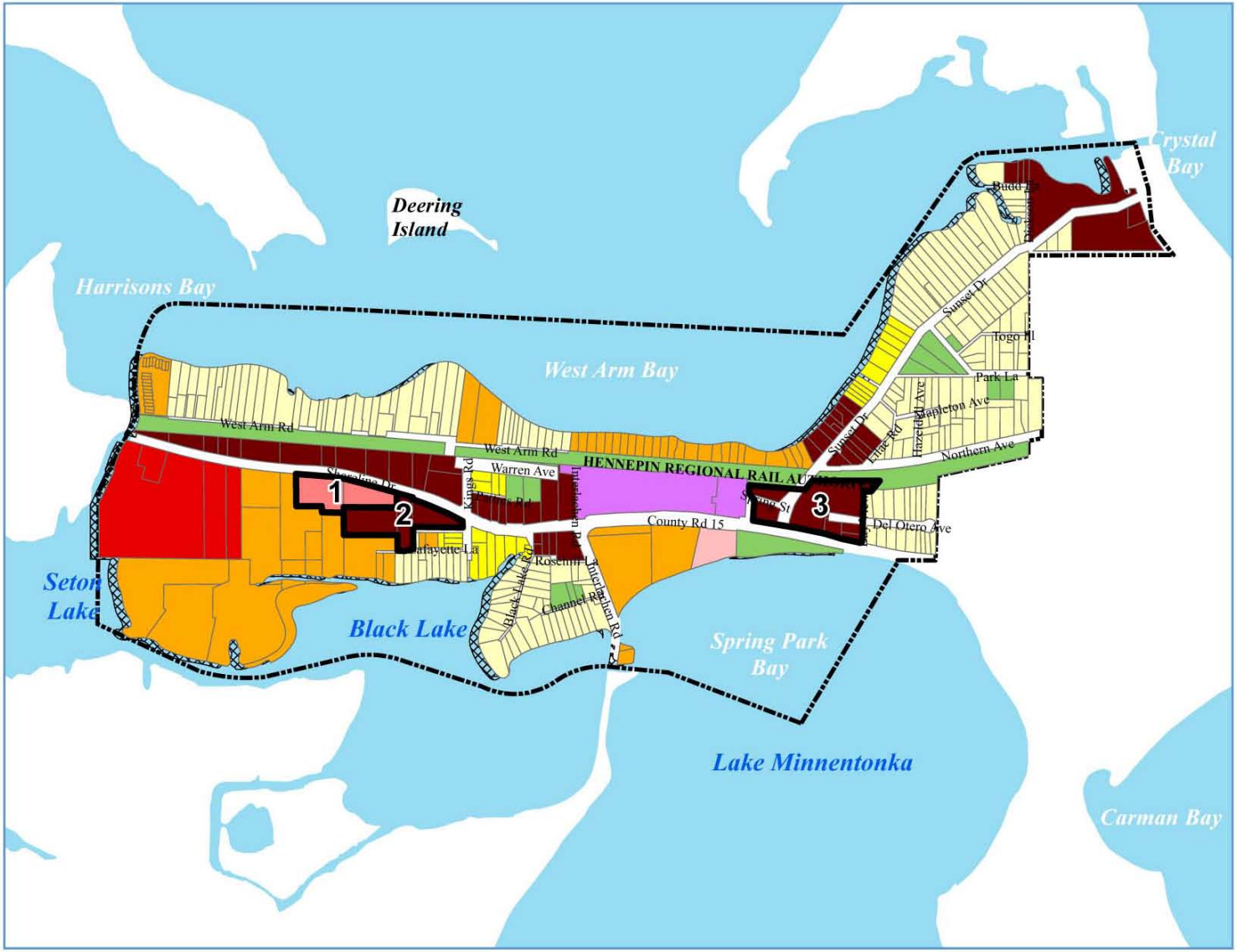
There appears to be some conflict between existing land use and existing zoning at three locations within the City.

Area 1 – C-4 Zoning. The area contains Presbyterian Homes Health Care Center and Nursing Home. The site is zoned C-4, Health Care Facility District which allows nursing homes, medical clinics, and elderly housing as permitted uses. Land use is predominantly high density residential as shown on the Existing Land Use Map. The C-4 zoning is consistent with this land use.

Area 2 – C-1 Zoning. The C-1 zoning located at the southwest quadrant of the Shoreline Drive/ King Road intersection is owned by Presbyterian Homes. The land is being used as open space for the larger Presbyterian Homes senior housing campus. The City will be updating its zoning to reflect the future land use.

Area 3 – C-1 Zoning. The C-1 zoning at the intersection of Shoreline Drive and Sunset Drive includes areas of mixed commercial and residential land uses. The C-1 zoning allows mixed commercial residential land uses by conditional use permit. These mixed use redevelopment projects are consistent with the underlying C-1 zoning.

Zoning Map



City of Spring Park

Zoning Districts

- R-1 Single & Two Family Residential
- R-2 Medium Density Residential
- R-3 High Density Residential
- C-1 General Commercial
- C-2 Shopping Center
- C-3 Health Care Facility
- C-4 Office Commercial
- M Manufacturing
- P Public/Semi-Public
- Flood Plain Overlay District

Boundary

Lakes

Zoning Conflict Areas

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

Purpose of the Zoning Designations

R-1, Single and Two Family Residential: The purpose of the "R-1", Single and Two-Family Residential District is to provide for low and moderate density one and two unit dwellings and directly related complementary uses. (Single family lot: 10,000 square feet; two family lot: 12,000 square feet)

R-2, Medium Density Residential: The purpose of the "R-2", Medium Density Residential District is to provide for medium density housing in multiple family structures ranging up to and including twelve (12) units/acre and directly related, complementary uses. (Single family lot: 10,000 square feet; two family lot: 12,000 square feet; multiple family lot: 15,000 square feet) (Density based on setback, parking, impervious surface, and building height.)

R-3, High Density Residential: The purpose of the "R-3", High Density Residential District is to provide for high density residential uses at an overall density of thirteen (13) units per acre or more, and directly related complementary uses. (Multiple family lot: 15,000 square feet)

C-1, General Commercial: The purpose of the "C-1", General Commercial District is to provide for the establishment of commercial and service activities which draw from and serve customers from the entire community or region and are located in areas which are well served by collector or arterial street facilities. (Mixed use residential - multiple family lot: 15,000 square feet)

C-2, Shopping Center: The purpose of the "C-2", Shopping Center District is to establish provisions for designating a district for a multiple use building of retail sales and service facilities with integrated design and a coordinated physical plan.

C-3, Health Care Facility: The purpose of the "C-3", Health Care Facility is to provide area for the establishment of health care facilities and housing for the elderly.

C-4, Office Commercial: The purpose of the "C-4", Office Commercial District is to provide a district which may reasonably adjoin high density residential districts for the location and development of administrative office buildings and related uses and which provides a transition in land use from residential uses to more intensive uses. The intermixing of office and residential uses is also permitted under some circumstances.

M, Manufacturing: The purpose of the "M" District is to provide for the establishment of heavy industrial and manufacturing development and use which because of the nature of the product or character of activity requires isolation from residential or commercial use.

P, Public/Semi Public: The purpose of the "P", Public/Semi-Public District is to ensure City control over those lands now used publicly or semi-publicly, by establishing City review procedures in the event of change in land use or activity.

HOUSING PROFILE

Housing Types

As seen in the following table, the City of Spring Park has a wide range of housing units. Seventy percent of the units can be found in buildings of 20 or more units. Medium density and twin homes only amount for two percent of the units within the City. Single family units amount to 25% of the available units.

Housing Units per Structure
City of Spring Park
2006

Units in Structure		Number of Units	Percent of Total
Single Family	1-unit, detached	229	19.0%
	1-unit, attached	58	5.0%
Twin Home	2 units	14	1.0%
Medium Density	3 or 4 units	0	---
	5 to 9 units	0	---
High Density	10 to 19 units	62	5.0%
	20 or more units	849	70.0%
Total		1,212	100.0%

Source: U.S. Census Bureau; City of Spring Park Building Permit Data

For a community of its size Spring Park has a large number of high density units. The table below illustrates the different multiple unit structures within the City.

Name	Property Address	Units	Description
Bayview	2400 Interlachen Road	107	Apartment
Park Hill	2380 Island Drive	40	Apartment
Park Island	2450 Island Drive	56	Apartment
Park Island West	2470 Island Drive	25	Apartment
Minnetonka Edgewater	4177 Shoreline Drive	82	Apartment
Park Hill North	4601 Shoreline Drive	35	Apartment
Lord Fletcher Apartments	4400 West Arm Road	88	Apartment
Shoreline Place Condos	12 Shoreline Place	11	Condominium
Mist Condos	4201 Sunset Drive	116	Condominium/Apartments
Lakeview Lofts	4100 Spring Street	39	Condominium
Chateau	4497 Shoreline Drive	37	Senior Apartments
Court Apartments	4501 Shoreline Drive	94	Senior Apartments
Villa Apartments	4523 Shoreline Drive	66	Senior Apartments
Health Care Center	4527 Shoreline Drive	64	Senior Apartments

Presbyterian Apartments	4579 Shoreline Drive	17	Senior Apartments
Presbyterian Apartments	4589 Shoreline Drive	17	Senior Apartments
Presbyterian Apartments	4599 Shoreline Drive	17	Senior Apartments

As is true in most cases, the majority of the single family homes in Spring Park are owner occupied and the majority of the multiple family dwellings are renter occupied. Because of the amount of available rentals, Spring Park has over twice as many renters as it does homeowners.

Tenure by Housing Units in Structure in 2000

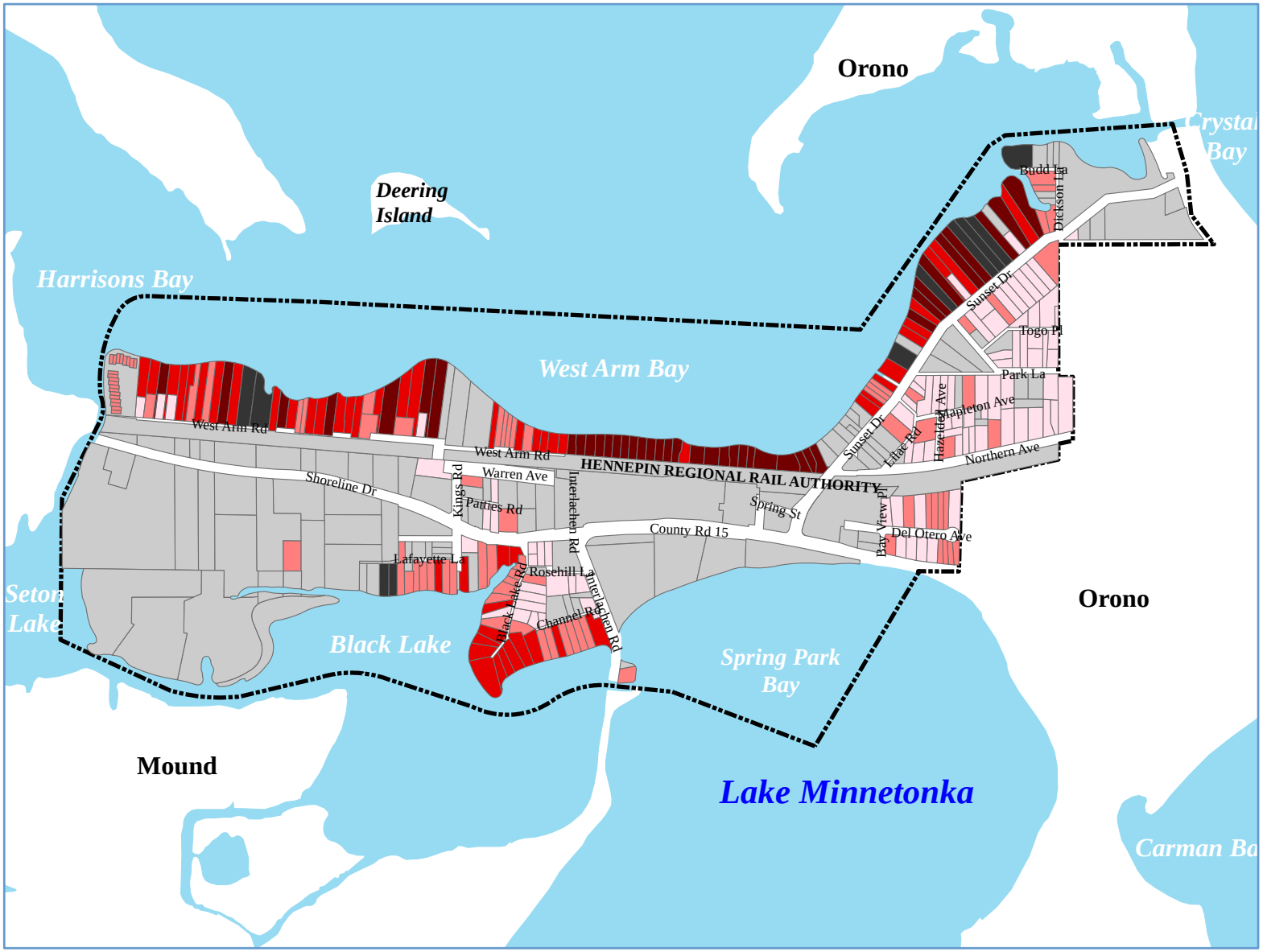
Housing Units	Owner	% Owner Occupied	% by Unit Type	Renter	% Renter Occupied	% by Unit Type	Total Unit Type
1, detached	181	73.0	83.4	36	5.3	16.6	217
1, attached	51	20.6	94.4	3	0.4	5.6	54
2	-	-	-	8	1.3	100.0	8
3 or 4	-	-	-	4	0.6	100.0	4
5 to 9	-	-	-	9	1.3	100.0	9
10 to 19	9	3.6	15.5	49	7.2	84.5	58
20 or more	7	2.8	1.2	572	84.0	98.8	579
Other	-	-	-	-	-	-	-
TOTAL	248	100	26.7	681	100	73.3	929
Source: U.S. Census 2000, Summary File 4							

The table below illustrated the market value for single family home, duplexes and triplexes within Spring Park. The majority of these homes fall at or below $500,000 with the median value of all homes being $458,990. While the expensive homes help provide tax base for the community it is also a concern that the cost of a home in Spring Park will turn moderate income families away from the area.

Estimated Market Value of Single Family Homes, Duplexes and Triplexes 2006

Value	Properties	Percent
$23,000 - $250,000	87	31.8%
$250,001 - $500,000	86	31.4%
$500,001 - $750,000	51	18.6%
$750,001 – $1,000,000	40	14.6%
$1,000,001 – $1,316,000	10	3.6%
Total	274	100.0%
Source: Hennepin County, City of Spring Park, DNR, NAC		

2007 Estimated Market Value of Housing



City of Spring Park

Estimated Market Value

- 23,000 - 250,000 (87 units)
- 250,001 - 500,000 (86 units)
- 500,001 - 750,000 (51 units)
- 750,001 - 1,000,000 (40 units)
- 1,000,001 - 1,316,000 (10 units)

Data also includes duplex and triplex units

Feet

0 500 1,000 1,500

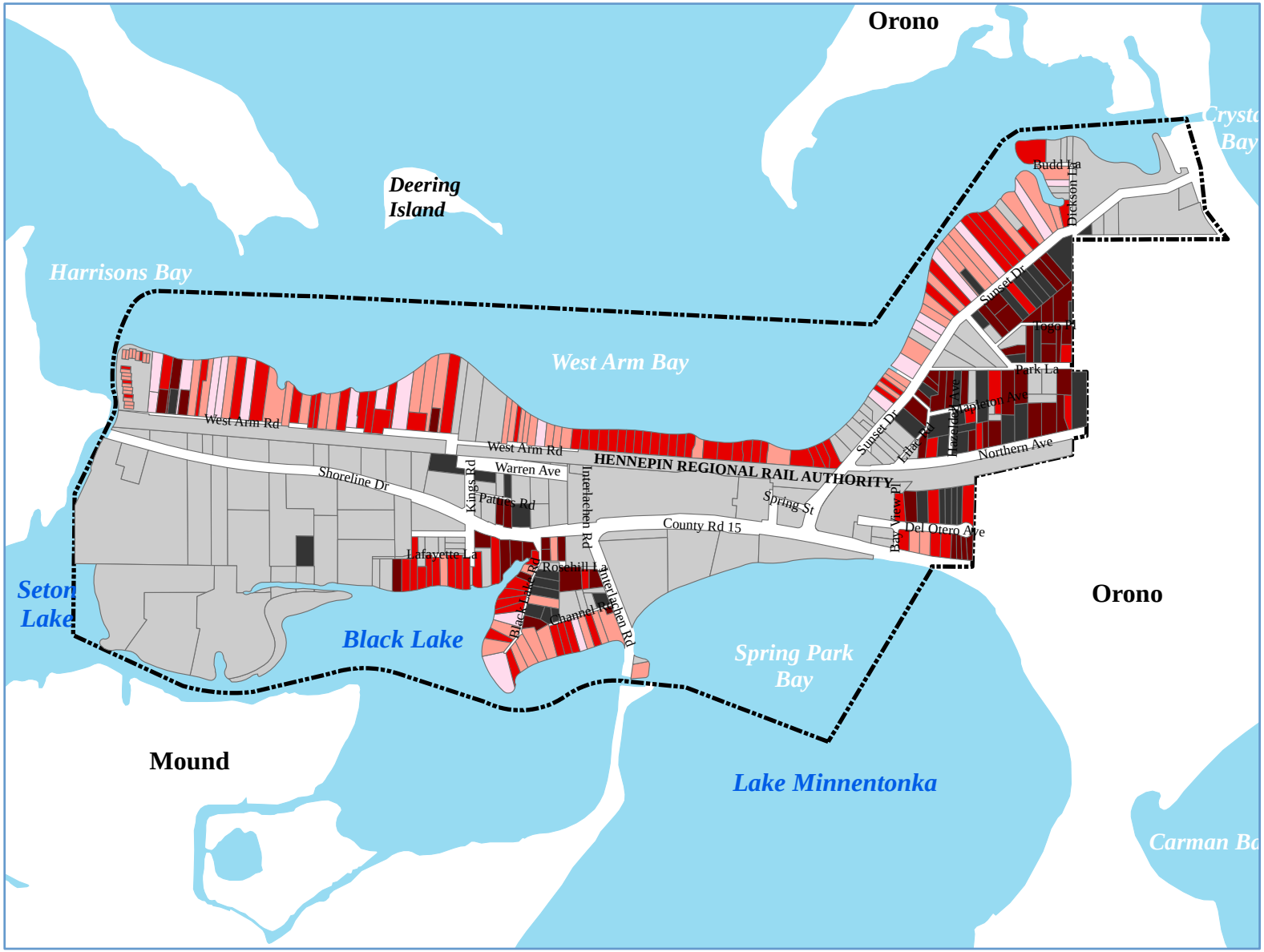
Source:
Hennepin County, City of Spring Park, Minnesota Department of Natural Resources, & Northwest Associated Consultants, Inc.
Prepared: January 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
Telephone: 763.231.2555 Facsimile: 763.231.2561 planners@nacplanning.com

Being on Lake Minnetonka has driven the value of land in Spring Park up exponentially. The following table shows that the majority of homes in Spring Park are worth less that the value of the land. Over 50% of all homes in Spring Park make up less that half of the total market value of the entire property. So while the value of land has risen, the value of the home has not matched the same growth. This drives a concern for existing residents as to whether or not they will be able to own their homes into retirement age due to the increase in taxes caused by the increase in land value.

Building Value to Total Market Value Ratio (Single Family, Duplexes, and Triplexes)		
Building Value Ratio	Properties	Percent
0.00 - 0.16	21	7.7%
0.17 – 0.33	68	24.8%
0.34 – 0.47	88	32.1%
0.48 – 0.62	64	23.4%
0.63 – 0.83	33	12.0%
Total	274	100.0%
Ratio is determined by dividing the value of the building by the total value of the property which includes both building and land		
Source: Hennepin County, City of Spring Park, Minnesota DNR, Northwest Associated Consultants		

Ratio of Building Value to Total Market Value of Parcels with Housing Units



City of Spring Park

Building Value Ratio

- 0.00 - 0.16
- 0.17 - 0.33
- 0.34 - 0.47
- 0.48 - 0.62
- 0.63 - 0.83
- Non-Single-Family Housing Parcels

Data also includes duplex and triplex units

Ratio is determined by dividing the value of the building by the total value of the property, which includes both building and land.

Feet

0 500 1,000 1,500

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.
Prepared January 2008.

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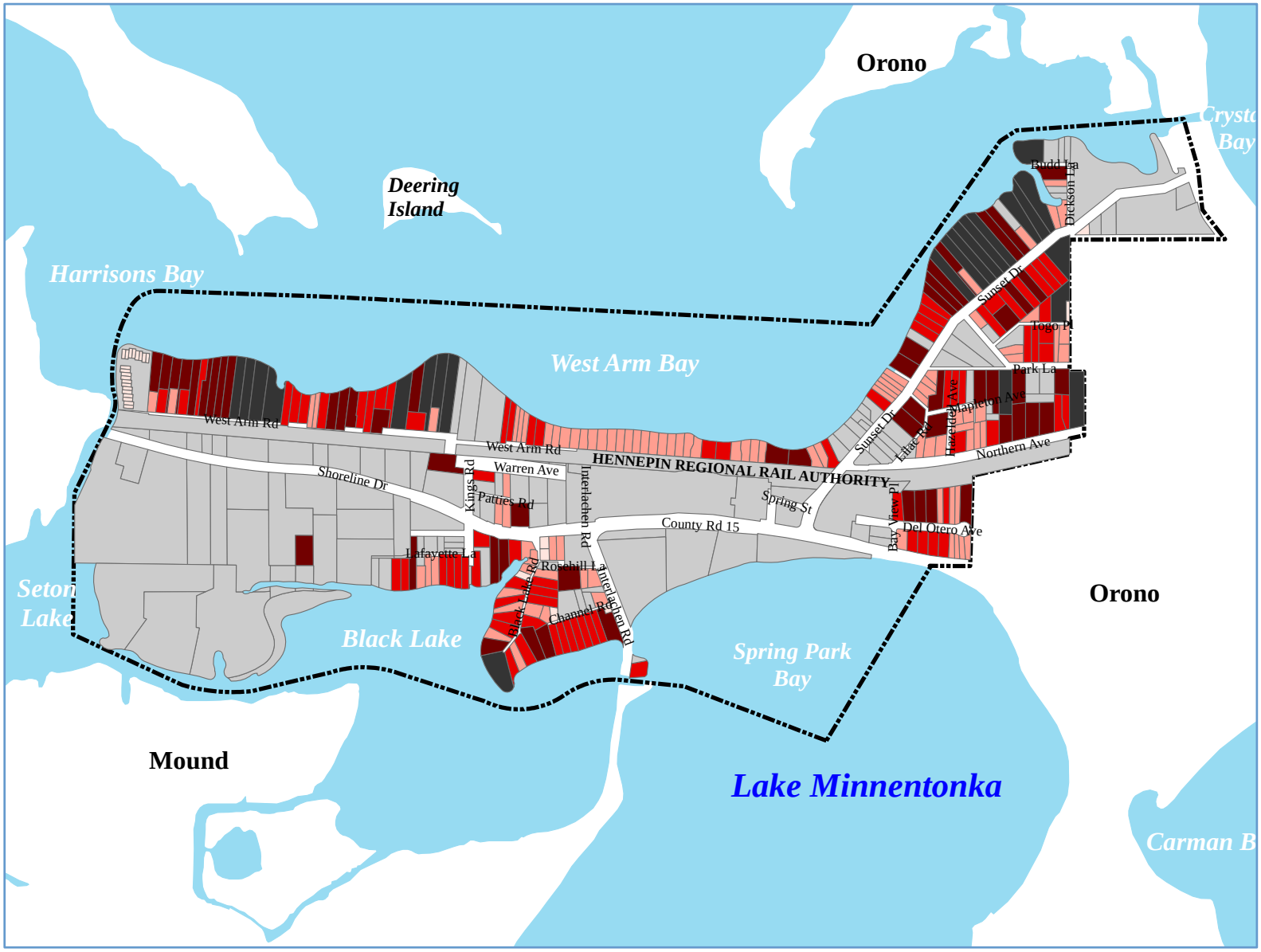
Because Spring Park was developed as a small lake community, the homes and lots were developed as small vacation quarters with narrow lots made for quaint summer cottages. As illustrated in the table below, nearly half of the single family lots are less than 10,000 square feet and in no case is any lot over one acre. The smaller lots have caused constraints to residents wanting to expand their homes because of the setbacks. In many cases these residents are forced to apply for a variance for any type of home addition.

Area of Single Family Lots (square feet)		
Area	Properties	Percent
1,327 – 5,000	27	10.0%
5,000 – 10,000	92	33.6%
10,000 – 15,000	77	28.1%
15,000 – 25,000	55	20.1%
25,000 – 40,000	23	8.4%
Total	274	100.0%
Source: Hennepin County, City of Spring Park, DNR, NAC		

Single Family Housing Lot Area



City of Spring Park

Area (Square Feet)

- 1,327 - 5,000 (27 units)
- 5,000 - 10,000 (92 units)
- 10,000 - 15,000 (77 units)
- 15,000 - 25,000 (55 units)
- 25,000 - 40,000 (23 units)
- Non-Single-Family Housing Parcels

Data also includes duplex and triplex units

Feet

0 510 1,020 1,530

Source:
Hennepin County, City of Spring Park,
Minnesota Department of Natural Resources, &
Northwest Associated Consultants, Inc.
Prepared January 2008.

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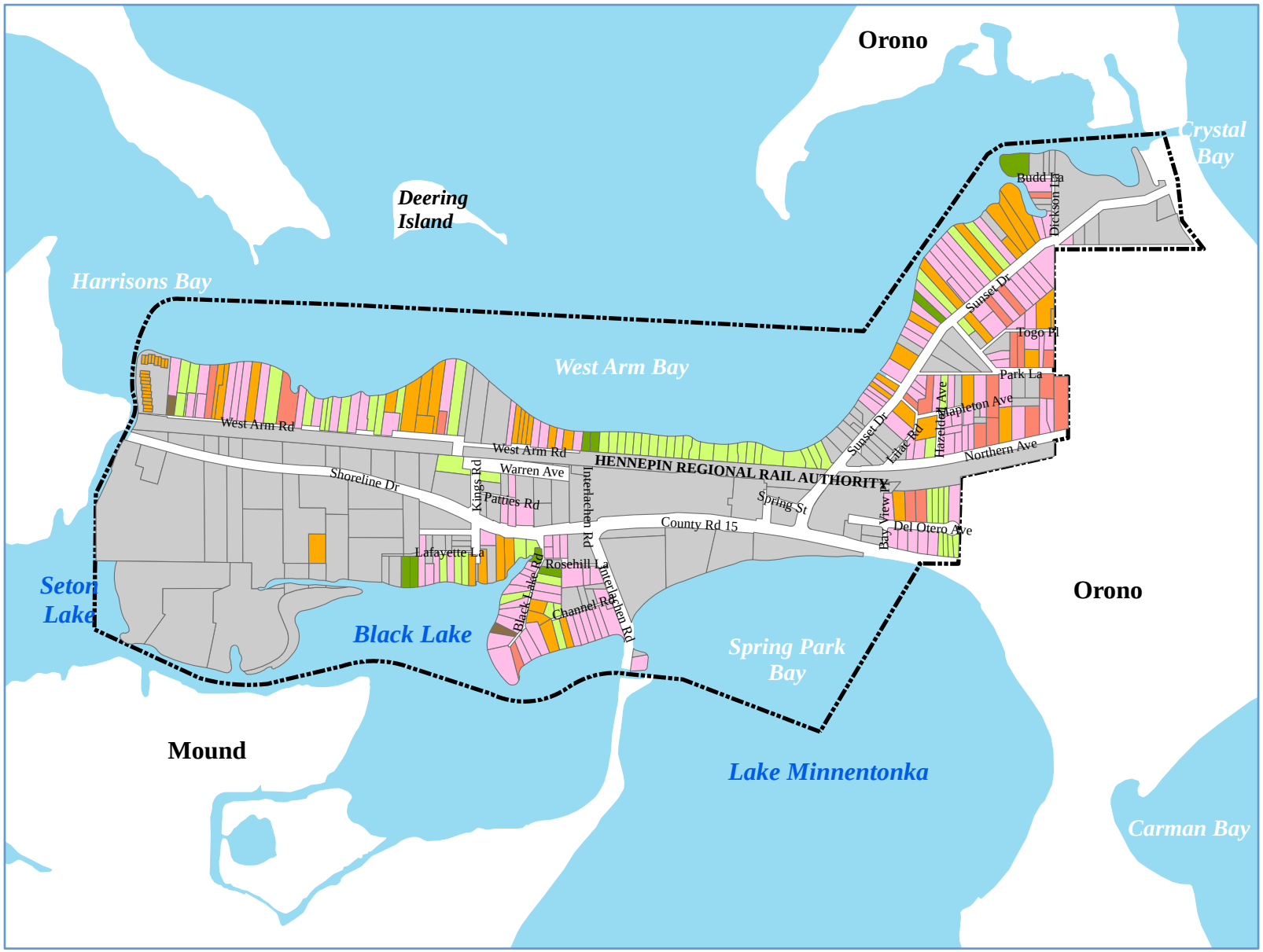
Year Built

Spring Park is a community with a number of older single family homes, but also a good mix of new homes. The majority of the homes were building before 1960. The different ages of homes are mixed throughout the City.

Age of Single Family Housing Stock City of Spring Park		
Year Built	No. of Units	% of Total
2000 to 2007	8	3.0%
1980 to 1999	61	22.3%
1979 to 1960	62	22.6%
1959 to 1940	20	7.3%
1939 or older	121	44.2%
Undeveloped	2	0.7%
Total	274	100.0%
Source: U.S. Census Bureau, Hennepin County		

Single-Family Housing - Year Built



City of Spring Park

YEAR BUILT

- Undeveloped (2 lots)
- 1900 - 1939 (121 units)
- 1940 - 1959 (20 units)
- 1960 - 1979 (62 units)
- 1980 - 1999 (61 units)
- 2000 - 2007 (8 units)
- Non-Single-Family Housing Parcels

Data also includes duplex and triplex units

Prepared: January 10, 2007

Feet

0 500 1,000 1,500

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

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Housing Cost

The table below illustrates how rent rates are disturbed. The majority of the rents in 2000 were $500 to $749 with the median rent being $724. If comparing the median rent in 2000 to what it would be considered in 2006 with the consumer price index inflation rate, the median rent would be almost $850.00.

Gross Rent* City of Spring Park 2000		
Gross Rent Per Month	Number of Units	Percent of Total
Less than $200	8	1.2%
$200 to $299	8	1.2%
$300 to $499	34	5.0%
$500 to $749	321	47.4%
$750 to $999	206	30.4%
$1000 to $1,499	66	9.7%
$1,500 or more	34	5.0%
Total	677	100.0%
Median Rent	$724	
* Specified renter-occupied units		
Source: U.S. Census Bureau		

TRANSPORTATION PROFILE

County Road 15

County Road 15 is a minor arterial street that serves as a major east-west commuter route connecting Spring Park with travel destinations in the balance of the Metropolitan Area. Improvements were made to increase the traffic capacity and safety on County Road 15. Between 2000 and 2030, MnDOT is projecting that the traffic volume will increase by 3,000 average daily trips.

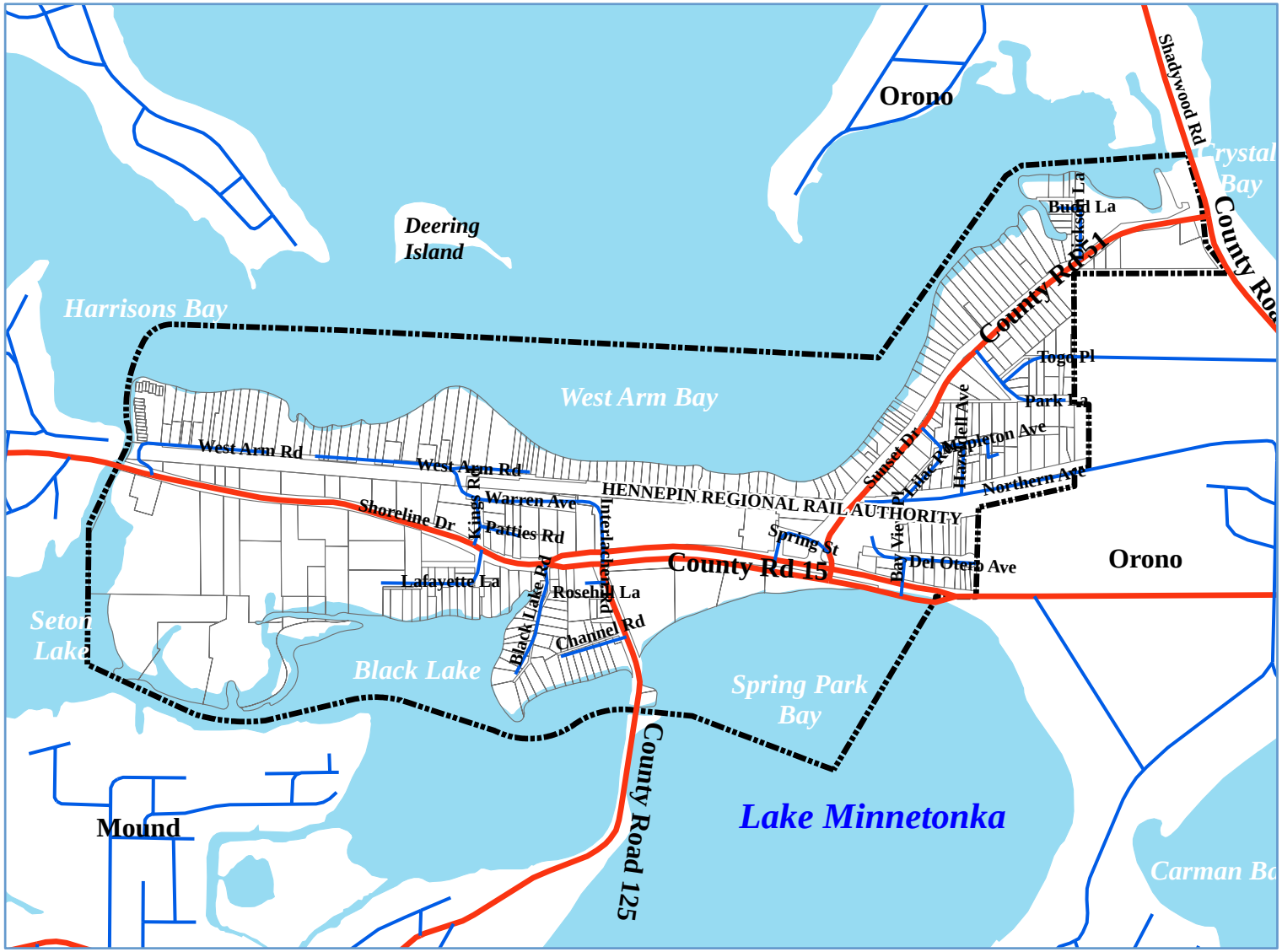
County Road 51

County Road 51 is a collector street that connects County Road 15 with County Road 19. Between 2000 and 2030, MnDOT is projecting that the traffic volume will increase by 2,300 average daily trips.

Local Streets

Spring Park's Local street designs are resultant of the City's natural narrow configuration and physical barriers including major highways, the old railway and existing development patterns. The local streets systems are characterized by narrow street surfaces, dead-end streets, and incomplete street networks.

Roadway Jurisdiction



City of Spring Park

SP SPRING PARK On Lake Minnetonka

Legend

- County Road
- Local Road

Feet

0 250 500 1,000 1,500

Source: Hennepin County, City of Spring Park, MN DNR, Met Council, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

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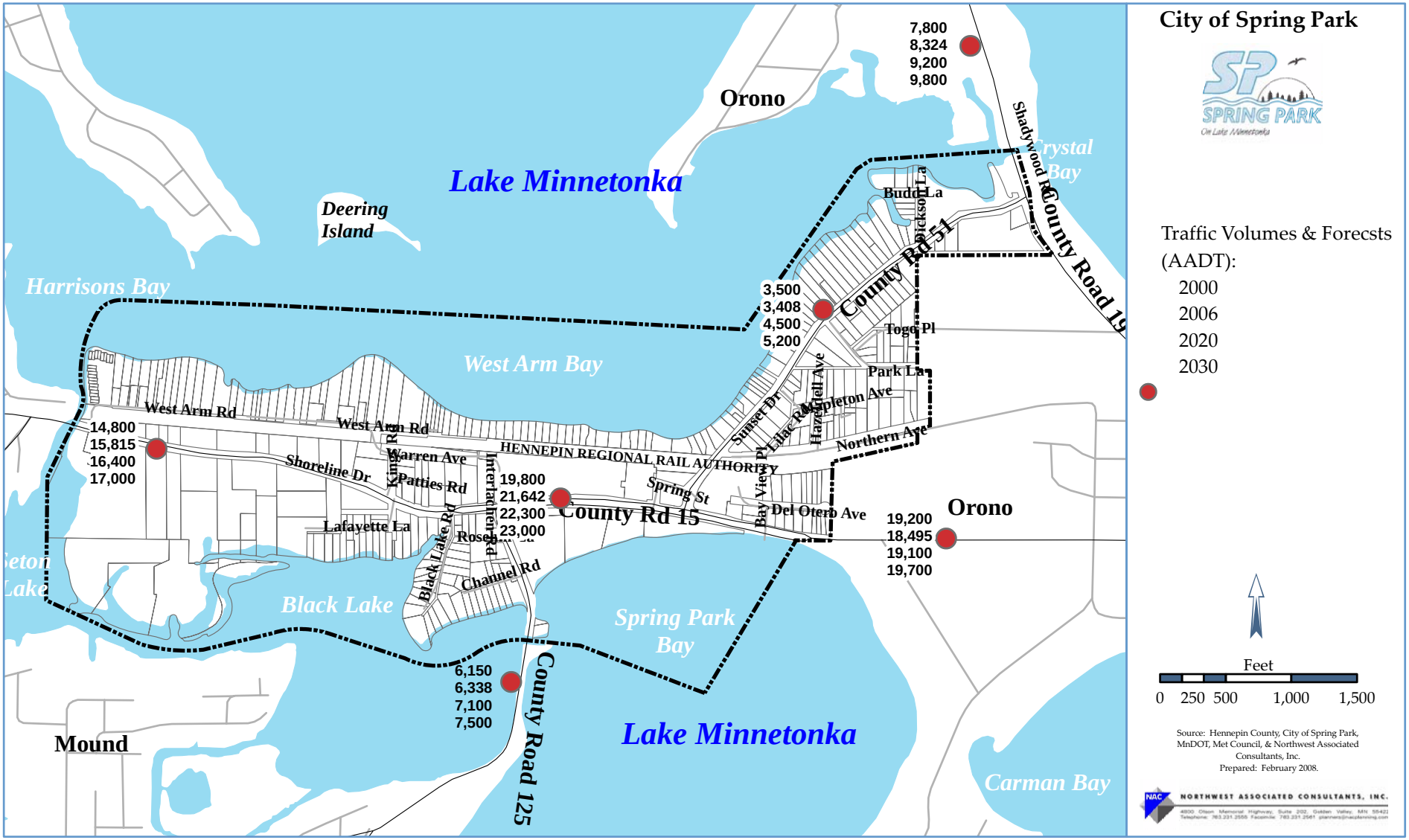
Traffic Volumes & Forecasts



Parking

Spring Park's commercial and manufacturing land uses have experienced problems with parking shortages and inconvenient parking supplies. These parking shortages have produced concerns with regard to traffic congestion, on-street parking, and pedestrian movement through residential areas. The City is currently working with Hennepin County to provide extra parking at the proposed trail head for the regional trail. Excess parking at the Marina Shopping Center provides an opportunity for added building sites.

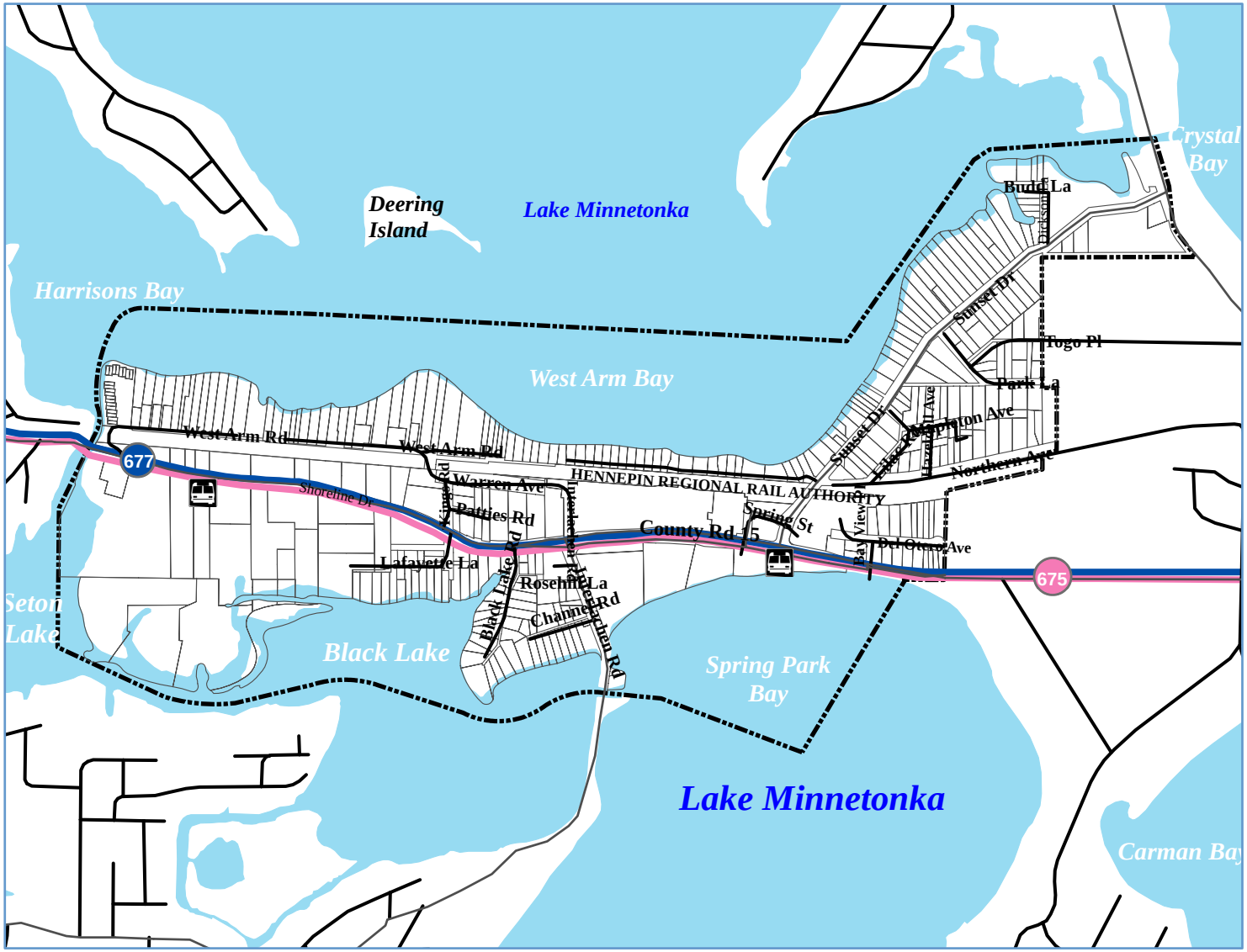
Mass Transit

The City of Spring Park lies in Transit Market Area III for which peak and all day express service plus circulators are appropriate in the market area. Spring Park has two Metro Transit bus routes that run along County Road 15 on a daily basis. Route 675 runs Monday through Friday in 60 minutes intervals and in 30 to 60 minute intervals during rush hours from Mound to Downtown Minneapolis. Route 677 provides two to three trips per day during rush hour, Monday through Friday, from Mound to Downtown Minneapolis. Route 670 express service from Orono to Minneapolis is also available to City residents. Hennepin County has also discussed with the community the possibility of Light Rail service along the old Hennepin County rail line.

Park and Ride

Park and Ride lots exist along the bus routes at the Mound Transit Center and the Navarre Center along County Road 15.

Transit Routes



City of Spring Park

Metro Transit Routes

- 675
- 677
- Roads
- Lakes
- Bus Stops

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park, MN DNR, Twin Cities Metro Transit, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

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4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
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Pedestrian/Bike Trails

Continued attention must be given to the orientation of pedestrian and bicycle travel next to automobile travel. All provisions for safety must be considered when planning for these routes. Notably the City should look at the possibility of establishing a pedestrian trail along the County Road 51 corridor.

The old Dakota Railway was purchased by Hennepin County in order to develop the Dakota Rail Regional Trail as a pedestrian/bike trail connection between Wayzata and St. Bonifacius. The City has been working with the County to develop a parking area and trail head.

Parks & Trails

City of Spring Park

SP SPRING PARK
On Lake Minnetonka

Trails Jurisdiction

- County Trails
- Regional Trails
- Parks
- Boundary
- Parcels
- Lakes

Prepared: November 28, 2007

Feet

500 250 0 500 1,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NAC NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
Telephone: 763.231.2656 Facsimile: 763.231.2661 planners@nacplanning.com

Airport Traffic

A number of sea plane bases are located in close proximity to Spring Park. The impact of sea plane operations on heavily used areas and the probabilities of aircraft flying over Spring Park at low altitudes in their approach to the lake will be an ongoing issue that affects building construction heights.

The Minneapolis-St. Paul International Airport (MSP) serves as the area's primary scheduled commercial airline passenger facility. However, MSP does not have any direct affect on the Spring Park community.

The Flying Cloud Airport in Eden Prairie is the closest airport to Spring Park and serves small and business aircrafts.

COMMUNITY FACILITIES

Community facilities include those lands, buildings and utilities required to support urban land use development and densities. Their importance should not be underestimated in that they are essential for establishing and sustaining a quality life style in an urban environment.

Park and Recreation

Spring Park currently contains a little over six acres of City owned dedicated park property. Three areas, Thor Thompson Park, Don Wilkes Memorial Park and the municipal tennis courts, are included as park property. The three parks are classified as a neighborhood playground by the Metropolitan Council standards and as such, each area should contain or be planned for active recreation development for all age groups.

Lake Use

Lake Minnetonka has been perhaps the single most important factor influencing the development of Spring Park. Lake Minnetonka provides recreation to both local and regional residents. In this regard, the Hennepin County public boat access south of County Road 15 is also considered to be a component of the Spring Park parks and recreation system.

Community Services

Due to the City's size, Spring Park must contract with other communities to provide certain services to its residents. The City contracts with the City of Mound for fire protection, and the City of Orono for police protection and building inspections. Street repair is primarily handled by Hennepin County for roads under their jurisdiction. Private contactors are chosen through a bidding process for any local street improvements or snow removal.

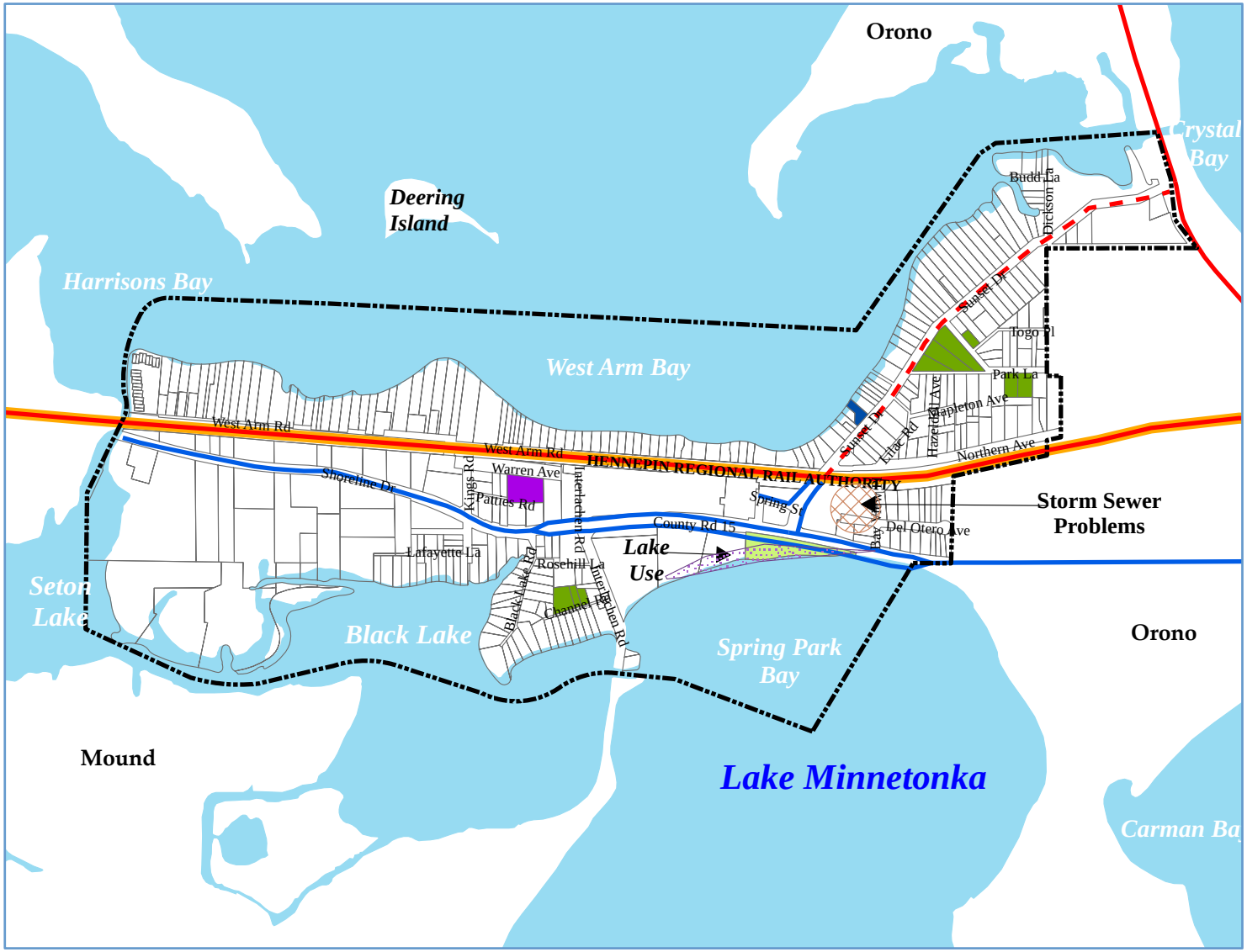
Schools

Residents of Spring Park are served by Independent School District 227, also known as the Westonka School District. Westonka schools include four buildings with a faculty of approximately 160 teachers, serving 2,200 students. Westonka also provides community education and services for lifelong learners of all ages, from infant to senior citizens.

Public Buildings

Community facilities also include the post office and City Hall. Public buildings as these are important parts of the City image and provide a connection to the community. They must also be an integral part of ongoing comprehensive planning efforts.

Community Facilities



City of Spring Park

- Post Office
- City Hall
- City Parks
- County Boat Launch
- Existing Sidewalk
- Existing Trail
- Proposed Trail
- Dakota Regional Trail Corridor
- Lakes

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park, Minnesota Department of Natural Resources, & Northwest Associated Consultants, Inc.
Prepared February 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

Utilities

Water System

The existing City Water system is sufficient to meet the present and future needs of the community. The Public Works department has indicated three location on the east side of the City where water mains do dead-end causing a drop in pressure.

Sanitary Sewer

The sanitary sewer system utilizes seven lift stations to collect and move sanitary sewage through and out of the City. The sewer collection system is older and has some areas that require repair and/or replacement. A plan for sanitary sewer repairs will be necessary.

The City has adopted and implemented an Inflow and Infiltration (I and I) Plan to monitor and reduce stormwater flows into the City's sanitary sewer.

Storm Sewer Systems

The MPCA has identified West Arm area of Lake Minnetonka as impaired water. The impaired classification is based on nutrient/eutrophication, biological indicators criteria. The first year listing is 2008. The schedule for a Total Maximum Daily Load (TMDL) report as established by the MPCA is to start in 2009 and complete in 2013. The final report will establish the TMDL discharge allowed for each community having storm drainage to West Arm.

The TMDL Report will establish drainage requirements for the communities contributing to the pollutant loading into West Arm. The City Spring Park will need to study the cities TMDL and implement a plan to reduce the loadings in accordance with the requirements contained in the report.

The City of Spring Park submitted a revised MS4 permit in June 2006. This submittal was in response to new permit application requirements established by the MPCA. The permit application included BMPs in the format required by the MPCA and a City prepared Storm Water Pollution Prevention Plan (SWPPP).

The MPCA requires preparation of an annual report tracking compliance with the BMPs identified in the permit or progress towards compliance. The annual report is submitted, for the previous year in March. The City prepares the annual report using a MPCA prepared reporting form.

Spring Park recently adopted a comprehensive storm water management plan. The plan was developed for purposes of relieving specific drainage problems, preventing anticipated problems and requiring all new developments or redevelopments to install facilities compatible with the

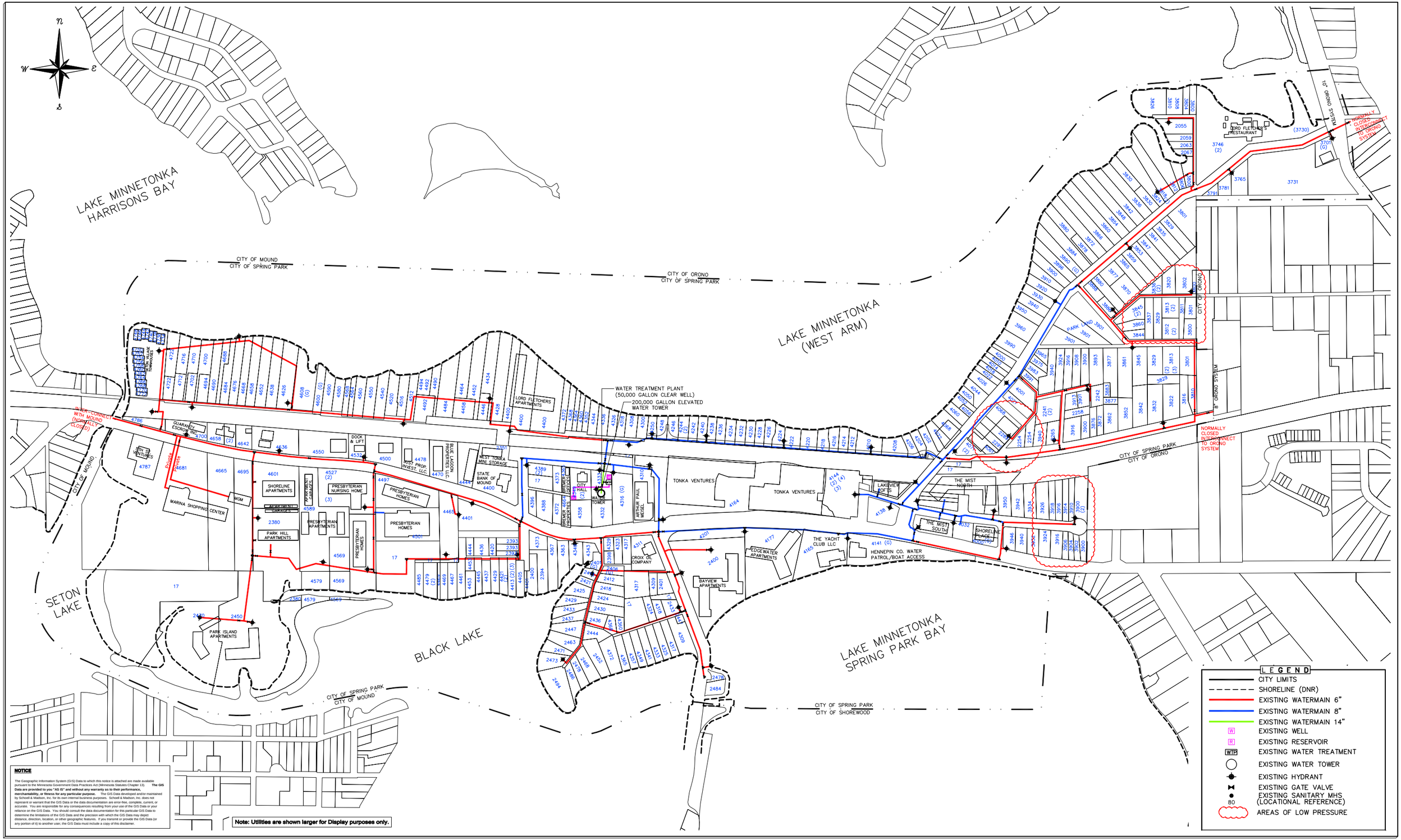
plan. Certain areas within the community are inundated by storm water in the spring and/or wet seasons and must be addressed as another high priority issue.

Minnehaha Creek Watershed District

The Minnehaha Creek Watershed District (MCWSD) has permitting jurisdiction of all construction projects, meeting the District's permitting criteria, in the City of Spring Park. Spring Park and the MCWSD issue permits for construction.

If a MCWSD permit is required for construction projects both the City and the MCWSD review the permittees application for compliance with the MCWSD's rules and regulations. The City of Spring Park has adopted the MCWSD's rules and regulations. A city issued building permit requires both City and MCWSD approval of the projects stormwater management components.

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



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Note: Utilities are shown larger for Display purposes only.

LEGEND

- CITY LIMITS
- SHORELINE (DNR)
- EXISTING WATERMAIN 6"
- EXISTING WATERMAIN 8"
- EXISTING WATERMAIN 14"
- W — EXISTING WELL
- R — EXISTING RESERVOIR
- WTP — EXISTING WATER TREATMENT
- EXISTING WATER TOWER
- EXISTING HYDRANT
- EXISTING GATE VALVE
- 80 — EXISTING SANITARY MHS (LOCATIONAL REFERENCE)
- AREAS OF LOW PRESSURE

0 250 500 1000
SCALE IN FEET

MFRA
Engineering • Planning • Surveying
McCombs Frank Rees Associates, Inc.
14800 28th Avenue North, Suite 140
Plymouth - Minnesota - 55447
phone: 763/475-0010
fax: 763/475-0030
website: www.mfra.com

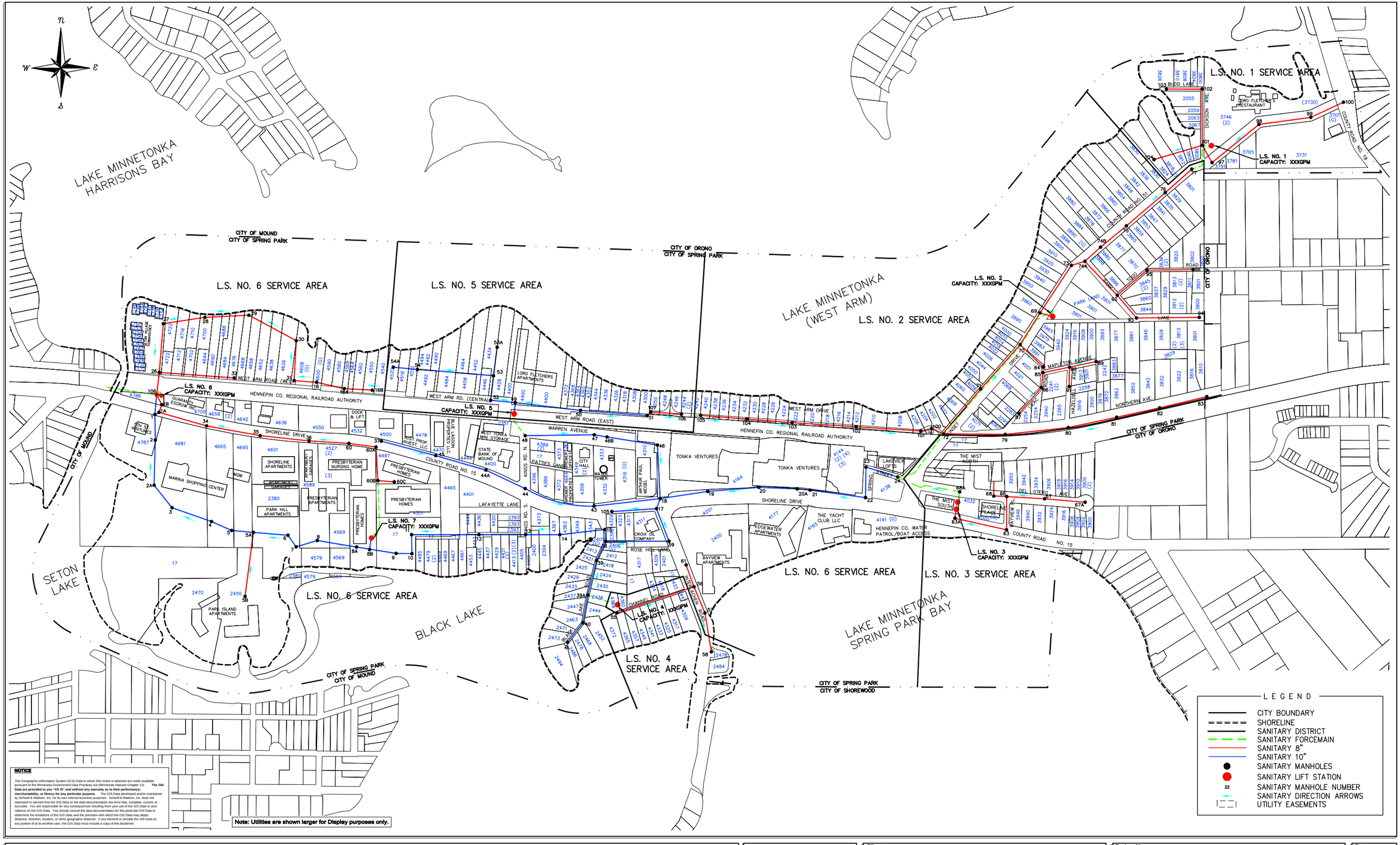
Client:
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9061

Project Name: **SPRING PARK UTILITY MAPPING SYSTEM**

Date: **01/09/08**

Sheet Title: **WATERMAIN SYSTEM (COVER)**

Sheet: **1** of **1**



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0 250 500 1000
SCALE IN FEET

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website: www.mfra.com

Client:
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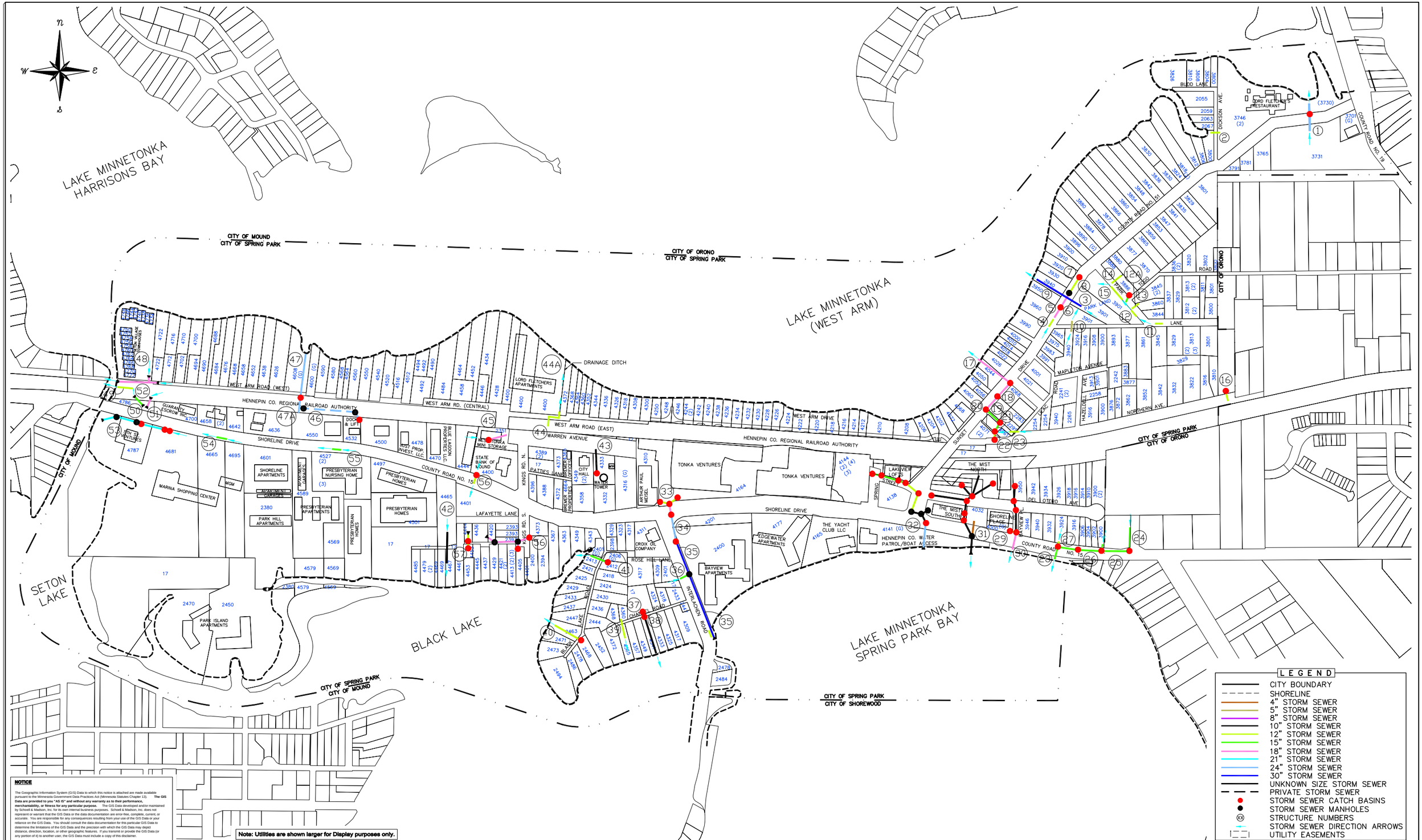
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9051

Project Name: SPRING PARK UTILITY MAPPING SYSTEM

Date: 01/09/08

Sheet Title: SANITARY SEWER SYSTEM (COVER)

Sheet: 1 of 1



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Note: Utilities are shown larger for Display purposes only.

LEGEND

- CITY BOUNDARY
- SHORELINE
- 4" STORM SEWER
- 5" STORM SEWER
- 8" STORM SEWER
- 10" STORM SEWER
- 12" STORM SEWER
- 15" STORM SEWER
- 18" STORM SEWER
- 21" STORM SEWER
- 24" STORM SEWER
- 30" STORM SEWER
- UNKNOWN SIZE STORM SEWER
- PRIVATE STORM SEWER
- STORM SEWER CATCH BASINS
- STORM SEWER MANHOLES
- (XX) STRUCTURE NUMBERS
- STORM SEWER DIRECTION ARROWS
- UTILITY EASEMENTS

0 250 500 1000
SCALE IN FEET

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Client:
SPRING PARK On Lake Minnetonka
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9051

Project Name: **SPRING PARK UTILITY MAPPING SYSTEM**

Date: 01/09/08

Sheet Title: **STORM SEWER SYSTEM (COVER)**

Sheet: 1 of 1

planning tactics

SPRING PARK

On Lake Mantrota

city of spring park

comprehensive plan

Introduction

This section of the Comprehensive Plan is the Planning Tactics, which is devoted to the summary of comments and concerns raised in the Tactics interviews conducted with the City of Spring Park staff, City Council members, as well as a few other key stakeholders in the community and comments from the first Comprehensive Plan Task Force workshop.

Identification of each and every issue raised in the interview and workshop process was not attempted. Rather, issues presented herein represent a broad categorization of topics raised. Generally, there was a strong consensus on many topics, however, where opinions differ, both sides of the issue are presented. The following perceptions and issues represent topic area requiring specific attention throughout the comprehensive planning process.

Community Identity

Most people interviewed described Spring Park as a small lake community. This is the identity that the City wants to preserve and promote. The following community strengths contribute to Spring Park's quality of life and public image:

1. Lake Minnetonka surrounds Spring Park. The highly valued water body provides open space, recreational opportunities, and land value to Spring Park residents. Access to the lake provides an aesthetic and economic enrichment to the community. Most interviewed expressed a need to continue to protect this natural resource for future residents.

2. The small town government and fiscally conservative government. The City is operated and maintained with small and efficient public staff.

3. The opportunity for the regional trail through the community contributes both recreational and transportation amenities that contribute to the City's identity.

While complementary to the City as an attractive place to live, interview participants also identified the following community concerns that may threaten the City's historic identity:

1. Lakeshore lots along Lake Minnetonka continue to appreciate in value due to their limited availability. While this benefits the City with regard to tax base, it also presents the following concerns:

    a. Increased land values result in increased property taxes. Substantial increases in property taxes can make it difficult for middle income households to continue to afford their homes.

b. The high value lakeshore lots are attracting more affluent households capable of affording premium lakeshore values. This trend is changing the socio-economic demographics of the City. With their new investment, the new property owners have different expectations for the neighborhoods and the City related to house size, neighborhood appearance, and City services. Some have expressed that with the continued in-migration of affluent households, the City is being segregated into the "haves and the have nots." These changed expectations have produced some conflicts within neighborhoods.

Single Family Land Uses

1. Spring Park is characterized by long narrow single family lots. Historically, these lots contained seasonal cottages and summer homes. As the City matured, these seasonal residences became year round homes. The existing pattern of single family lots raises the following concerns:

   a. The narrow lot patterns result in tight living arrangements. These small lots are expected to contain the house, outbuildings, automobile parking, seasonal storage of boats and docks, and provide useable yard for the resident. This was an acceptable arrangement when Spring Park was a resort community with small cottages and single car households, however, as the City evolved to full time residents, property use changes with larger homes, maximizing use of their property. This has created issues related to property line disputes, outdoor storage, monster homes, and greater impervious lot coverage.

   b. Many of the houses in Spring Park were constructed prior to zoning regulations and as such, do not meet required building setbacks. These reduced setbacks contribute to the City's tight development pattern. With new construction and building additions, property owners want to preserve their right to the non-conforming setbacks and expand their homes into the balance of the lot. Without uniform setbacks, the expanded house size begins to dwarf the lot and adjoining homes.

   c. With new redevelopment within the single family neighborhoods, property owners pursue the "biggest bank for the buck", resulting in larger, taller, more expensive homes. While the City wants to continue to encourage reinvestment in its housing stock, the City needs to re-evaluate past practices and define its future expectations for house sizes, lot coverage, and setbacks.

   d. The City has identified that the preservation, maintenance and enhancement of the City's existing single family neighborhoods must be a priority of the 2030

Comprehensive Plan. To achieve this goal, the following suggestions were offered:

- Maintain required building setbacks.
- Stick to the City's minimum lot size of 10,000 square feet.
- Limit single family lot impervious surface.

e. Single family homes along Sunset Drive are zoned for medium density housing alternatives. The City will explore whether a low density zoning may be more appropriate for these single family lots.

Multiple Family Land Uses

Multiple family housing represents 70 percent of the City's current housing stock. The City's multiple family housing stock has provided a variety of housing options for Spring Park residents. This land contributes to the City's tax base, providing some relief for single family homeowners. Through the Tactics interviews, the following options were presented:

1. Many interviewed raised concern over the quantity of multiple family in the City. Currently, it represents 70 percent of the City's housing stock.

2. In looking to the future, many indicated that if the City wants redevelopment, multiple family housing provides a viable land use option. High land costs and other redevelopment costs tend to push density to make redevelopment financially feasible. A number of people interviewed expressed that the most recent redevelopment efforts (Lakeview Lofts and The Mist) included too much density, too big of buildings, and the lack of amenities as shortcomings in the projects. Others pointed out the expanded tax base and that these projects replaced a number of marginal to blighted buildings. The end results is an improvement over previous conditions.

3. In looking to the future, the City needs to further define the redevelopment ambitions related to land use, density, building design, building height, and amenities to aid in guiding future projects.

4. Attractive streetscape design along County Road 15 portray a positive community identity.

Commercial Land Uses

In 2007, the City of Spring Park undertook a planning effort to establish design guidelines for future commercial development and redevelopment. This effort recognized the electric composition of Spring Park's commercial area. The City efforts strive to maintain the vitality of existing businesses, while enhancing the appearance of the commercial area.

Through the Tactics interviews, the following concerns were expressed with regard to the commercial areas of the City:

1. The City would like to promote commercial businesses that are compatible with the City image of small lake community. In this regard, smaller businesses that benefit from proximity to the lake, or serve the local lake lifestyle. Preferred businesses listed through the interviews include smaller lake oriented retailers, office use, coffee shop, or a sit down restaurant.

2. The appearance of select commercial areas is a concern for the City related to building conditions, exterior storage, and exterior sales. The City's 2007 Design Guidelines is the City's effort to improve on existing conditions.

3. A number of businesses were identified as examples of uses the City wants to continue to promote:

    a. Marina Shopping Center. Recent face lifts on the building have improved its overall appearance. Introduction of the medical clinic as a shopping center anchor is seen as a very positive addition to the community.

    b. Lord Fletcher's Restaurant is a community landmark that draws regional customers to Spring Park.

    c. The Drive Inn Restaurant on County Road 15 is a community attraction that provides good food and a unique dining atmosphere. Special events at the Drive Inn, such as "old car night" makes the site a local and regional destination.

4. In general, most interviewees would like more commercial, retail and service uses within the community. The types of businesses that are desired are those that address the day-to-day needs of Spring Park residents and businesses that cater to the lake activities, and the lake community lifestyles.

5. Some commercial zoned properties along County Road 15 have limited accessibility due to severe topography. The City will investigate alternative land uses for these sites.

Industrial Land Uses

Spring Park has 8.5 acres of land zoned M, Manufacturing to accommodate existing industrial land uses. In discussion of this land use category, the following comments were offered:

1. The current industrial property has a successful multi-tenant building that is a vital and active land use in the City. The property owner has indicated that they have no plans for redevelopment in the near future.

2. Most interviewees are pleased with improvements and appearance of the industrial area of the City. This site contributes to the attractive streetscape along County Road 15.

3. The industrial area of the City provides a significant contribution to the City's tax base and provides local employment opportunities.

4. The limited size of the industrial site, its location away from major highway systems, and growing commuter traffic on County Road 15 have raised questions over the long term viability of industrial land use in Spring Park.

Transportation

The following comments were offered regarding Spring Park's transportation infrastructure:

1. Most of the people interviewed recognized the growing traffic volumes on the County highway system. This presents concerns for Spring Park related to site and neighborhood access, congestion at controlled intersections and increased commuting times for Spring Park residents working outside of the City.

2. The local street system is characterized by very narrow and frequently dead-end streets. These streets are located on very narrow rights-of-way, providing limited opportunity for improvement or expansion. The local street configurations present concerns for street maintenance, snow removal, on-street parking, and access for emergency vehicles.

3. The City recently completed a street condition study that reveals streets that need some repair or improvement. The City needs to include a systematic strategy for undertaking street improvements.

4. Most of the interview participants want a pedestrian friendly community. The City supports the regional trail on the Hennepin County rail right-of-way. This regional trail will provide a pedestrian/bicycle trail that traverses the entire community, providing opportunity for local trail connections that may link City neighborhoods and commercial areas.

5. The Hennepin County regional trail corridor represents a significant pedestrian/bicycle thoroughfare through the City, however it passes along the backs of properties. There is a need to enhance the aesthetic quality of the pedestrian/bicycle corridor by screening the adjoining land uses.

6. There is a need for a trail head associated with the Hennepin County regional trail with associated parking, landscaping, and trail amenities.

7. Sunset Drive (County Road 51) is a County road with narrow right-of-way and with adjoining land uses in close proximity to the street. Due to high traffic volume and traffic speeds, there is a need to segregate pedestrian and automobile traffic through the creation of a trail or sidewalk along this street.

8. Long range plans (post 2030) for a light rail transit on the Hennepin County rail right-of-way is supported by the City. The transit component would provide commuter traffic relief for County Road 15 and provide a transit amenity that will support Spring Park's future land use development.

Community Facilities

Stormwater

1. The City adopted its Local Water Management Plan in 2004 that outlines the City's strategies for stormwater management.

2. The Minnesota Pollution Control Agency (MPCA) has identified West Arm Bay of Lake Minnetonka as impaired water. The impaired clarification is based on nutrient/ eutrophication and biological indicator criteria. The City of Spring Park will need to study the City's stormwater discharge into the bay and implement a plan to reduce total maximum daily loadings in accordance with MPCA standards.

3. The City works with Minnehaha Creek Watershed District on all construction projects addressing issues of erosion control, stormwater management, and on-site inspections.

Municipal Water

1. The municipal water system was described as being in generally good condition, with some pipes being a little undersized. There are some dead-end water mains that result in slow water pressure in some neighborhoods. Future looping of these dead-end water mains would resolve the water pressure issues.

2. The water tower and City reservoir have sufficient capacity to meet the City's needs.

3. Some of the new, taller redevelopment projects required the installation of pressure pumps within the building to insure appropriate water pressure and fire protection in the upper stories of the buildings.

Sanitary Sewer

1. The sanitary sewer system utilizes seven lift stations to collect and move sanitary sewage through and out of the City.

2. The sewer collection system is older and has some areas that require repair and/or replacement. A plan for sanitary sewer repairs is necessary.

3. The City has adopted and implemented an Inflow and Infiltration (I and I) Plan to reduce stormwater flows into the City's sanitary sewer.

County Boat Launch

1. The County boat launch is an amenity that benefits the City. Through Task Force discussion, it was suggested that the City work with the County to enhance the boat launch, both aesthetically and functionally through landscaping, launch improvements, and off-site parking for boating guests.

Issues Map

City of Spring Park

SP SPRING PARK
On Lake Minnetonka

Community Issues

Prepared: November 28, 2007

Feet

500 250 0 500 1,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4920 Olson Memorial Highway Suite 202 Golden Valley, MN 55422
Telephone: 763.231.2656 Facsimile: 763.231.2661 general@nacplanning.com

policy plan

SPRING PARK

On Lake Minnetonka

city of spring park

comprehensive plan

INTRODUCTION

The purpose of the Policy Plan is to describe in writing what the community desires to produce or accomplish with regard to its physical environment. The plan also provides guidelines as to how these desires are to be achieved.

Building on the issues and opportunities identified in the Planning Tactics and Inventory, this chapter identifies general community goals and supporting policies. The policy statements can be used as a benchmark against which development requests, proposed plans, programs and actions can be assessed. Policies should provide a decision-making framework for all public and private actions related to development within the City.

The Policy Plan does not provide information on the timeliness and priorities for needed community improvements. Instead, it provides a series of criteria which can be used to direct general actions undertaken by public and private groups in response to community needs. Moreover, the policies should be considered and utilized collectively. In some cases, a single policy may define and outline a course of action. More frequently, however, a group of policies will be applied to a given situation.

The flexibility and adaptability of the Policy Plan is particularly useful when unanticipated development decisions emerge. The plan further complements the City's maps, ordinances, and codes which are more static documents. In some instances, policies may not address a new situation in the community. In this case, the Policy Plan should be updated or modified. This will give the Comprehensive Plan an up-to-date quality which will withstand the test of time.

In the sections which follow, the terms "goals" and "policies" are frequently used. These terms are defined as follows:

Goals: The generalized end products which will ultimately result in achieving the kinds of living, working and recreational environments that the community desires.

Policies: Action statements which lead to general achievement of the stated goals. They serve as guides to help make present and future decisions consistent with the community goals.

CITY-WIDE GENERAL GOALS

Goal 1: Protect and promote Spring Park's identity as a quaint lake community.

Policies:

A. Establish a cohesive image for the entire community through the uniform application of community promotion, design and service.

B. Strengthen community assets to communicate Spring Park's positive identity within the region.

C. Build on and promote the use of the lake for recreation purpose.

D. Remain proactive in addressing outstanding City issues or concerns that may detract from the City's identity.

E. Establish an attractive and identifiable commercial streetscape along County Road 15 with notable gateways and increased green space.

Goal 2: Protect property values and maintain a strong tax base while allowing existing residents the affordability to stay.

Policies:

A. Promote private reinvestment in Spring Park properties through building renovation, expansion and maintenance.

B. Encourage property maintenance.

C. Provide assistance and information with regard to available programs that may assist local property owners in building renovation and expansion.

D. Enhance local tax base within the City by encouraging high quality commercial and industrial building expansions.

E. Implement a City's Capital Improvement Program to assure that high quality public infrastructure accompanies private investment.

F. Require all construction or remodeling of homes within the City to comply with minimum zoning standards of the City.

G. Provide access to increasing technologies such as broadband services to allow residents to work from home.

Goal 3: Improve substandard and/or blighted areas simultaneously with redevelopment.

Policies:

A. Promote private housing redevelopment within the City that meets the Zoning Ordinance performance standards.

B. Encourage the private redevelopment of substandard, obsolete or blighted properties. Public assistance may be applicable where the redevelopment is consistent with the goals of the Spring Park Comprehensive Plan and within the financial capabilities of the City.

C. Investigate opportunities for redevelopment or renewal of deteriorating residential sites.

D. Redevelop select, commercial/industrial properties as they become available.

E. Require studies on stormwater, utilities, and transportation infrastructure to determine adequate capacity and/or necessary improvements related to redevelopment projects.

F. Establish areas where overhead utilities could be placed underground in the future.

Goal 4: Ensure compatibility and strong functional relationships between land uses.

Policies:

A. Maintain and strengthen the character of individual neighborhoods.

B. Prevent over-intensification of land use development, that is, development which is not accompanied by a sufficient level of supportive services and facilities (utilities, parking, access, etc.).

C. Investigate remedies to correct or eliminate existing land use compatibility problems and review and make changes to the zoning map accordingly.

D. Examine requested land use changes in relation to adjoining land uses, site accessibility, utility availability, and consistency with the City's Comprehensive Plan and policies.

E. Accomplish transitions between distinctly differing types of land uses in an orderly fashion which does not create a negative (economic, social or physical) impact on adjoining developments.

F. Address conflicting and non-complementary land uses through code enforcement or improved site design options, where practical.

G. Examine and re-evaluate under-utilized commercial parcels to insure full land utilization and proper infill development of parcels.

Goal 5: Promote environmentally friendly land uses and development design.

Policies:

A. Emphasize stormwater management and treatment to protect and improve water quality in Lake Minnetonka.

B. Implement City-wide programs that will reduce inflow and infiltration into Spring Park's sanitary sewer.

C. Promote the use of "green technologies" in building and site design as a means of encouraging energy efficiency, proper stormwater treatment, sustainable buildings, and attractive living and working environments.

D. Implement language to require erosion control on sites during the construction phase.

Goal 6: Promote an active and healthy community.

Policies:

A. Continue the development of pedestrian trails and bikeways that meet the recreational needs of citizens, and provide an alternative means of transportation.

B. Embrace community planning elements that contribute to good health including affordable housing choices, clean natural environments, efficient public transportation, employment options, job training, quality education, cultural and recreational opportunities, diversity, accessible health services, and emergency management services.

C. Explore opportunities to improve and protect public health through programs and activities that address a range of health related issues such as physical activity, water quality, air quality, good access, and mental health.

D. Continue the City's efforts for effective emergency management services through personnel, training, technology, inter-agency cooperation, and application of safety and fire codes.

E. Make the most of Spring Park's senior population by encouraging participation in the community's labor force, advisory committees, volunteer organizations, and community programs to advance the community's overall planning goals.

NATURAL RESOURCE GOALS

Goal 1: Protect City's natural resources and enhance lake water quality.

Policies:

A. The City of Spring Park will need to study the City's stormwater discharge into Black Lake, Seaton Lake, Spring Park Bay and West Arm Bay and implement a plan to reduce total maximum daily loadings in accordance with MPCA standards.

B. Develop and implement best management practices to reduce sediment and pollution discharge into Lake Minnetonka.

C. Continue to work with Minnehaha Creek Watershed District, LMCD, and DNR on all construction projects addressing issues of erosion control, stormwater management, and on-site inspections.

D. Establish easements over drainageways.

E. Require the creation of rainwater gardens or bio-retention ponds with all development.

RESIDENTIAL GOALS

Goal 1: Allow for a variety of housing types, styles and choices to meet the needs of Spring Park's changing demographics.

Policies:

A. Maintain single family residential neighborhoods and modest homes sizes.

B. Support the renovation of existing multifamily and senior living facilities.

C. Maintain the ability to allow a variety of housing options affordable to a broad range of household incomes.

D. Promote both private and public sector services to allow independent living elderly residents to remain in their homes.

E. Encourage investment and improvements to the City's existing housing stock that adapt homes to the various life cycle needs of Spring Park's residents.

Goal 2: Maintain or enhance the strong character of Spring Park's single family residential neighborhoods.

Policies:

A. Promote private reinvestment in the City's single family housing stock.

B. Examine the City development regulations to promote consistent development within existing single family neighborhoods.

C. Prevent the intrusion of incompatible land uses into low density single family neighborhoods.

D. Provide community education resource information, plan book and/or programs to local property owners on home maintenance, repair, renovation, expansion, and assistance opportunities.

E. Periodically evaluate past practices and define the City's expectations for housing size lot coverage, and setbacks to guide future single family home construction.

Goal 3: Maintain or enhance multiple family residential neighborhoods.

Policies:

A. Work with property owners to maintain and enhance existing multiple family uses.

B. The City shall define its redevelopment ambitions related to land use, density, building design, building height, and amenities within its zoning regulations to aid in guiding future projects.

C. Adhere to the highest quality community design and construction standards for new construction and redevelopment projects.

D. Accompany medium and high density development with adequate accessory amenities such as garages, parking, open space, landscaping, and recreational facilities to insure a safe, functional, and desirable living environment.

E. Consider mixed land uses as an alternative land use option in planning and redevelopment of blighted residential/retail sites.

COMMERCIAL GOALS

Goal 1: Maintain and improve Spring Park's commercial areas as vital retail and service locations.

Policies:

A. Promote the west side commercial area as a community hub through tenant infill and new development within the oversized parking lot.

B. Emphasize unique commercial sites as focal points within the City.

C. Work with local business people to gain an understanding of the changing needs of the business environment.

D. Promote a full and broad range of office, service, lake oriented retailing and services , sit down restaurant and entertainment uses within the commercial areas of Spring Park that are compatible with surrounding residential neighborhoods and promote the small lake community image.

E. Attract new customers generating businesses to Spring Park that are complementary to existing businesses and will contribute to the customer attraction and business interchange of the local commercial areas.

F. Promote the redevelopment and expansion of existing businesses within the City to obtain a higher level of sales and business attraction.

G. Promote private reinvestment in the City's commercial properties. Offer limited public assistance, when appropriate, to facilitate private investment in the City's commercial areas.

Goal 2: Redevelop commercial sites that display building deterioration, obsolete site design, land use compatibility issues and a high level of vacancies.

Policies:

A. Implement the City's commercial design guidelines with all commercial redevelopment efforts.

B. Coordinate redevelopment efforts with adjoining commercial properties to create site designs that promote attractive shopping environments, easy accessibility, and a high level of business interchange between businesses.

C. Blend commercial redevelopment which is of a similar size and scale with existing businesses and which is supportable by available markets.

D. Through redevelopment efforts, encourage and promote retail and service providers that would complement the existing commercial land uses and/or contribute to the accumulative attraction of Spring Park's commercial areas.

E. Commercial development in Spring Park will be required to meet building performance standards which assure the creation of attractive, functional and durable structures. These standards will be established to pursue quality throughout the community, both at the time of development.

F. Commercial redevelopment efforts to promote site designs that provide safe and convenient pedestrian movement, including access for persons with disabilities.

G. Establish commercial building setbacks that improve visibility, pedestrian access, and be sensitive to the streetscape in Spring Park's commercial areas.

Goal 3: Create a cohesive and unified identity for Spring Park's commercial areas.

Policies:

A. Create a low maintenance, uniform streetscape treatment that will enhance the retail shopping experience of Spring Park's commercial areas. Said streetscape shall include, but not be limited to, energy efficient lighting, sidewalks, landscape plantings, pavement treatments, transit stops, benches, bicycle elements, and where practical, burial of overhead utilities.

B. Maintain and enhance the streetscape treatments along each of Spring Park's commercial corridors through public/private cooperative efforts (such as adopting a boulevard program).

C. Promote the interconnecting driveways, sidewalks, shared parking areas between adjoining commercial sites to improve the accumulative attraction of the commercial sites and to promote a high level of business interchange.

D. Establish pedestrian/bicycle connections through commercial sites to the public sidewalk to promote safe pedestrian/bicycle access to the site.

INDUSTRIAL GOALS

Goal 1: Retain Spring Park's industrial land uses to insure a diverse tax base and local employment opportunities.

Policies:

A. Encourage the existing industries to operate within the capacity of their building and site to preserve the City's industrial tax base and preserve local employment opportunities.

B. Promote the high quality industrial construction to insure building durability and an aesthetically attractive appearance.

C. Promote environmentally clean industries to avoid issues related to light or odor nuisances, or concern for air, ground, or water pollution.

Goal 2: Plan for the long term redevelopment of the City's industrial area in a manner that promotes compatible land use patterns and expanded tax base.

Policies:

A. Work with the industrial property owners to redevelop the industrial sites when the time is right.

B. Investigate mixed land uses that may be introduced through redevelopment that produces compatible land use relationships with the surrounding neighborhoods.

C. Promote a high standard of architecture and site design that contributes to Spring Park's positive identity.

D. Define the City's redevelopment ambitions related to land use, density, building design, building height, site amenities, parking, and site access within the City's Zoning Ordinance when redevelopment comes to fruition.

E. Ensure that industrial redevelopment projects provide adequate parking, site circulation, open space, landscaping, and other amenities to support the proposed land use in a safe and functional manner.

TRANSPORTATION GOALS

Goal 1: Maintain and improve the City's streets and transportation opportunities.

Policies:

A. Maintain site and neighborhood access.

B. Alleviate congestion at controlled intersects.

C. Develop solutions to alleviate concerns on maintaining the very narrow streets.

D. Develop a systematic strategy for undertaking street improvements.

E. Utilize the regional trail to create a pedestrian friendly community to link City neighborhoods to commercial areas.

F. Work with Hennepin County to develop a long range plan for light rail transit.

Goal 2: Promote safe pedestrian/bicycle movements throughout the City.

Policies:

A. Work with Three Rivers Park District to be proactive with the construction and continued improvement of the regional trail along the Hennepin County railway.

B. Work with Three Rivers Park District to enhance the trail corridor through landscaping and trail design elements where abutting the rear of adjoining properties.

C. Improve, maintain, and expand pedestrian connections within the City that link community destinations including neighborhoods, parks, recreational facilities, and commercial areas.

D. Provide pedestrian connection between public sidewalks and trails into private, commercial, retail and service sites. Establish a "rollable" sidewalk and trail system that accommodates wheel chairs, strollers, and walkers to encourage use by all community residents.

E. Support pedestrian and bicycle facilities (i.e., benches, rest areas, parking, trail head) to encourage use.

F. Support pedestrian facilities at intervals that are comfortable to City's aging populations.

G. Promote options for sidewalks or trails along Sunset Drive (County Road 51).

COMMUNITY FACILITIES GOALS

Goal 1: Maintain, improve, and create services, facilities and infrastructure to meet the needs and interests of the community.

Policies:

A. Implement a Capital Improvement Program that addresses the repair, replacement, and improvement of community facilities including streets, utilities, storm water management, community buildings, and parks.

B. Periodically evaluate the space needs of governmental and public service buildings. Consider purchasing property to west of City Hall for future expansion.

C. Monitor and maintain all utility systems to ensure a safe and high quality standard of service on an ongoing basis.

D. Manage stormwater runoff to protect the water quality and ground water recharge areas. Work with the community to establish best management practices for handling storm water on small scales.

E. Continue to encourage cooperation and coordination between governmental units to avoid duplication of public service facilities and services.

F. Maintain Spring Park's existing parks and develop connections to other green spaces with the extension of community sidewalks and recreational trails.

G. Promote high speed Internet and other communication technologies within Spring Park.

H. Promote facilities and services that will address the needs of Spring Park's growing diverse population.

Goal 2: Utilize public improvements as a means for continuing civic beautification and an impetus for stimulating investment in private property.

Policies:

A. Continue to promote a streetscape in commercial areas of the City to enhance the local shopping environment and to contribute to the area's identity.

B. Encourage safe and convenient movement of pedestrian and bicycle traffic through the City.

C. Maintain all public buildings and grounds according to high standards of design and performance to serve as examples for private properties.

D. Prepare and annually update a Capital Improvement Program for all public facilities.

E. Coordinate mass transit planning (buses, car pool lots, transit facilities, etc.) with street and streetscape improvements.

F. Continue to work with Hennepin County on the creation of a trail head with public parking along the Hennepin County railway right-of-way.

G. Pursue the burial of overhead utilities wherever financially and physically possible.

H. Work with Hennepin County on the beautification of the Lake Minnetonka boat ramp.

I. Work with Hennepin County to provide convenient parking for boaters and their guests who utilize the Lake Minnetonka boat ramp in Spring Park.

CITY GOVERNMENT/ADMINISTRATION GOALS

Goal 1: Continue to operate the City within a fiscally sound philosophy.

Policies:

A. Maintain and enhance the City's local tax base.

B. Annually review and update the City's Capital Improvement Program for the management, programming and budgeting of improvement needs.

C. Economize and/or take advantage of intergovernmental shared services to avoid duplication.

D. Continue cooperative arrangements to share facilities and community programs.

E. Pursue new technologies and technological upgrades that will assist the community in the most efficient and cost effective delivery of services.

F. Fund local street, utility, storm sewer maintenance, repair and replacement through capital improvement funds to reduce special assessments to Spring Park property owners.

Goal 2: Respond to the concerns and issues of Spring Park residents and businesses.

Policies:

A. Maintain good communication with City residents and businesses through direct contact, open meetings, television, newsletters, outreach programs, City website, and project bulletins.

B. Remain proactive in addressing planning issues, code enforcement, and nuisance complaints raised by the citizens and local businesses.

C. Maintain strong communication between the City and the School District to address ongoing community and school issues.

D. Continue to explore opportunities to expand the usefulness of the City's website.

Goal 3: Maintain a strong level of confidence in the City's advisory committees through member selection, committee continuing education, and lines of communication between the committees and City Council.

Policies:

A. Provide continuing education opportunities for advisory committee members through seminars and presentations to explore trends and changes that will influence the community's future.

B. Maintain strong lines of communication between the City Council and its advisory committees.

C. Provide research, suggestions, and recommendations to the City Council to guide policy and to address the changing needs of the City of Spring Park.

development framework

SPRING PARK

On Lake Minnetonka

city of spring park

comprehensive plan

Based upon the foundation established by the Inventory, Planning Tactics and Policy Plan, this section provides the framework to guide and direct future community growth and improvement. The Land Use Plan is a narrative and graphic description that provides the background and rationale for land use designations as represented on the Land Use Map. The plan has an educational and decision-making function, helping to improve the general understanding of how physical development in the City should take place. Although the emphasis of this section is on land use development and redevelopment, other areas such as transportation, community service, and facility needs are also addressed.

BASIS OF THE COMMUNITY PLAN

Spring Park has a long history of community planning which has shaped the land use, infrastructure, and transportation patterns of the City. From its beginnings, the City's primary planning objective has been to establish and maintain attractive, high quality living and working environments for its residents.

While Spring Park is now a mature, fully developed community, its primary objective remains unchanged. To fulfill this objective, the City will change its planning focus to the maintenance, enhancement, and redevelopment of existing developed areas of the community.

DEMOGRAPHIC FORECASTS

The City of Spring Park, in cooperation with the Metropolitan Council, has formulated the following demographic forecasts for the City. In light of the fully developed character of the community, the household, population and employment growth forecast assumes that the following trends will be continued:

1. Encourage private redevelopment and/or renovation of substandard areas of the City to provide for new housing and employment opportunities.

2. Promote maintenance and improvement of local industries and businesses to provide added employment opportunities.

3. Allow attractive alternative housing types to meet the needs of the City's changing demographics.

Population Forecast Through 2030 for Spring Park					
	1990	2000	2010 Forecast	2020 Forecast	2030 Forecast
Population	1,571	1,717	1,850	2,000	2,100
Households	741	930	1,000	1,080	1,130
Employment	807	1,028	1,330	1,690	1,800

Source: 1990, 2000 U.S. Census,
Metropolitan Council 2030 Regional Development Framework
Updated January 2008

EXISTING LAND USE

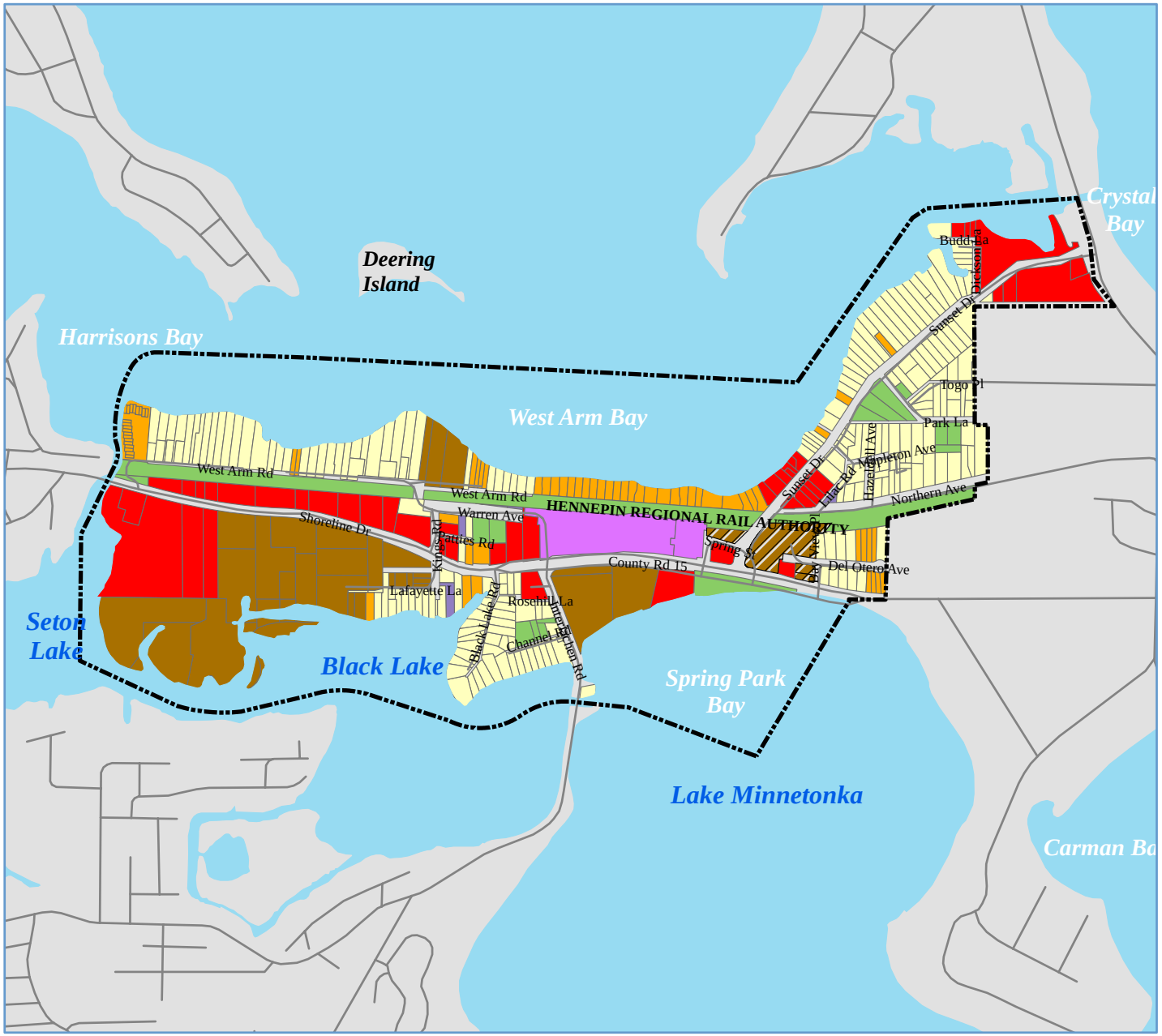
Spring Park is a fully developed community of approximately 210 land acres. The city is characterized by the diversity and relative balance in its land uses. Compared to other cities, Spring Park has a relatively high percentage of its land area in commercial and industrial uses. As a result, Spring Park has a relatively low amount of land dedicated to single-family residential use at only 26.1 percent. The existing land use map shows the distribution and location of various uses as the land is being used today.

Existing Land Use	Acres	Percent	Average Density Units Per Acre
Low Density Residential	69	26.1%	3.3
Medium Density Residential	13	4.7%	5.5
High Density Residential	51	19.1%	14.6
Mixed Use Residential	4	1.6%	41.5
Commercial	42	15.6%	NA
Industrial	9	3.4%	NA
Public	21	8.1%	NA
Vacant	1	.3%	NA
Open Water and Right-of-Way	56	21.1	NA
Total	266	100%	8.8

2020 LAND USE

In 1998, the City submitted its 2020 Future Land Use Plan to the Metropolitan Council for approval. Planned land uses shown on this land use map generally reflect the continuation of existing uses at the time the land use plan was prepared.

Existing Land Use



City of Spring Park

Existing Land Use

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use-Residential
- Seasonal Recreational
- Commercial
- Industrial
- Institutional
- Public
- Vacant

Prepared: May 6, 2008

Feet

0 245 490 980 1,470

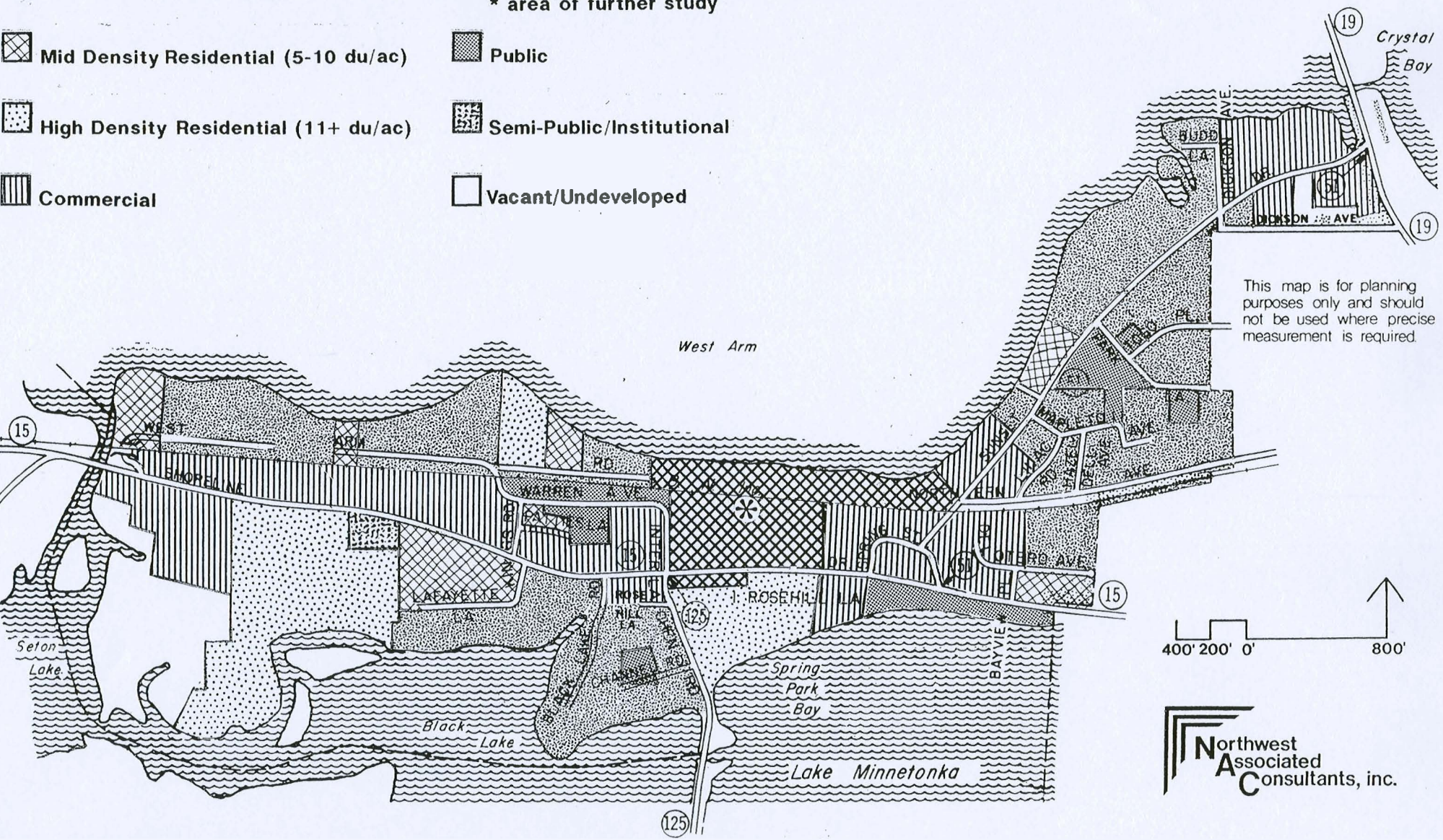
Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

Spring Park Minnesota

Future Land Use Plan 2020

- Low Density Residential (1-4 du/ac)
- Mid Density Residential (5-10 du/ac)
- High Density Residential (11+ du/ac)
- Commercial
- Mixed Use
  * area of further study
- Public
- Semi-Public/Institutional
- Vacant/Undeveloped



This map is for planning purposes only and should not be used where precise measurement is required.

Northwest Associated Consultants, inc.

2030 FUTURE LAND USE

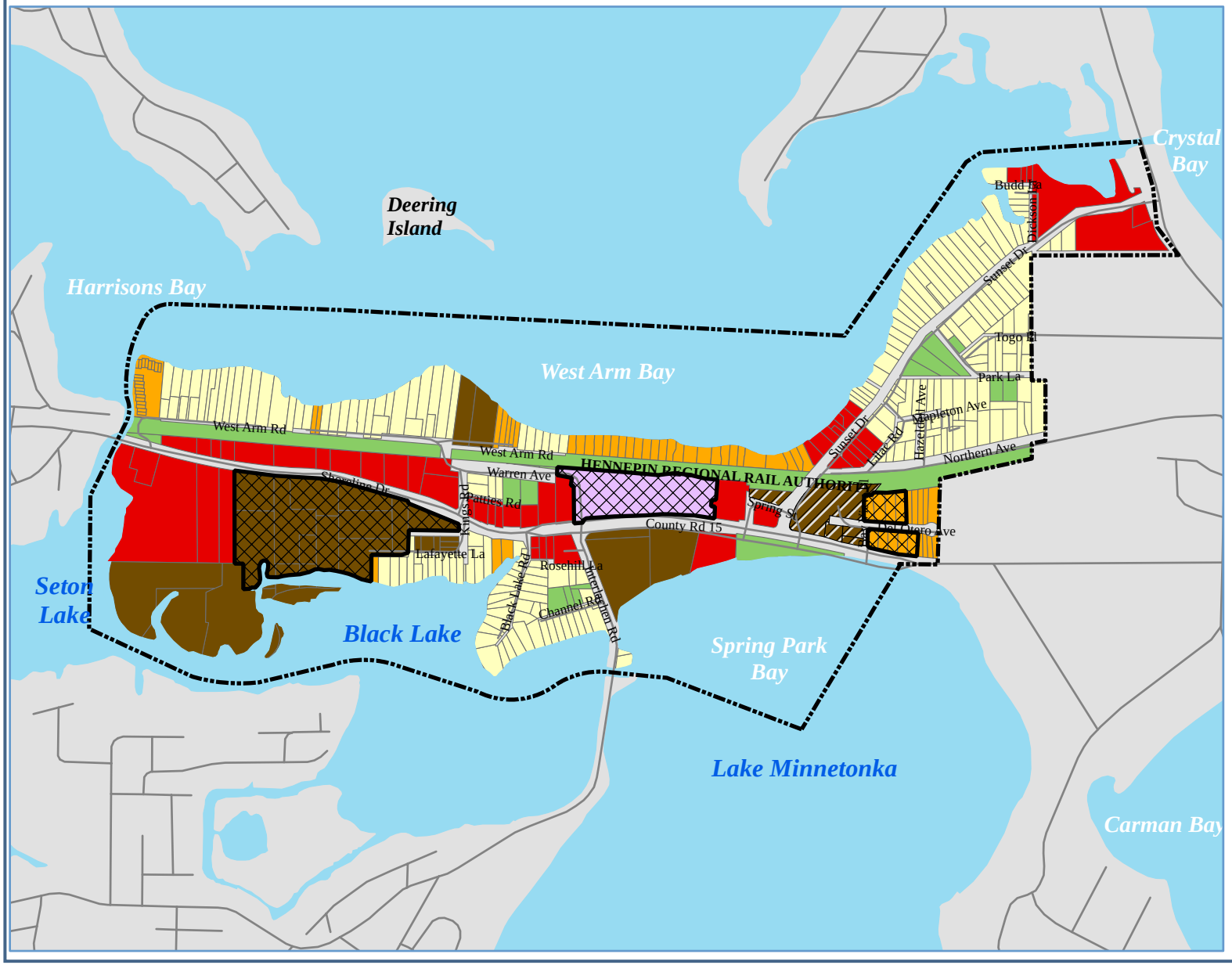
This section of the Plan identifies specific land use types and designations for managing future growth and development in Spring Park. The Land Use Plan and Map will outline the future land use intentions of the City thus providing the foundation for future development regulations. The purpose of a future land use map is to guide the decision-making process for the City on development proposals and rezoning requests. It is broad in nature and represents the general intended use of the land through 2030.

Inconsistencies between existing land uses and the future land use map do not imply that every land use will eventually conform to these designations or that all land will be developed. However, the purpose of land use planning is that the City will develop regulations to implement this Future Land Use Plan as much as is practical, balancing the needs and interests of both individuals and the community as a whole.

The City intends to build upon and preserve the existing character of the community. The Future Land Use Map identifies the location of specific land uses that will guide the development of the City through the year 2030.

2030 Future Land Use	Acres	Percent	Average Density Units Per Acre
Low Density Residential	68	25.74%	3.3
Medium Density Residential	15	5.64%	6.2
High Density Residential	49	18.45%	14.6
Mixed Use-Residential	5	1.69%	41.5
Commercial	44	16.54%	NA
Industrial	8	3.05%	NA
Public	21	8.01%	NA
Open Water & ROW	56	21.08%	NA
Total	266	100.00%	8.8

2030 Future Land Use



City of Spring Park

Future Land Use

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use-Residential
- Commercial
- Industrial
- Public
- Potential Redevelopment Areas

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

RESIDENTIAL

Spring Park is a fully developed community with only one acre of land that remains undeveloped. Residential land uses occupy 133 acres or 50 percent of the City's land area. While low density single family residential land use is the largest single land use by acreage (68 acres), the City's housing stock is dominated by high density residential units as shown below.

Housing Units per Structure
City of Spring Park
2006

Units in Structure		Number of Units	Percent of Total
Single Family	1-unit, detached	229	20.0%
	1-unit, attached	58	5.0%
Twin Home	2 units	10	0.9%
Medium Density	3 or 4 units	4	0.4%
	5 to 9 units	9	0.8%
High Density	10 to 19 units	58	5.0%
	20 or more units	781	68.1%
Total		1,149	100.0%
Source: U.S. Census Bureau; City of Spring Park Building Permit Data			

In looking to the future, the Spring Park residential housing strategies will focus on renovation, modernization, and redevelopment of the City's housing stock.

Low Density Residential (One up to Five Units Per Acre)

Spring Park's low density residential neighborhoods are reflective of the City's history as a lake resort community. These neighborhoods are characterized by narrow lots of variable sizes. Forty-six percent of the single family lots within the community are 10,000 square feet or less in area.

Area of Single Family Lots (square feet)

Area	Properties	Percent
1,327 – 5,000	27	10.0%
5,000 – 10,000	92	33.6%
10,000 – 15,000	77	28.1%
15,000 – 25,000	55	20.1%
25,000 – 40,000	23	8.4%
Total	274	100.0%
Source: Hennepin County, City of Spring Park, NAC		

In spite of relatively small lots, Spring Park's single family lots continue to appreciate due to their proximity to Lake Minnetonka. The following table illustrates the City's 2006 housing market value.

Estimated Market Value of Single Family Homes, Duplexes and Triplexes 2006		
Value	Properties	Percent
$23,000 - $250,000	87	31.8%
$250,001 - $500,000	86	31.4%
$500,001 - $750,000	51	18.6%
$750,001 – $1,000,000	40	14.6%
$1,000,001 – $1,316,000	10	3.6%
Total	274	100.0%
Source: Hennepin County, City of Spring Park, NAC		

Being on Lake Minnetonka has driven up the land values in Spring Park at a rate that is greater than the housing unit value. The following table shows that the majority of homes in Spring Park are worth less than the value of the land. Over 64 percent of all homes in Spring Park make up less than half of the total market value of the entire property.

Building Value to Total Market Value Ratio (Single Family, Duplexes, and Triplexes)		
Building Value Ratio	Properties	Percent
0.00 - 0.16	21	7.7%
0.17 – 0.33	68	24.8%
0.34 – 0.47	88	32.1%
0.48 – 0.62	64	23.4%
0.63 – 0.83	33	12.0%
Total	274	100.0%
Ratio is determined by dividing the value of the building by the total value of the property which includes both building and land		
Source: Hennepin County, City of Spring Park, NAC		

Increasing land values and the appeal of the lake environment has generated private interest in the renovation and expansion of smaller homes or a complete tear down and rebuild to accommodate a larger home. The City wants to promote this reinvestment in its housing stock and preserve the integrity of its low density neighborhoods. In this regard, the City will implement the following strategies to accomplish this goal:

1. The 2030 Future Land Use Plan defines the low density neighborhoods. These areas will be protected through the application of the R-1, Single and Two Family Zoning District.

2. The City will promote the renovation and reinvestment in existing homes that may be non-conforming due to setbacks by allowing their expansion, provided any new additions are fully compliant with required setbacks, lot coverage and parking standards. These homes may be expanded vertically along a non-conforming setback, provided the building complies with the City's height restrictions.

3. Where homes are torn down for a larger home, said redevelopment shall be required to comply with all zoning setbacks.

4. Home construction must consider the need for on-site parking and garage placement. The City will discourage the use of variance in the planning of home sites.

Lake Minnetonka is a natural resource that defines Spring Park's community identity and greatly contributes to City lifestyles and market values. The protection of this natural resource is a priority for the community. When dealing with residential riparian development, the following efforts shall be undertaken:

1. Except for existing non-conforming homes, all new homes or building additions shall meet the city's 50 foot shoreland setback.

2. With any construction on a riparian lot, the City will require the submission of a grading, drainage, and erosion control plan to avoid drainage, erosion or sediment problems into the lake or adjoining lots.

3. Property owners requesting home expansion or site alteration will be required to re-establish landscaped shoreland buffer strips to protect the lake from stormwater runoff.

Seasonal outdoor storage in residential neighborhoods is inherent in lake communities. The City recognizes the need to accommodate the storage of boats, docks, and other uses within reasonable limits. In order to avoid negative impact on adjoining properties or the neighborhood as a whole, the City intends to implement the following rules for outdoor storage:

1. No junk or inoperable vehicles shall be stored outside on a residential lot.

2. All vehicles stored on a lot, including boats or other watercraft, shall have a current license and shall be operable.

Medium Density Residential (Five up to Twelve Units Per Acre)

Spring Park's medium density residential land uses consist of the Seaton Townhomes, West Arm Townhomes, and scattered twinhomes throughout the City. These uses currently occupy approximately 15 acres or 6 percent of the City's total land area.

The City's medium density housing is in very good condition and did not raise any issues or concerns through the comprehensive planning process. The Future Land Use Plan identifies a future medium density housing opportunity along Del Otero Avenue, east of Bayview Place. This area consists of some large lot single family homes and twinhomes. The medium density land use designation will allow opportunities for future redevelopment.

The provision of the medium density land use option at the aforementioned locations are proposed to provide for the redevelopment opportunity for consolidation of substandard lots and removal of marginal housing units. To provide a redevelopment incentive, Spring Park is proposing to regulate the maximum density of medium density residential development through strict adherence to the following design parameters:

1. Lot size.
2. Compliance with required building setbacks.
3. Compliance with required parking standards.
4. Lot coverage standards.
5. Building height restrictions.
6. Provision of on-site stormwater management techniques that will protect the lake from stormwater runoff and pollutants.

High Density Residential (Twelve Plus Units Per Acre)

In 2006, 73 percent of the City housing stock consisted of apartments or condominiums. This high density housing occupies approximately 49 acres, resulting in a City-wide average density of 14.6 units per acre, although recent mixed use redevelopment projects had much higher densities.

Name	Property Address	Units	Description
Bayview	2400 Interlachen Road	107	Apartment
Park Hill	2380 Island Drive	40	Apartment
Park Island	2450 Island Drive	56	Apartment
Park Island West	2470 Island Drive	25	Apartment
Minnetonka Edgewater	4177 Shoreline Drive	82	Apartment
Park Hill North	4601 Shoreline Drive	35	Apartment
Lord Fletcher Apartments	4400 West Arm Road	88	Apartment
Shoreline Place Condos	12 Shoreline Place	11	Condominium
Mist Condos	4201 Sunset Drive	116	Condominium/Apartments
Lakeview Lofts	4100 Spring Street	39	Condominium
Chateau	4497 Shoreline Drive	37	Senior Apartments
Court Apartments	4501 Shoreline Drive	94	Senior Apartments
Villa Apartments	4523 Shoreline Drive	66	Senior Apartments
Health Care Center	4527 Shoreline Drive	64	Senior Apartments
Presbyterian Apartments	4579 Shoreline Drive	17	Senior Apartments
Presbyterian Apartments	4589 Shoreline Drive	17	Senior Apartments
Presbyterian Apartments	4599 Shoreline Drive	17	Senior Apartments

The City recognizes its high density housing as an asset to the community, providing valuable tax base and affordable housing opportunities within the City. The City wishes to maintain its existing housing stock through proper maintenance and renovation. The proximity of this housing to Lake Minnetonka provides a unique living environment that has inspired private reinvestment in these properties.

Additionally, high density housing and mixed land uses have been the land use of choice in community redevelopment. Recent redevelopment projects like Lakeview Lofts and the Mist combined high density housing with limited commercial use to redevelop select blighted areas of Spring Park. These development projects have introduced high valued housing, significant architecture, and substantial tax base. While recognizing the benefits of the redevelopment, these projects also raised issues related to density, building heights, traffic, site amenities, and ability of market absorption of high value condominiums.

In looking to the future, the City recognizes that high density housing will continue to be an important part of the City's housing stock and a viable land use alternative for future redevelopment. The following land use measures shall be undertaken to guide future high density residential land use:

1. The City will work with property owners to promote reinvestment and renovation of the City's existing high density housing stock.

2. Presbyterian Homes is the largest single landowner in Spring Park. They currently provide 312 age-restricted housing units and a broad range of services to assist their residents in maintaining a quality lifestyle. Presbyterian Homes is also a major employer in Spring Park, providing a wide variety of employment opportunities. In 2008, Presbyterian Homes purchased the Park Hill Apartments (75 units) to provide affordable housing opportunities for its employees. Presbyterian Homes has expressed interest in redeveloping their site to more efficiently provide services, expand housing opportunities, and streamline operations. While no immediate plans have been presented, the City will encourage or help facilitate future redevelopment plans to retain this valued facility within the community.

3. To guide future high density residential development efforts, the City wants to make sure that the new projects will properly blend with adjoining land uses and fit within the capacity of the redevelopment site and surrounding roadways. To accomplish these objectives, the following efforts will be undertaken:

    a. The City will examine its high density residential development standards related to building height, setbacks, parking, impervious surface, and stormwater management to define the City's objectives for high density.

    b. In evaluating future redevelopment projects, the City will require conformance with City standards to insure development does not over-utilize the site or create problems for adjoining land uses or streets.

    c. When public improvements are required to facilitate redevelopments, the costs shall be borne by the developer.

    d. Where possible, the City will promote mixed use, high density residential uses with complementary commercial land use to provide services to residents and to maintain a commercial tax base.

    e. The City hopes to promote the development and use of the regional bike trail and future commuter rail line. In this respect, high density residential or mixed land use redevelopment shall be integrated with trail and commuter rail planning.

AFFORDABLE HOUSING

The standard definition of affordable housing assumes that a family or non-family household earning 80 percent of the region's median income can afford mortgage costs (mortgage payments, taxes, insurance and related housing costs) without spending more than 30 percent of their income. Because most homeownership assistance programs are targeted to households at or below 80 percent of median income, this is the threshold for determining whether ownership units are affordable. For 2006 homeownership, the amount identified as affordable to households at 80 percent of area median income was $201,800 and at 60 percent of area median income, it was $148,250.

Rental development and assistance programs are generally meant to assist households at or below 50 percent of median income. The 50 percent of median designation is consistent with the Federal Low Income Housing Tax Credit Program's rent limits. Housing costs for rental units include both monthly rents and utilities. For a family of four in 2006, affordable rents were as follows:

$687 per month for an efficiency or single room occupancy unit
$736 per month for a one bedroom unit
$883 per month for a two bedroom unit
$1,138 per month for a three bedroom and larger unit

As illustrated on the following table, 40 percent of Spring Park's housing stock is deemed to be affordable to households at or below 60 percent of HUD's average median income. This percentage of affordable housing far exceeds that of the neighboring communities. In spite of the City's very high percentage of affordable housing, the Metropolitan Council has forecasted a need for 31 additional affordable housing units.

AFFORDABLE HOUSING NEED ALLOCATION FOR SPRING PARK AND SURROUNDING COMMUNITIES 2011-2020

Community	Sewered Households			Percent of Units Affordable at or Below 60% of HUD AMI	New Affordable Housing Units Needed 2011-2020
	2010	2030	Net Growth		
Spring Park	1,000	1,080	80	40%	31
Minnetonka Beach	236	238	2	3%	1
Minnetrista	1,600	2,700	1,100	2%	3-6
Mound	4,350	4,600	250	28%	68
Orono	2,256	2,950	694	4%	311
Tonka Bay	744	760	16	8%	7
Wayzata	2,100	2,200	100	24%	44

Source: Determining Affordable Housing Need in the Twin Cities 2011-2020, Metropolitan Council, January 2006

The Metropolitan Council has requested information as to how the City will meet its regional affordable housing allocation. The City believes that with 40 percent of its housing already affordable that it already has the capacity to accommodate 31 additional households within its current housing stock based on the following factors:

- 2006 estimated market values of single family homes, duplexes, and triplexes reveal 87 housing units or 31.8 percent of the City's housing stock having a value of $250,000 or lower.

- In 2000, 73 percent of the City's housing stock was renter occupied. The median rent in 2000 was $724 per month. Using the Consumer Price Index to adjust for inflation, the 2006 median rent would be $850 per month. This median rent compares favorably with the aforementioned affordable rent rate.

- Presbyterian Homes purchased 75 units of the Park Hill Apartments to preserve this units as affordable housing opportunities for their employees.

- Spring Park participates with the Metro HRA which offers the Section 8 Rental Assistance Program. This program, in conjunction with the City's large quantity of rental housing, provides opportunities for additional households.

- Job proximity is a Metropolitan Council housing need adjustment factor. The Metropolitan Council forecasted 660 additional jobs between 2000-2020. This forecast is contrary to State demographic trends that estimate a loss of 128 jobs within the City between 2000 and 2006.

While the City hopes to change current trends, it does not have the land area for new businesses to achieve the Metropolitan Council forecasts. An employment forecast of 1,300 jobs by 2030 is a more realistic goal. This reduction in employment opportunities will decrease the future demand for affordable housing.

REDEVELOPMENT AREAS

The Spring Park Comprehensive Plan has identified three possible redevelopment opportunities:

Del Otero Avenue is identified for future medium density residential. This area is a combination of older, larger lot single family homes and newer twinhomes. The medium density residential land use envisions the redevelopment of the remaining single family lots for townhomes or twinhomes. This redevelopment area comprises three acres and would have a density of six units per acre.

Presbyterian Homes has expressed interest in redeveloping their 17.4 acre site. They provide 312 age-restricted housing units and 75 units of affordable multiple family units for its employees. Redevelopment has been suggested as a means of consolidating services, promoting more efficiency within the facility, and expanding housing opportunities. This redevelopment was discussed in only the most preliminary concept terms. No schedule or commitment to redevelopment has been presented. Currently, the site has a development density of 22 units per acre. Through redevelopment, the site has potential to achieve a density of 30+ units per acre.

The City has eight acres of land that is guided for continued industrial land use. The property owner wishes to retain this land use designation, however, expressed possible long range (post 2030) interest in redevelopment. The future vision for this area is a mixed commercial/ residential land use, however, no definite plans have been established for this area. Recent redevelopment efforts have been predominantly high density residential with limited commercial floor space. The City's desire to retain its commercial tax base and its community identity suggests that future redevelopment projects will require a greater percentage of commercial floor space. A 20 percent commercial/80 percent residential may be a reasonable expectation. Past mixed use redevelopment projects achieved an average density of 41.5 units per acre. Any redevelopment of this area of the City will require a Comprehensive Plan amendment. At that time, the City shall fix the amount of commercial floor space and the actual residential density.

MIXED USE

The 2020 Land Use Plan illustrates areas of mixed land use near the intersection of County Roads 15 and 51. Within this area, the City facilitates two major redevelopment projects that encompassed 5 acres and produced 159 residential condominiums and 15,370 square feet of commercial floor space. These projects removed a number of marginal or blighted businesses and introduced new development and architectural themes that sets the standard for new redevelopment projects.

The Land Use Plan limits the mixed land uses to these existing areas, however, the City envisions future mixed land use redevelopment for the City's current industrial area when the property owner wishes to pursue redevelopment. Redevelopment of the industrial site is not immediately pending. As such, an industrial use will continue on the 2030 Land Use Plan. Future redevelopment will require a Comprehensive Plan amendment. Future mixed use redevelopment will be held to Spring Park's Design Guidelines for new construction and redevelopment outlined in the commercial land use description of this section. The City wishes to retain its commercial identity. In this respect, the City will require a greater percentage of commercial land use over past mixed projects. A 20% commercial / 80% residential may be a reasonable expectation. Past redevelopment projects achieved a density of 41.5 units per acre. These land use percentages and densities will be used as guidelines when considering future development. The actual development will be defined through a Master Plan and a Comprehensive Plan amendment.

COMMERCIAL

Spring Park's commercial land area occupies approximately 40 acres or nearly 15 percent of the City's total area. Commercial development has occurred in a scattered development pattern following the City's major roadways. For the most part, the commercial activities consist of a mixture of convenience goods retailers, restaurants, office space and marine-oriented businesses. With the exception of the Marina Shopping Center, most of Spring Park's commercial development consists of older buildings situated on small, narrow lots along Shoreline Drive (CSAH 15). General issues confronting the City's commercial development include over-utilization of the sites, poor building aesthetics, undefined parking lots, uncontrolled outdoor sales lots, and outdoor storage areas. These issues are highlighted in the following paragraphs in the descriptions of the specific commercial locations.

In the northern end of Spring Park is Lord Fletcher's Restaurant. This is a high profile restaurant that attracts customers from most of the western Metropolitan Area. This commercial location is isolated from the City's other commercial uses. Surrounded by residential uses, the restaurant activities have generated some compatibility concerns for adjacent residents. Over the years, the restaurant has increased its Summer time outdoor activities expanding its service capacity on the site. The outdoor activities have increased noise and parking demands. Without sufficient available on-site parking, customers utilize local streets for parking. The on-street parking has created neighborhood problems with regard to traffic congestion and uninvited pedestrian traffic through the residential properties.

In response to residents' concerns, the City and the restaurant have taken steps to correct the problems. Lord Fletcher's executed a parking agreement for off-site parking on the Dakota Railroad right-of-way site and provided a shuttle service to the off-site lots. The restaurant also pursued the development of a parking lot area on the east side of County Road 51 across from their property in 1989. The City has posted the streets and nearby Thompson Park "no parking" in an effort to alleviate some of the local problems. With the acquisition of the Dakota Railroad right-of-way by Hennepin County as a regional trail and future light rail corridor, Lord Fletcher's continued use of the right-of-way for off-site parking has been eliminated.

The City of Spring Park has supported the County's efforts to acquire the railroad right-of-way. The City envisions the placement of a regional trail head and a future light rail transit station on the right-of-way just west of Sunset Drive (County Road 51). Recognizing that transit station may be decades away, the City supports an interim corridor plan that establishes a regional trail head that provides immediate amenities that will serve trail users, support local businesses, and provides an aesthetically attractive landscape that complements the adjoining land uses in the area. The desired trail head amenities include the following components:

1. A regional bicycle and pedestrian trail that will also provide some local connection to Spring Park neighborhoods and commercial areas.

2. Trail head amenities including kiosks, benches/tables, bike racks, toilets, and site lighting.

3. Off-street automobile parking that will serve the trail users, local businesses, and/or a park and ride lot for currently available mass transit and/or the future light rail as well as overflow guest parking for the Hennepin County boat landing and additional residential guest parking.

4. Controlled site access points from County Road 51.

5. Stormwater management improvements within the railroad right-of-way.

6. Establish a trail head design that is coordinated with City streetscape efforts along Shoreline Drive (County Road 15), Sunset Drive (County Road 51), and Spring Street related to site changes, landscaping, site design, sidewalks along County Road 51, and site lighting.

The immediate use of the property will help to amortize any initial investments in improvements that may be lost with the full development of a light rail transit station in the future. Through the interim trail head plan, the City locally wishes to accomplish the following:

1. Provide a regional bicycle and pedestrian trail with appropriate support facilities.
2. Clean up a marginal site within the City.
3. Maintain a parking supply for remaining local businesses and guest parking in the area.
4. Create an attractive sense of place within the center of Spring Park.

Historically, downtown Spring Park has been located at the intersection of County Roads 15 and 51. This area contained a variety of small businesses on small sites. Limited by lot size, building design, and changing trends in retailing and the local market, these businesses were showing signs of deterioration. In 2002, the City solicited developers interested in pursuing redevelopment of blighted properties along the north side of Spring Street. In 2004, the City found a developer who redeveloped the 16,000 square foot block with The Lakeview Lofts mixed use development consisting of 39 condominiums and 3,750 square feet of commercial floor space. This redevelopment project established a new standard for development in Spring Park, emphasizing underground parking, strong building architecture, and enhanced streetscape improvements.

The same year, The Cornerstone Group Inc. approached the City with a second private major redevelopment project, located at the northeast quadrant of the Spring Street (County Road 15) and Sunset Drive (County Road 51) intersection. The developer privately acquired and assembled eight commercial properties into a 2.99 acre redevelopment site. Over a period of 14 months, the City worked with the developer to approve a mixed land use project that included 120 residential condominium units and 11,621 square feet of commercial floor space.

As in the case of Lakeview Lofts, the City stressed the need for off-street parking to support the development, high architectural standards for the building and aesthetic landscape components to enhance the project. The City required the Mist and Lakeview Lofts redevelopment projects to include a commercial land use component. This requirement is intended to keep this prominent intersection within Spring Park a community focal point for its residents.

Highway commercial uses are located along both the north and south sides of Shoreline Drive (County Road 15) and Sunset Drive (County Road 51). The most significant single development is the Marina Shopping Center which provides for a variety of businesses that serves the community. The Marina Shopping Center underwent a building face lift in 2003, which helps to enhance the appearance of the buildings. Inspection of the site reveals a large under-utilized parking lot that may provide opportunity for new development and/or parking lot enhancements that would contribute to the customer appeal of the shopping center. The size of the Marina Shopping Center site could provide a satellite building pad for a new commercial building that would add to the customer draw of the existing businesses. Expansion of the shopping center or the creation of another freestanding building must recognize the following objectives:

1. Off-street parking must be adequate to address the needs of the shopping center and provide for safe and functional circulation patterns.

2. Parking lot improvements that will define internal circulation patterns and provide landscape enhancements that will improve the aesthetic appearance of the parking lot and overall site from Shoreline Drive (County Road 15).

3. Exterior lighting improvements to provide aesthetically attractive fixtures that control light levels to provide a safe shopping environment but avoid nuisance glare to the surrounding properties and the lake surface.

The commercial properties along the north side of Shoreline Drive (County Road 15) are generally characterized by small, shallow lots and older buildings. While some of the existing business sites are in very good condition, the other commercial sites have undergone numerous changes in the type of business. The small lot sizes limit space for off-street parking or business expansion. Many sites are over-utilized with parking, sales displays and outdoor storage consuming much of the site, right up to the Shoreline Drive right-of-way.

The City wishes to maintain vitality of its commercial sites, but has growing concerns over the function, appearance, and over-utilization of the commercially zoned properties along Shoreline Drive (County Road 15) and Sunset Drive (County Road 51). The City hopes to encourage reinvestment and perhaps future redevelopment of these commercial sites recognizing the changing commercial environment within the City. In this respect, the City is proposing two strategies for future commercial growth. These strategies are intended to guide the development or redevelopment of commercial properties in the commercially zoned areas, and are not

intended to apply to existing residential uses in commercially zoned areas. The interim strategy addresses the modifications to existing businesses, buildings, or sites. The long range strategy outlines objectives for sites that would undergo redevelopment of the site.

Interim Strategy: Design Guidelines of Building Renovations and Minor Expansions

For commercial development applications that: a) change the tenancy of the building that increases the parking demand on the site; or b) expand the building footprint or gross floor area on the site by more than 30 percent but less than 50 percent of its current size, the following development goals and strategies shall be applied:

1. Encourage building expansions toward a public street with landscaped front yards and building entrances oriented to the street.

2. Establish a minimum setback and physical separation between the on-site parking or sales display and the front lot line in order to provide landscaped green space that will contribute to the streetscape appeal of public streets.

3. Encourage the redesign of commercial parking lots to the side yards (shared parking where possible) with established performance standards that address surfacing, striping, stall dimensions, lighting, and landscaping.

4. Establish minimum architectural standards that will serve to enhance those sides of the buildings facing public streets without mandating a complete building reconstruction.

5. Establish performance standards for outdoor sales and outdoor storage that define appropriate locations for said uses, and address surfacing, defined area of use, and screening where appropriate.

The aforementioned standards shall not apply to: a) building expansions or additions that increase the building footprint by less than thirty (30) percent; and b) building expansions regardless of size that lie to the rear of the existing building and do not increase the building façade exposed to a public street.

Long Range Strategy: Design Guidelines for New Construction and Redevelopment

With development applications that: a) expand the existing building footprint or gross floor area by 50 percent or more; b) combine lots to create a large commercial parcel, and c) raze the existing buildings to accommodate a new development. The following development goals and strategies shall be applied:

1. Encourage commercial buildings to be located toward the public street with landscaped front yards and building enhancements oriented to the street.

2. Promote high quality building architecture that establishes the building as an aesthetic component of the public street streetscape through the use of the following architectural guidelines:

    a. Use of high quality, durable exterior wall materials.

        Preferred materials include:

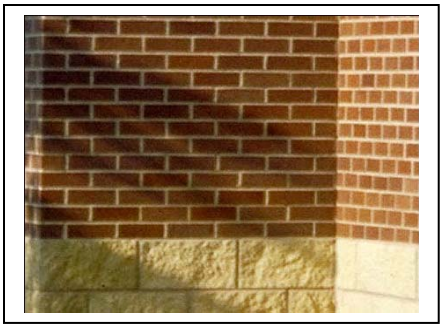
        - Brick
        - Natural stone or replicas
        - Precast concrete units, concrete block, cast in place or tip up concrete panels provided the surfaces are molded, serrated or treated with a textured material in order to give the wall surface a three-dimensional character
        - Stucco
        - Wood, lap siding, vertical siding, or wood shakes; surfaces must be painted
        - Synthetic wood (fiber cement) siding resembling horizontal lap siding and similar materials
        - E.I.F.S. (exterior insulation and finish systems)
        - Architectural metal roof may be permitted.

        Prohibited materials:

        - Unadorned plain or painted concrete block
        - Aluminum, vinyl, fiberglass, asphalt or fiberboard (masonite) siding
        - Unfinished Metal panels or metal panels that are finished with paint only.

    b. At least two complementary exterior colors are used are on each façade with no color exceeding 70 percent of the total wall.

c. Accent material may be used on up to 20 percent of any of the building facades exclusive of doors and windows. These materials may include architectural metal work, glass block, or similar materials.



3. Promote interesting building facades:

a. Variations in façade depth are encouraged.

b. Building design should avoid large areas of blank wall space on the street front façade.

c. The use of architectural features and detailing to enhance building surfaces is encouraged. Said features include setback of upper floors and variable roof lines, strong building corner features, entrance detailing and emphasis, canopies, projected or recessed windows, etc.

d. Buildings greater than 40 feet in width should be articulated into smaller increments utilizing the following techniques, or a similar approach:

- Stepping back or extending forward a portion of the façade.
- Use of different textures or contrasting, but compatible, materials.
- Diversion into storefronts with separate display windows and entrances.
- Arcades, awnings, window bays, balconies, or similar ornamental features.

- Variations in rooflines to reinforce the articulation of the primary façade.

Variation in rooflines

Façade Articulation

4. Encourage variable roof lines to promote visually interesting buildings:

   a. Projects should be encouraged to provide a varying roof line along the street front.

   b. Architectural elements such as cornices, decorative chimneys, and strong corner elements are encouraged to enhanced the roof line of traditional style buildings.

   c. Parapet or cornice details should be completed in a three dimensional manner so that the back of the roof features or unfinished roof areas are not visible.

   d. Rooftop equipment should be screened from view from adjacent streets and from Lake Minnetonka in a way that is integral to the architecture of the building and with materials similar to the building. Roof top equipment shall include, but not be limited to, heating, ventilation, air conditioners, elevator penthouse, chimneys, antennas, satellite dishes, electrical equipment for the building. Architecture drawings shall be submitted to the City showing the location and method of screening the roof top equipment.

   e. No rooftop equipment shall exceed a height of ten (10) feet above the roof of the principal building.

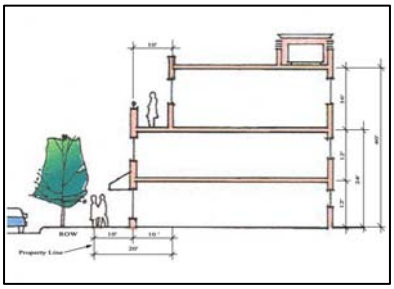
e. Gutters or other storm water controls should be compatible architecturally with the remainder of the structure.

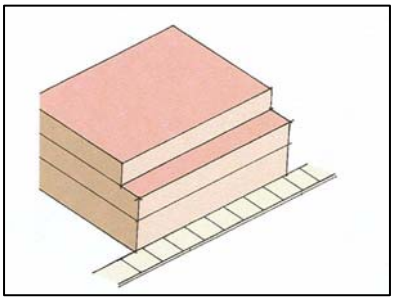
5. Building height along public streets shall be managed to mitigate the impact of taller buildings within the City's commercial zoning districts:

a. No structure shall exceed three stories or 40 feet, whichever is less, in accordance with building height requirements for all commercial districts, unless approved by conditional use permit.

b. The first floor building façade height should complement the scale of neighboring buildings in the area.

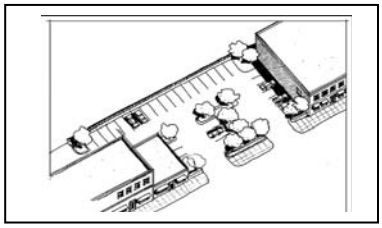
c. Buildings located within 20 feet of the front lot line will be limited to a height of 24 feet. Such buildings may exceed 24 feet if the 3rd floor is set back 10 feet from the front of the building.





6. Promote parking lot design that is both functional and aesthetically pleasing:

a. Off-street parking is encouraged to be located on the side or rear of buildings.



Parking to the side and rear

b. If parking must be located in the front of a building, the parking area should have a defined edge with curbing, surfacing, and landscaping to separate it from the public right of way, adding both physical separation and an aesthetic component.

Parking in Front of Building

c. Landscaped islands or similar elements should be encouraged in large parking lots with 60 stalls or more.

Landscaped Islands

d. Parking areas adjacent to public streets or sidewalks should be screened with a combination of landscape material and decorative fencing or walls sufficient to screen parked cars on a year-round basis while providing adequate visibility for pedestrians.

Parking Lot Screening and Landscaping

e. To ensure efficient use of available space, all parking lots should be designed to include, curbing, surfacing, and striping.

Improved Parking Lot

f. Shared parking should be encouraged to take advantage of varying parking demands between mixed uses and to reduce the amount of impervious surface.

The aforementioned guidelines outline the City's immediate and long range intentions for retaining local businesses that will serve Spring Park residents. The architectural guidelines are intended to improve on existing conditions and establish the City's long range commercial vision for areas of the City guided for commercial land uses.

INDUSTRIAL

There is approximately 8 acres of industrial guided land within Spring Park. This represents approximately 3 percent of the City's land area. The industrial area has a multi-tenant building that offers leasable space for office, warehousing, and manufacturing uses. The property is well maintained and property owner investments have contributed to improving the building's function, architectural appearance, and streetscape appeal.

This industrial area has demonstrated the ability to compatibly coexist with surrounding land uses. In this respect, the City will continue to work with the landowner to allow for the continuation of this industrial land use. Areas of issues that will continue to be monitored and addressed include:

1. The City will monitor industrial land uses to promote environmentally clean businesses to avoid issues related to air, water, and ground pollution.

2. The City shall continue to work with the property owner to avoid land use nuisance issues related to noise, light, odors, or traffic.

3. The City will require changes in building occupancy to provide adequate off-street parking.

Looking to the future, both the property owner and the City question the long range viability of industrial uses within Spring Park. Changing industrial trends, limited transportation networks into Spring Park, environmental concerns, and increasing land values all suggest that this area will be a candidate for future redevelopment and a land use change.

The 2030 Land Use Plan will continue to guide the site for industrial uses. However, the City anticipates that, in cooperation with the property owner, future redevelopment will occur. At that time, a Comprehensive Plan amendment will be pursued to change the industrial land use to a mixed use land use classification that would include high density residential, commercial retail and services, and office space. Redevelopment efforts will be required to comply with Spring Park's Commercial Design Guidelines and coordinated with County plans for a future commuter rail transit station.

Historic Preservation

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

INTRODUCTION

The Transportation Plan is based on a total transportation system and how it relates to and serves the land use patterns of the community. The transportation system encompasses several modes which include the automobile, pedestrian, and bicycle. The transportation system serves to tie together, and in some cases separate, the various land use activities in the community. The Transportation Plan will present the basis for programming and planning maintenance and upgrades to the transportation system.

ROADWAY JURISDICTION CLASSIFICATION

Roadways are classified on the basis of which level of government owns or has jurisdiction over them. For Spring Park, the levels of government are Hennepin County and the City. Hennepin County maintains the County State Aid Highway (CSAH) and County Road (CR) Systems.

FUNCTIONAL CLASSIFICATION

The functional classification system is the creation of a roadway and street network which collects and distributes traffic from neighborhood streets to collector roadways to arterials and ultimately, the Metropolitan Highway System. Roads are placed into categories based on the degree to which they provide access to adjacent land or provide mobility for "through" traffic. Within this approach, roads are designed to perform their designated function and are located to best serve the type of travel needed.

The designation of functional classification of roads in Spring Park is not expected to change during the planning horizon of this plan. The functional classification system used in the City of Spring Park, as described below and shown in the Functional Class map conforms to the Metropolitan Council standards. The Metropolitan Council has published the criteria in the Transportation Development Guide/Policy Plan. This guide separates roadways into five (5) street classifications, including principal arterials, minor arterials, major collectors, minor collectors and local streets. These classifications address the function of state, county and city streets from a standpoint of the safe and efficient movement of traffic through the City while providing satisfactory access to residents and businesses located within the City.

Principal Arterials

Principal arterials have the highest traffic volume and capacity. They are considered part of the Metropolitan Highway System. They are intended to connect the Metropolitan Centers with one another and connect major business concentrations, important transportation terminals, and large institutional facilities. They are typically spaced 2-6 miles apart in developing areas and 6-12 miles apart in commercial/agricultural and general rural areas. Interchanges on principal

arterials are usually spaced at least one mile apart in urban areas. There are no principal arterials in Spring Park.

Minor Arterials

Minor arterials connect important locations within the City to the Metropolitan Highway System and with other locations in the region. Minor arterial roadways and highways serve less concentrated traffic generating areas, such as neighborhood shopping centers and schools. Minor arterials roadways serve as boundaries to neighborhoods and distribute traffic from collector streets. Although the predominant function of minor arterial streets is the movement of through traffic, they also serve considerable local traffic that originates or is destined to points along specific corridors.

The Metropolitan Council has identified "A" minor arterials as streets that are of regional importance because they relieve, expand, or complement the principal arterial system. County Road 15-Shoreline Drive is the only "A" minor arterials in Spring Park. Shoreline Drive serves as a major east-west commuter route connecting Spring Park with travel destinations in the balance of the metropolitan area. General issues affecting traffic movement include the number, location and design of street and lot access points. Future improvements and development along CR 15 must be sensitive to these issues.

"B" minor arterials have the same general function as "A" minor arterials but are not eligible for federal funds. They have similar characteristics to Collector Streets (see below). County Road 19 - Shadywood Road is the only "B" minor arterial serving Spring Park It forms part of the north eastern boundary of the City.

Collectors (Major and Minor)

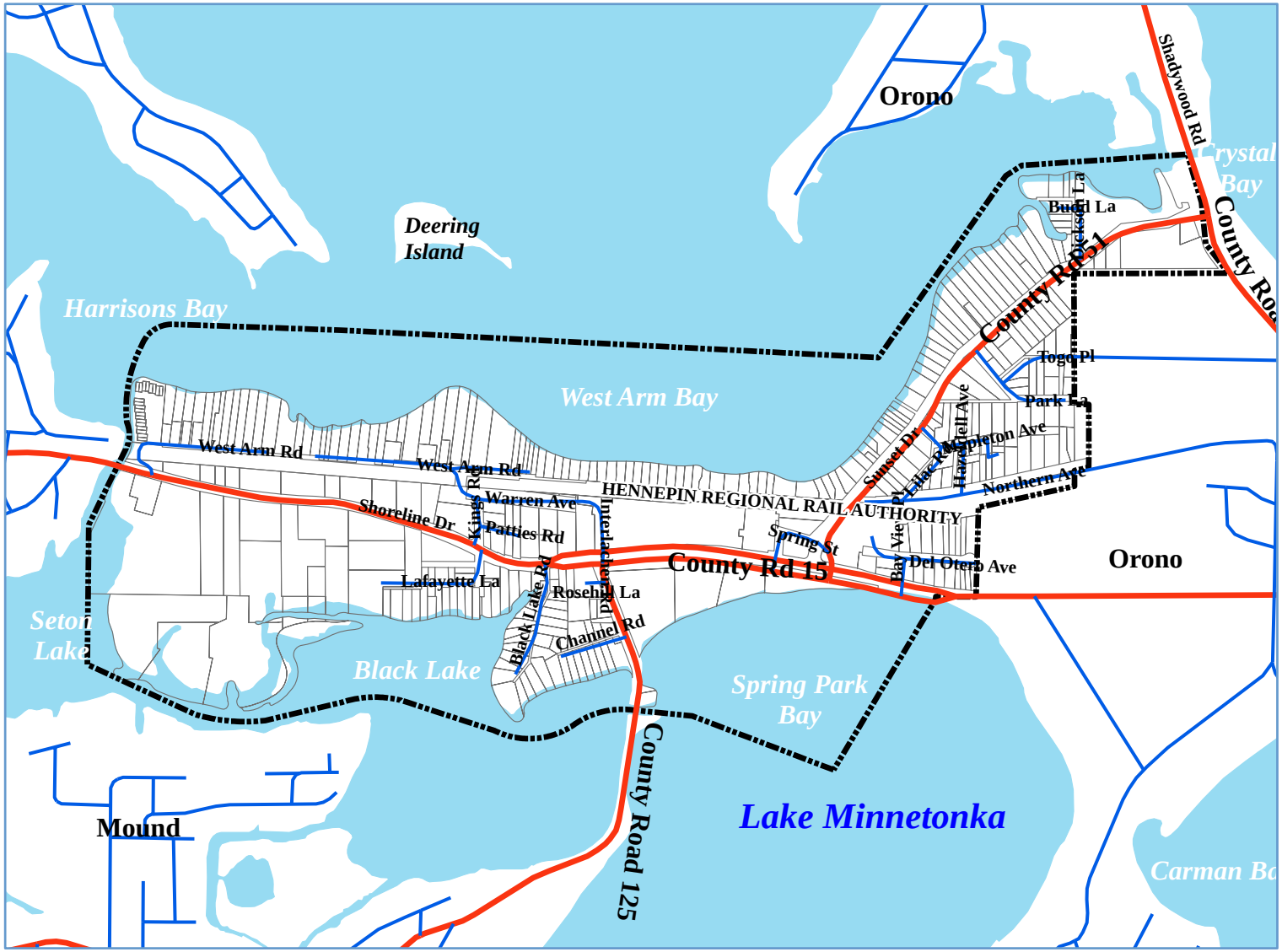
Collector streets provide direct service to residential areas, commercial and industrial areas, local parks, churches, etc. In order to preserve the amenities of neighborhoods while still providing direct access to business areas, these streets are usually spaced at on-half mile intervals. This spacing allows for the collection of local traffic and conveyance of that traffic to higher use streets. Collector streets may also serve as local through routes. Parking and traffic controls are usually necessary to ensure safe and efficient through movement of moderate and low traffic volumes. These streets are usually included in the City's Municipal State Aid System. Sunset Drive/County Road 51 and Interlachen Road are the only collector roads in the City.

Sunset Drive connects County Road 15 to County Road 19. Topography along the west side of the roadway creates some difficult access points. Pedestrian traffic patronizing Lord Fletchers Restaurant has created problems for area residents and traffic circulation in the past.

Local Streets

Local streets provide the most access and the least mobility within the overall functional classification system. They allow access to individual homes, shops, and similar traffic destinations. Through traffic should be discouraged by using appropriate geometric designs and traffic control devices.

Roadway Jurisdiction



City of Spring Park

SP SPRING PARK On Lake Minnetonka

Legend

- County Road
- Local Road

Feet

0 250 500 1,000 1,500

Source: Hennepin County, City of Spring Park, MN DNR, Met Council, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

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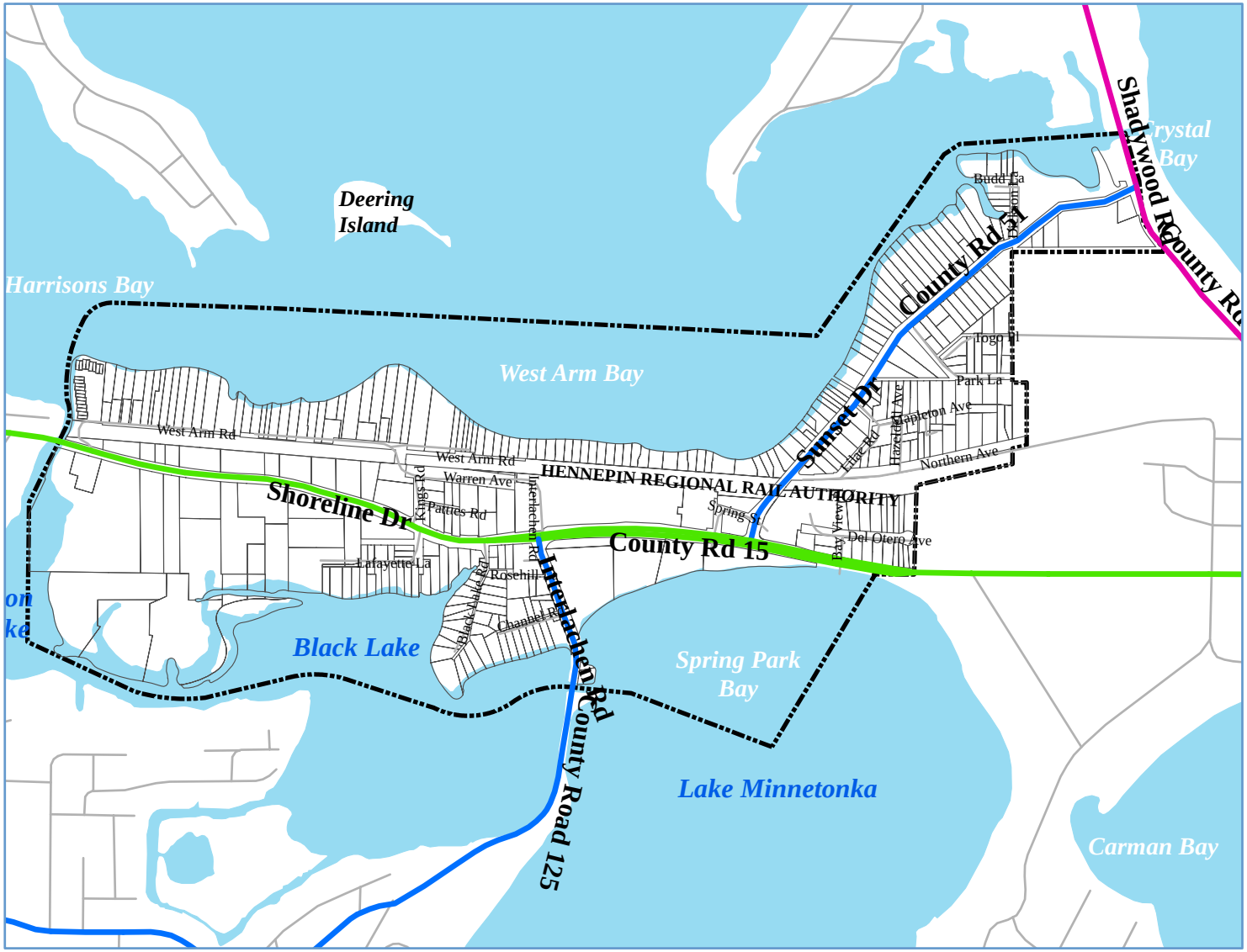
Functional Classification System



City of Spring Park

Functional Classifications

- A Minor Arterial
- B Minor Arterial
- Major Collector
- Local Roads
- Lakes

Feet

0 250 500 1,000 1,500

Source: Hennepin County, City of Spring Park, MN DNR, Met Council, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

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TRAFFIC ANALYSIS ZONES

Households, population and employment have been forecasted and allocated to the only traffic analysis zone in the City.

Allocation of Forecast to Traffic Analysis Zones												
	Population				Households				Employment			
TAZ	**2000**	**2010**	**2020**	**2030**	**2000**	**2010**	**2020**	**2030**	**2000**	**2010**	**2020**	**2030**
631	1,717	1,850	2,000	2,100	930	1,000	1,080	1,130	788	1,330	1,690	1,800

TRAFFIC VOLUMES

Existing and projected Average Daily Traffic (ADT) volumes on the most important roads in Spring Park are depicted on the Traffic Volumes Map. ADT volumes represent the total traffic carried on the average 24-hour day for the year. Historical data is provided to compare to forecasts prepared by Hennepin County and Mn/Dot. Traffic on Shoreline Drive in Spring Park is largely a function of demand generated outside the city. Shoreline functions as a major commuter route for communities west of Spring Park. 2030 future land use in Spring Park remains relatively unchanged from that shown on the 2020 future land use map.

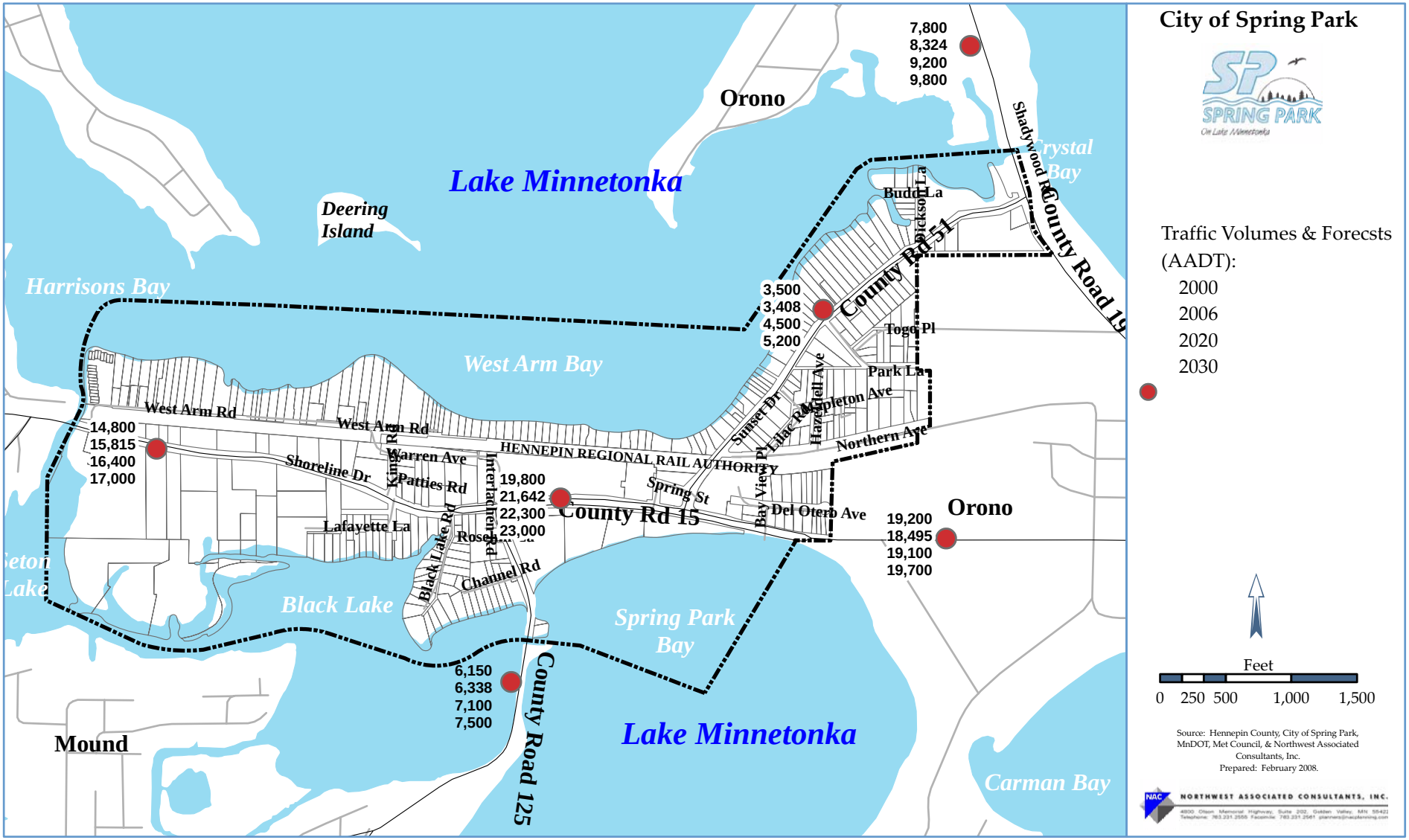
SAFETY AND CAPACITY

Parking

The City's commercial and manufacturing areas have experienced problems with parking shortages and inconvenient parking supplies. These parking shortages have produced concerns with regard to traffic congestion, on-street parking, and pedestrian movement through residential areas. The provision of adequate parking will be essential to all new development and redevelopment opportunities. The use of clustered joint parking areas will be promoted as a means to provide convenient parking in commercial areas. The aesthetic treatment of parking areas is addressed in the commercial design standards in the Land Use Chapter.

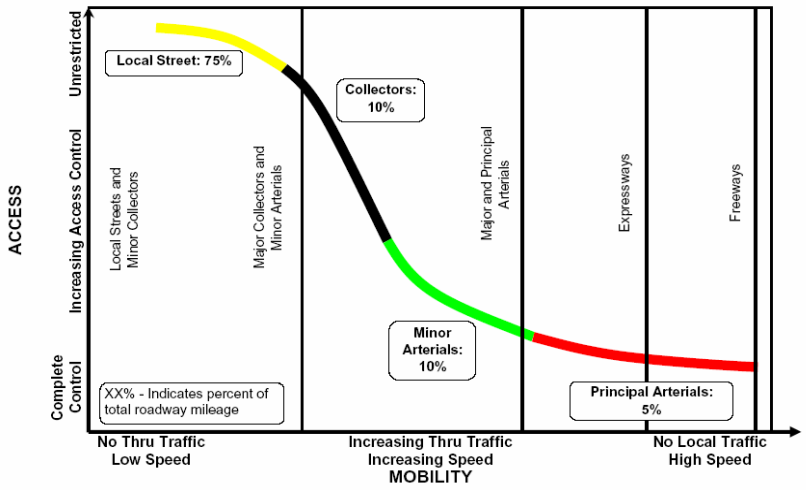
During the summer months, there is a significant demand for parking generated by the Hennepin County boat launch facility at the intersection of Shoreline and Sunset Drives. The site contains a limited amount of parking. When these spaces are filled, facility users park in commercial and residential areas of the City. The City has advocated for additional parking spaces at the trail head to help accommodate parking demand generated by both the boat launch and trail head. The City will continue to encourage the County to supply enough parking space to meet parking demand generated by County facilities.

Traffic Volumes & Forecasts



Access Management Guidelines

Access management guidelines are developed to maintain traffic flow on the network so each roadway can provide its functional duties, while providing adequate access for private properties to the transportation network. This harmonization of access and mobility is the keystone to effective access management.



Mobility, is the ability to move people, goods, and services via a transportation system component from one place to another. The degree of mobility depends on a number of factors, including the ability of the roadway system to perform its functional duty, the capacity of the roadway, and the operation level of service on the roadway system.

Access, is the relationship between local land use and the transportation system. There is an inverse relationship between the amount of access provided and the ability to move through-traffic on a roadway. As higher levels of access are provided, the ability to move traffic reduced.

Access to the transportation network serving the City is controlled in terms of driveway openings and side street intersections. The spacing of intersections and driveways is controlled based on roadway functional class and traffic volumes. This approach limits the impact of intersections and driveways on average speeds and levels of service on roadways appropriate to the function of those facilities. The City observes Hennepin County Access spacing guidelines where possible within the context of being a fully developed community. These guidelines are used in conjunction with the City's commercial design standards which encourage shared access to sites and limit the number of curb cuts and points of access on County Roads.

The access spacing guidelines are used for all plat and site plan reviews. In that these guidelines are used as part of a plan and not an ordinance, reasonable discretion could be applied to each site.

PLANNED IMPROVEMENTS TO ROADS

Metropolitan Highway System

There are no metropolitan highways in Spring Park

Local Roads

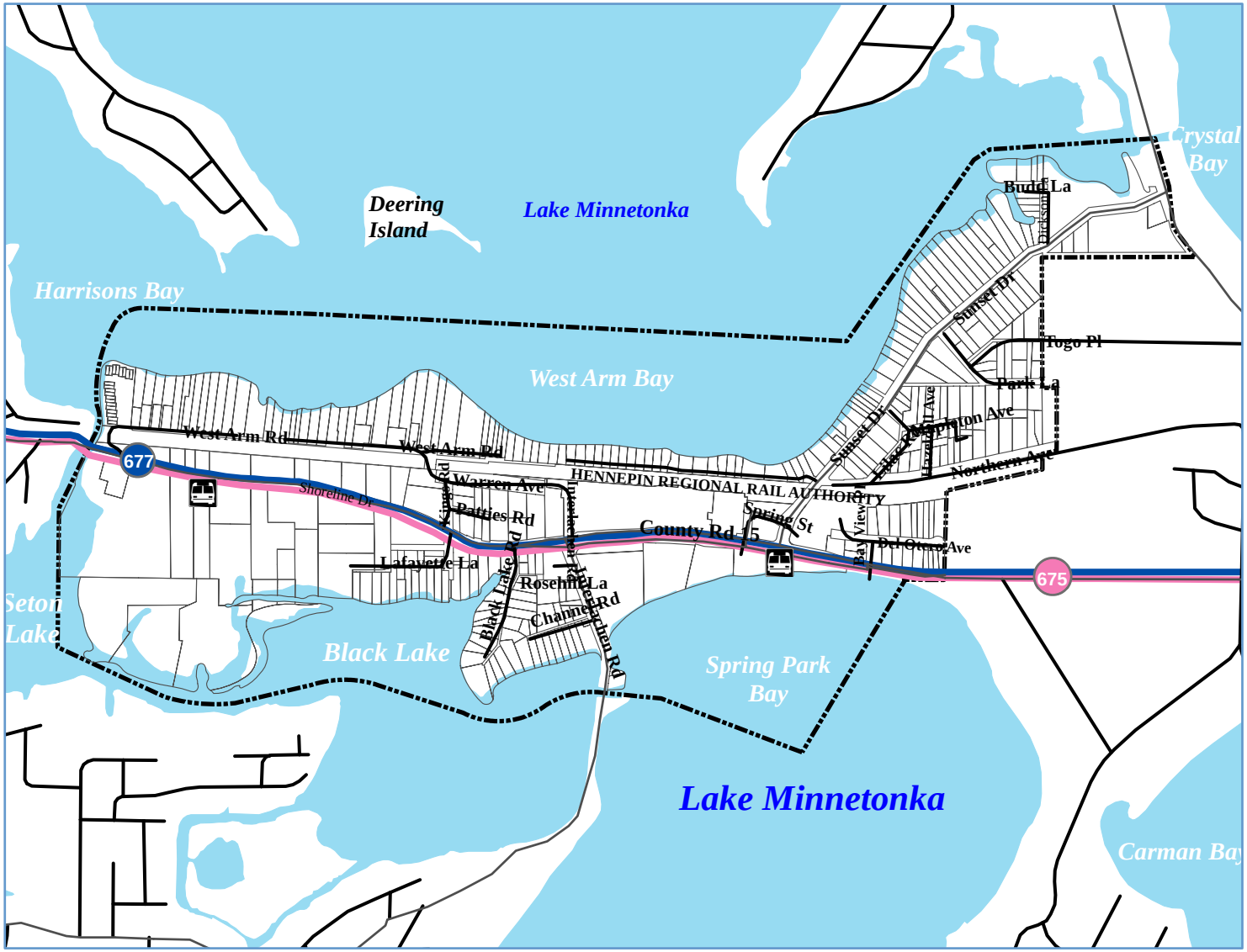
The City's local streets are a legacy of the City's early history as a resort community and physical conditions. Local streets are characterized by narrow rights-of-way and pavement widths, dead end streets, and incomplete street networks. These issues present problems for two-way traffic and access for street maintenance and emergency vehicles; however narrow streets do contribute to the City's character and identity and restrict traffic and driving speeds.

Immediate solutions for correcting the local street conditions are not available. The City completed a street condition study in 2007 to establish a framework for a paving improvements and financing such improvements. Parking is often an issue on streets. Many streets require signage to communicate parking restrictions as well as regular enforcement of parking regulations.

TRANSIT SERVICE

There are three express bus routes in the west Lake Minnetonka region available to city residents and businesses. Route 675 and 677 run on County Road 15 provide express service to downtown Minneapolis via Highway 12/Interstate 394. Park and ride facilities are located at the Mound Transit center and at the intersection of County Roads 19 and 15 in Orono. Route 670 offers express service to Downtown Minneapolis via Highway 19 and Highway 7. Minnesota rideshare provides ride share services to employers, communities and individual in the Twin Cities. Light Rail Transit service is anticipated after 2030 in the old Dakota Rail corridor. The City will continue to encourage multiple modes of transportation including bicycle trails within the City and work cooperatively with regional transit services.

Transit Routes



City of Spring Park

Metro Transit Routes

- 675
- 677
- Roads
- Lakes
- Bus Stops

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park, MN DNR, Twin Cities Metro Transit, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
Telephone: 763.231.2555 Facsimile: 763.231.2561 planners@nacplanning.com

BIKE TRAILS

The Dakota Rail Line Regional Trail is under construction within the old Dakota Rail corridor. This trail will begin in Minnetrista and end in Wayzata. The trail is a joint project of the Hennepin County Regional Rail Authority, Hennepin County Public Works and Three Rivers Park District. This regional facility will also provide local connections in the community. The City is highly supportive of this facility. The City expects the facility to meet local needs and to minimize its potential for negative impacts. To this end, the City looks to additional landscape buffers along the trail to screen trail traffic from adjacent neighborhoods and businesses. Improvements to a trail head site that address City identified needs, including parking and rest areas, are still desired. An additional "mini rest area" near Warren Avenue and Kings Road is a suggested addition to this regional service.

In order to enhance local connectivity, the City envisions a bike and pedestrian trail along Sunset Drive to eventually connect to the regional trail. Bike trail was added on the section of Sunset Drive between Shoreline Drive and the regional bike trail during street reconstruction in 2007.

PEDESTRIAN

The city has sidewalks in the commercial center. It is recommended that the City continue the sidewalk system in high traffic areas that currently lack sidewalks. Priority should be given to extending sidewalks in the City's commercial areas. Sidewalks and bike paths should be integrated and connected to the regional bike trail which will serve as the major east west transportation spine for the community.

AIRSPACE PROTECTION

There are no existing or planned aviation facilities, or other related facilities, located within Spring Park. The City is not within the airport influence area of any regional airports. The City is generally served by the Minneapolis-St. Paul International Airport (MSP). However; a number of sea plane bases are located on Lake Minnetonka in close proximity to Spring Park. Plane operations at low altitudes are an on-going concern.

The City recognizes its responsibility to include airspace protection in its comprehensive plan. The protection is for potential hazards to air navigation including electronic interference. Airspace protection should be included in local codes/ordinances to control height of structures, especially when conditional use permits would apply. Land use regulations should also include requirements for notification to the FAA, as defined under code of federal regulations CFR - Part 77, using the FAA Form 7460-1 "Notice of Proposed Construction or Alteration".

The City of Spring Park has taken the necessary steps to protect navigable air space. All municipalities must protect air space from potential electric interference and obstacles to air navigation. The Zoning Ordinance limits heights of structures within the City to 40 feet.

Trails

City of Spring Park

Trail Type

- Existing Sidewalk
- Existing Trail
- Proposed Trail
- Dakota Regional Trail Corridor
- Lakes

Prepared: November 28, 2007

Feet

500 250 0 500 1,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

INTRODUCTION

In order to enhance the quality of life within a community, it is fundamentally important to provide adequate community facilities for residents. The commonly provided facilities are parks and open space, administrative offices, and public utilities. As a mature, fully developed community, Spring Park's public facilities and utility infrastructure are in place.

SANITARY SEWER PLAN

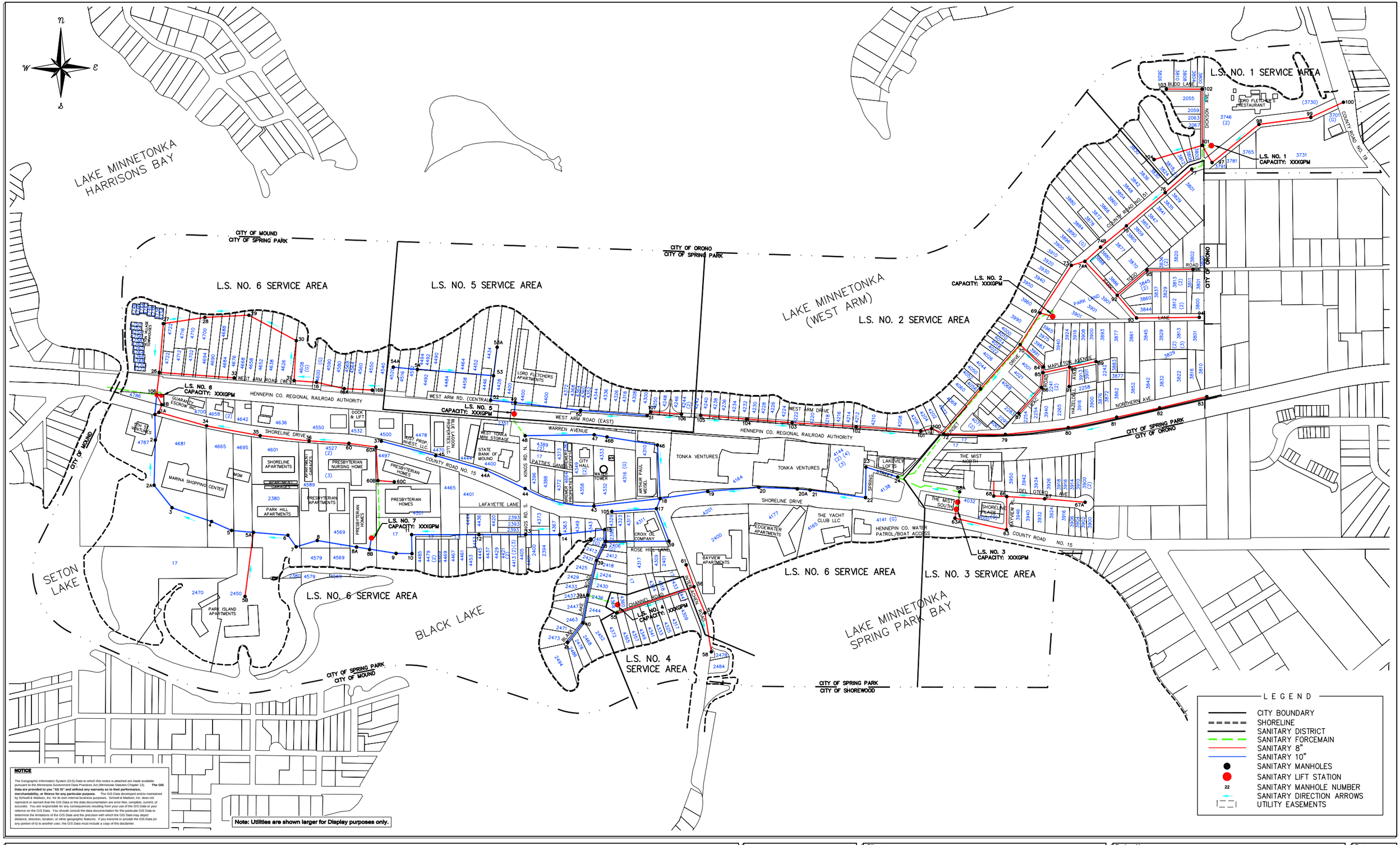
Spring Park receives sanitary sewer interceptor and waste treatment services from the Metropolitan Waste Water System through the City of Mound. The Metropolitan Council has prepared the following forecasts for waste water from Spring Park through the year 2030. Based on anticipated future land uses and sewer population forecasts, the City concurs with Metropolitan Council's forecasted range of flows.

Sewer and Water Projections (2010-2030)			
Year	**2010**	**2020**	**2030**
Sewered Population	1,850	2,000	2,100
Sewered Households	1,000	1,080	1,130
Sewered Employment	1,330	1,690	1,800
Average Annual Wastewater Flow (MGD)	.32	.34	.34
Allowable Peak Hourly Flow (MGD)	1.15	1.22	1.22
Source: Metropolitan Council			

The City is completely sewered. There are no on-site or private sewer systems in the City. The City requires that all new development be connected to municipal sewer.

Inflow and infiltration (I/I) into the sanitary sewer system has been a reoccurring issue for the City. In response to this issue, the City has implemented the following efforts:

1. Sump Pump Ordinance Chapter 34, Section 34-113 prohibits directing ground water or storm water drainage into the sanitary sewer system. The City enforces this Ordinance through periodic visual inspections.
2. The City has an ongoing manhole rehabilitation program. Visual inspections of all manholes are conducted annually with the flushing of the water system. If leaks are detected, the man holes are repaired.



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Note: Utilities are shown larger for Display purposes only.

0 250 500 1000
SCALE IN FEET

MFRA
Engineering • Planning • Surveying
McCombs Frank Roos Associates, Inc.
14800 28th Avenue North, Suite 140
Plymouth • Minnesota • 55447
phone: 763/478-6700
fax: 763/478-6832
website: www.mfra.com

Client:
SPRING PARK On Lake Minnetonka
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9051

Project Name: SPRING PARK UTILITY MAPPING SYSTEM

Date: 01/09/08

Sheet Title: SANITARY SEWER SYSTEM (COVER)

Sheet: 1 of 1

3. The City aggressively addresses I/I problem areas through a maintenance program that includes sanitary sewer rehabilitation and storm sewer installation with street improvement projects. The City also undertakes regular maintenance of its lift stations to reduce I/I.

4. In 2001, the City initiated an I/I abatement program which continues to be implemented in 2008. This program includes televising and slip lining the sanitary sewer, inspecting, and repairing or replacing manholes, conducting a property survey for illegal foundation drain tiles, and inspecting all roof drains on structures with flat roofs.

The City also intends to inform and educate its residents about I/I reduction through its newsletter which included graphics that illustrate proper grading and drainage around homes, and proper sump pump discharge techniques.

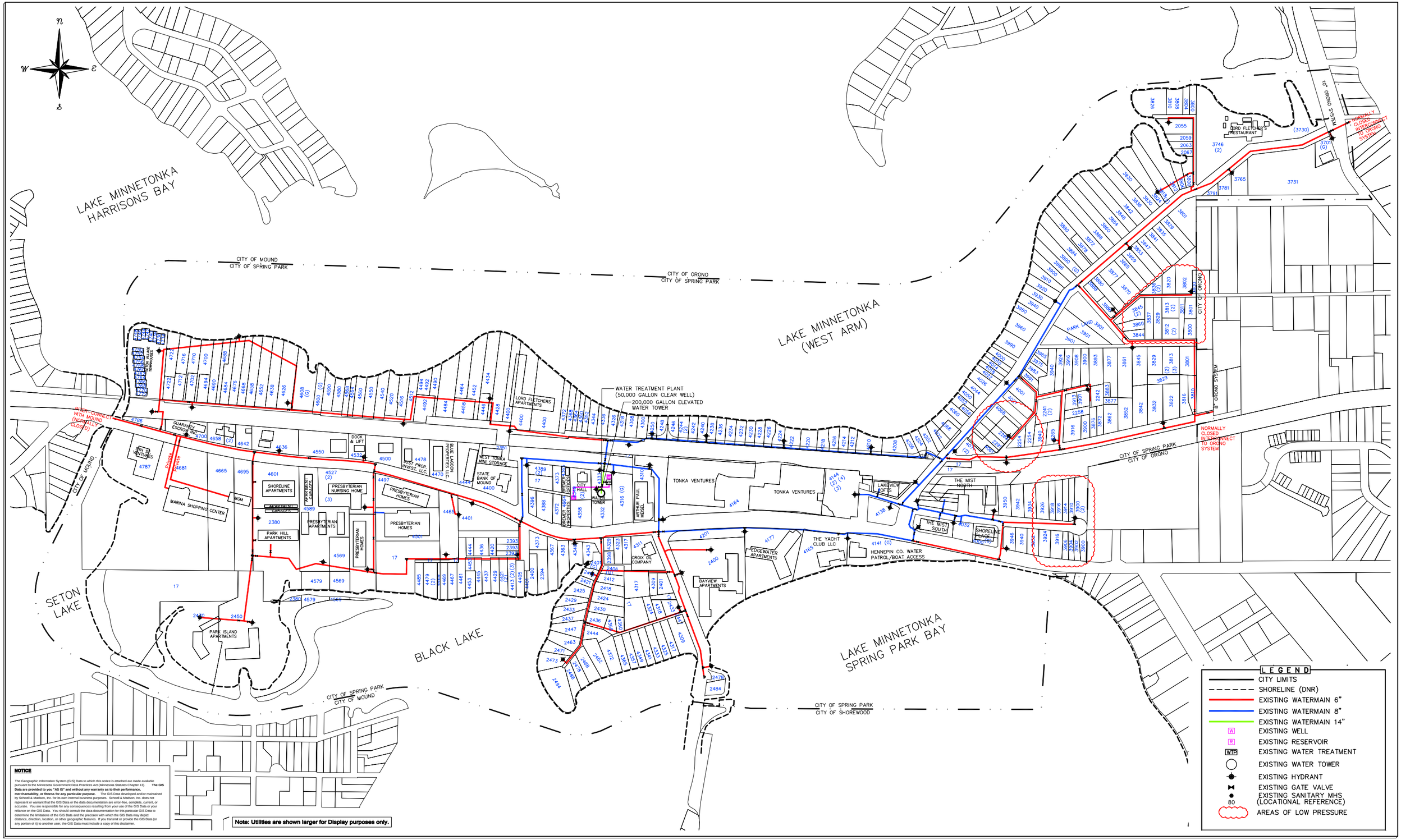
WATER SUPPLY

The City's water distribution system consists of one water tower, three wells and approximately 5.64 miles of water main. The water system has interconnects to the Orono and Mound systems. The city has identified areas of low pressure largely due to lack of looped water service mains. The City has corrected problems where feasible in conjunction with other projects. The remaining low pressure areas will be corrected with future development.

SURFACE WATER MANAGEMENT

In 2009, Spring Park adopted its Local Water Management Plan. The plan was formally approved by the Minnehaha Creek Watershed District. This Plan serves as a local guide for addressing storm water issues pertaining to water quality, water quantity, flood protection, and storm water system improvements or redevelopment efforts within Spring Park.

The MPCA has identified West Arm area of Lake Minnetonka as impaired water. The impaired classification is based on nutrient/eutrophication, biological indicators criteria. The first year listing is 2008. The schedule for a Total Maximum Daily Load (TMDL) report as established by the MPCA is to start in 2009 and complete in 2013. The final report will establish the TMDL discharge allowed for each community having storm drainage to West Arm.



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LEGEND

- CITY LIMITS
- SHORELINE (DNR)
- EXISTING WATERMAIN 6"
- EXISTING WATERMAIN 8"
- EXISTING WATERMAIN 14"
- W — EXISTING WELL
- R — EXISTING RESERVOIR
- WTP — EXISTING WATER TREATMENT
- EXISTING WATER TOWER
- EXISTING HYDRANT
- EXISTING GATE VALVE
- 80 — EXISTING SANITARY MHS (LOCATIONAL REFERENCE)
- AREAS OF LOW PRESSURE

0 250 500 1000
SCALE IN FEET

MFRA
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McCombs Frank Rees Associates, Inc.
14800 28th Avenue North, Suite 140
Plymouth - Minnesota - 55447
phone: 763/475-0010
fax: 763/475-0030
website: www.mfra.com

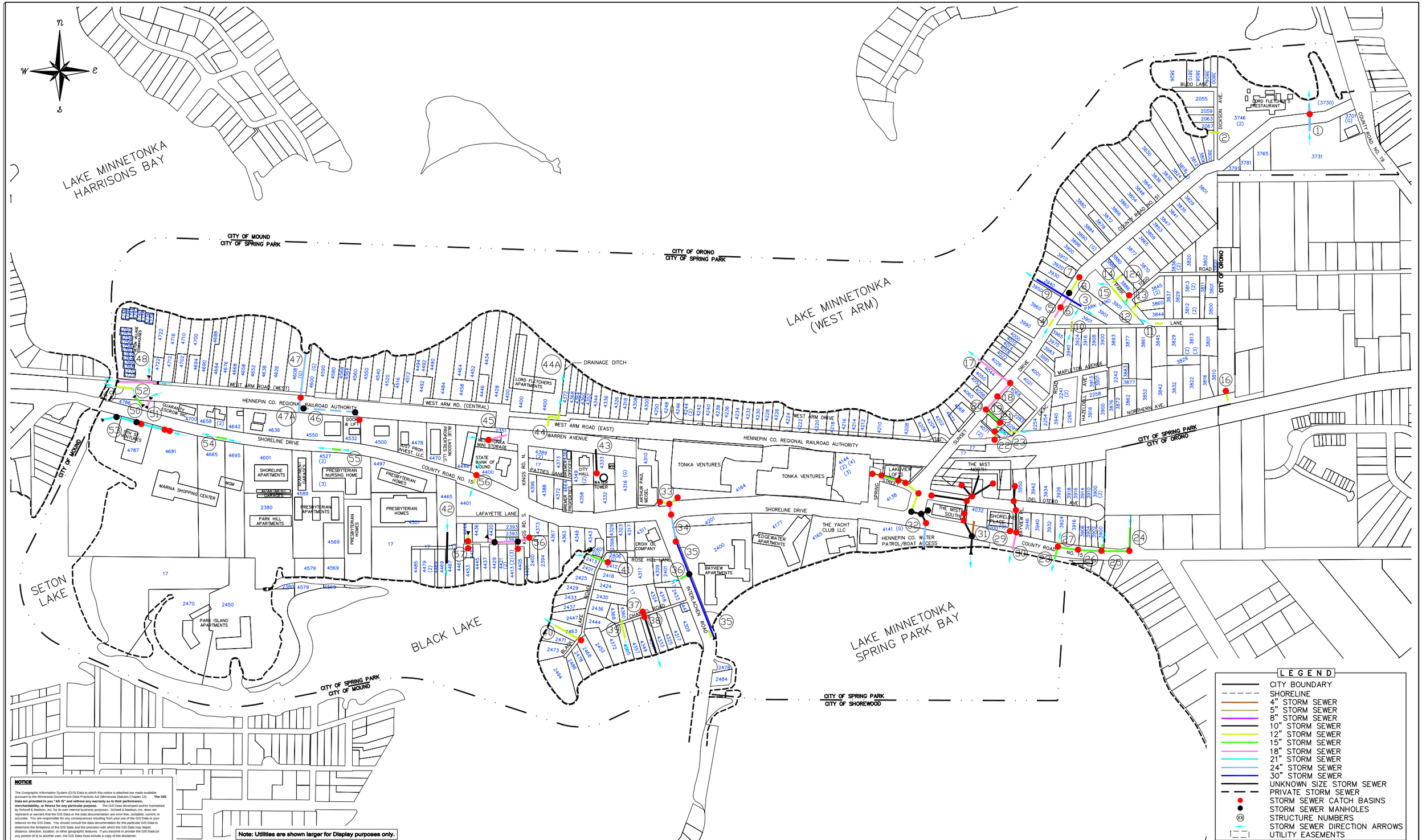
Client:
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9061

Project Name: **SPRING PARK UTILITY MAPPING SYSTEM**

Date: **01/09/08**

Sheet Title: **WATERMAIN SYSTEM (COVER)**

Sheet: **1** of **1**



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LEGEND

- CITY BOUNDARY
- SHORELINE
- 4" STORM SEWER
- 5" STORM SEWER
- 8" STORM SEWER
- 10" STORM SEWER
- 12" STORM SEWER
- 15" STORM SEWER
- 18" STORM SEWER
- 21" STORM SEWER
- 24" STORM SEWER
- 30" STORM SEWER
- UNKNOWN SIZE STORM SEWER
- PRIVATE STORM SEWER
- STORM SEWER CATCH BASINS
- STORM SEWER MANHOLES
- (XX) STRUCTURE NUMBERS
- STORM SEWER DIRECTION ARROWS
- UTILITY EASEMENTS

0 250 500 1000
SCALE IN FEET

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Client:
SPRING PARK On Lake Minnetonka
CITY OF SPRING PARK
4349 Warren Ave.
Spring Park, MN 55384-9711
(952) 471-9051

Project Name: **SPRING PARK UTILITY MAPPING SYSTEM**

Date: 01/09/08

Sheet Title: **STORM SEWER SYSTEM (COVER)**

Sheet: 1 of 1

The TMDL Report will establish drainage requirements for the communities contributing to the pollutant loading into West Arm. The City Spring Park will need to study the TMDL report and implement a plan to reduce the loadings in accordance with the requirements contained in the report. The City will coordinate this work through the Minnehaha Creek Watershed District.

The City of Spring Park submitted a revised MS4 permit in June 2006. This submittal was in response to new permit application requirements established by the MPCA. The permit application included BMPs in the format required by the MPCA and a City prepared Storm Water Pollution Prevention Plan (SWPPP).

The MPCA requires preparation of an annual report tracking compliance with the BMPs identified in the permit or progress towards compliance. The annual report is submitted, for the previous year in March. The City prepares the annual report using a MPCA prepared reporting form.

The Minnehaha Creek Watershed District (MCWSD) has permitting jurisdiction of all construction projects, in the City of Spring Park. Spring Park and the MCWSD both issue permits for construction. The City of Spring Park has adopted the MCWSD's rules and regulations. A city issued building permit requires both City and MCWSD approval of the projects stormwater management components.

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

PUBLIC BUILDINGS / FACILITIES

Spring Park operates one public building, City Hall. The City will continue to monitor public service needs provided by City Hall and make improvements or expansions as appropriate. The historic city hall building was last remodeled in 1960s. The City will also seek to promote high speed internet and other communication technologies within the City to increase the City's attractiveness as a place to live and work.

The City has invested in beautification efforts to improve the aesthetic appearance of Sunset and Shoreline Drives. These efforts will continue to further promote a positive commercial streetscape and enhance the local shopping environment.

PARKS AND RECREATION

Parks and Facilities

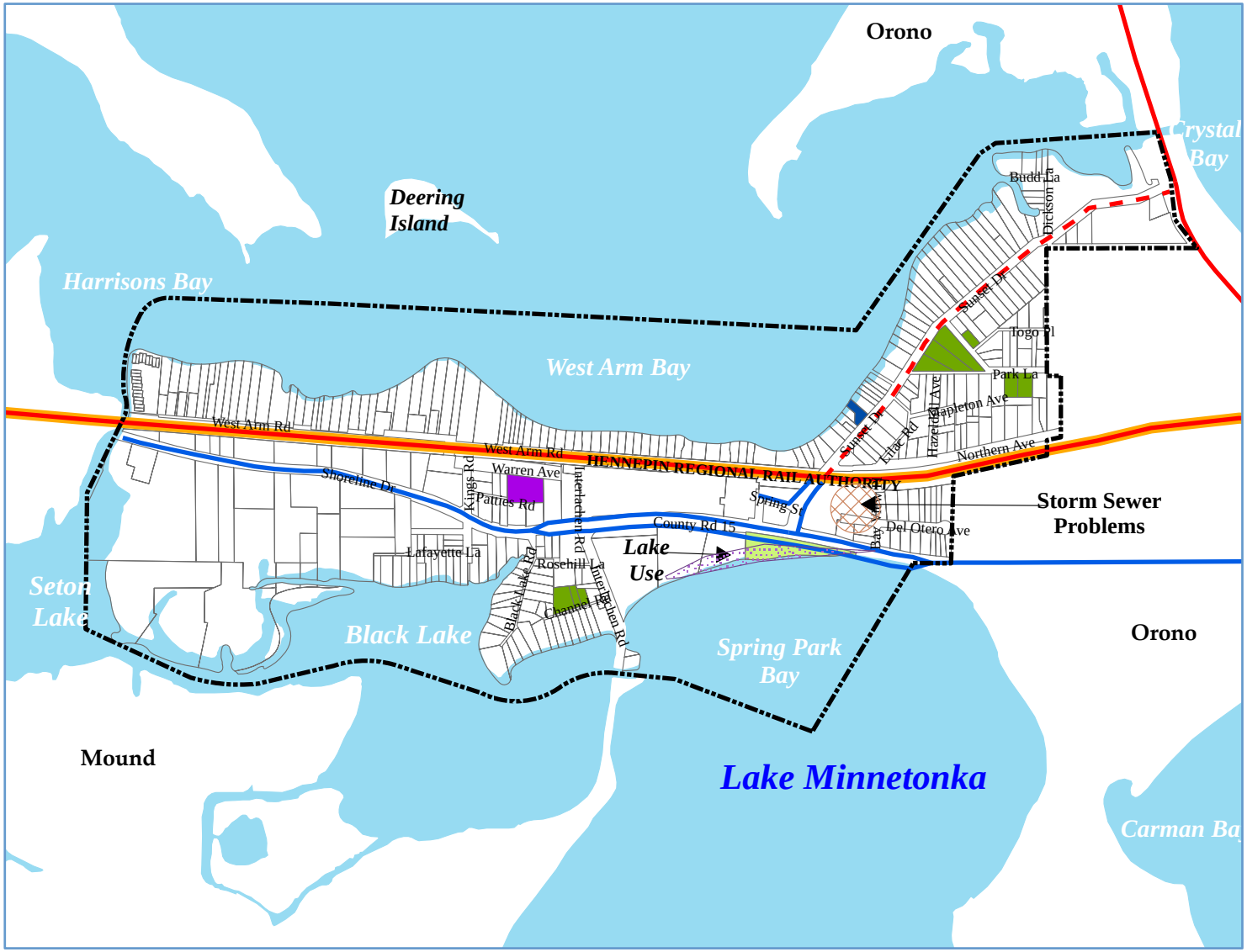
Spring Park currently contains slightly over six areas of city owned park property. Three areas, Thor Thompson Park, Wilkes Park and the municipal tennis courts, are classified as active neighborhood recreation areas. It appears that Wilkes Park is underutilized. The City will conduct a planning initiative with local residents to identify ways the functionality of the park could be improved to meet local recreational needs. The City will also explore ways to integrate existing park facilities into the regional trail being constructed in the old Dakota Rail corridor.

Regional Facilities

There are no regional park facilities in Spring Park. A regional bike trail is being constructed in the old Dakota Rail corridor and will connect Minnetrista on the west with Wayzata on the east. A trail head facility is desired to be constructed in Spring Park that will contain bike racks, benches, lighting, maps, as well as a limited number of parking spaces. The City will continue to work with Hennepin County and Three Rivers Park District to insure the trail head provides sufficient parking for trail use and to limit the impact trail users may have on the limited parking available in Spring Park.

Hennepin County operates a public boat launch at the intersection of Shoreline and Sunset Drives. The site contains a limited amount of parking. High demand for ramp parking from both boat owners and their guests causes many facility users to park in commercial and residential areas of the City. The City has advocated for additional parking spaces at the trail head to help accommodate parking demand generated by the boat launch. The City will continue to encourage the County to adequately address parking supply created by demand generated by County facilities. The City has also identified the boat launch area as an area for aesthetic improvement.

Community Facilities



City of Spring Park

- Post Office
- City Hall
- City Parks
- County Boat Launch
- Existing Sidewalk
- Existing Trail
- Proposed Trail
- Dakota Regional Trail Corridor
- Lakes

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park, Minnesota Department of Natural Resources, & Northwest Associated Consultants, Inc.
Prepared February 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

INTRODUCTION

Administration and implementation of the Comprehensive Plan and related supportive ordinances are equally as important as the development of the plan itself. Only through the proper coordination of the Comprehensive Plan with the City's related development tools can the City fulfill its development and redevelopment vision and goals.

BUDGETING AND FINANCE

The Comprehensive Plan recognizes Spring Park as a fully developed, mature community. The plan recommendations emphasize the need for continuing land use maintenance, redevelopment and provision of quality public services. Under these circumstances, concerns have been expressed with regard to expanding future public expenditures. In response to this issue, the City will continue to implement the following strategies:

1. Continue the City's proactive public facilities maintenance programs to avoid significant disrepair or breakdown.

2. Maintain a five year Capital Improvement Plan that identifies needed public capital improvements, assigns costs and schedules implementation based on project priority and funding availability. Appendix A is the City's Capital Improvements Program.

3. Continue to pursue intergovernmental cooperation for sharing public services and facilities to avoid duplication and economize on City investments.

4. Promote the maintenance, modernization and expansion of local land uses to preserve and expand the City's tax base and revenues.

5. Pursue available county, state and federal grants and aids as appropriate to facilitate community improvements and programs.

6. Utilize cost effective financing programs when authorized to encourage growth and development projects.

7. The City will manage its budgets and spending to maintain a healthy reserve fund to be able to respond to unexpected expenses or emergency improvement projects.

COMMUNITY SERVICES

Through good communication with the public and responsiveness to residents' needs, the City administration has been cited as a community strength. High quality resident service will continue to be the standard for City operations in the future.

The City continues to take a proactive approach to insure a high level of community services in a fiscally responsible manner. These efforts include:

1. Regular scheduled inspections of streets, utilities, parks and facilities to identify areas of disrepair, or facility replacement to insure that City maintenance or capital improvement funds are properly planned and utilized.

2. Utilize available new technologies to assist in delivery of services in an efficient and cost effective manner.

3. Maintain good communication with City residents and businesses through direct contact, open meetings, television, newsletters, media releases, City website, and project bulletins.

4. Periodically utilize community surveys to solicit resident perceptions, issues, or comments on community concerns and/or operations.

ORDINANCES / CODES / GUIDELINES

As a means of implementing the stated land use goals for Spring Park, the City will investigate the following potential changes to City ordinances, codes and guidelines:

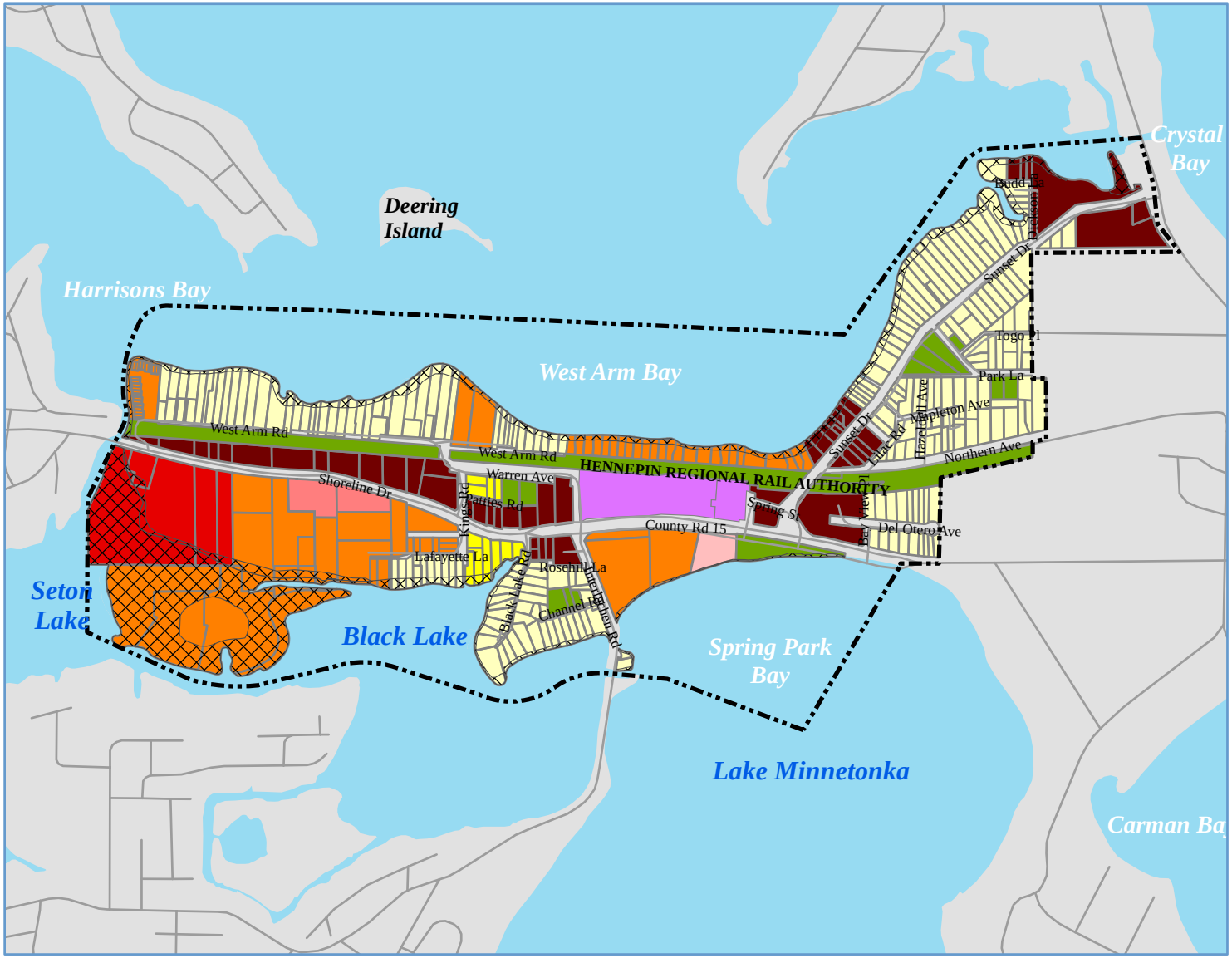
1. Zoning Ordinance.

    a. Following the adoption of the 2030 Comprehensive Plan, the City will update the City's zoning map to reflect the City's Land Use Plan (see Proposed Zoning Map on a following page).

    b. Re-examine the R-1, Single Family and Two Family Zoning District to confirm if the current performance standards related to lot area, setbacks, corner lot setbacks, and impervious surface are appropriate for the City's long term residential goals.

    c. Within the non-conforming section of the Zoning Ordinance, outline the City's intentions for improvements and/or expansions of existing non-conforming dwellings.

Proposed Zoning



City of Spring Park

Zoning Districts

- R-1 Single and Two Family Residential
- R-2 Medium Density Residential
- R-3 High Density Residential
- C-1 General Commercial
- C-2 Shopping Center
- C-3 Health Care Facility
- C-4 Office Commercial
- M Manufacturing
- P Public/Semi-Public
- Floodplain
- Boundary

Feet

0 262.5 525 1,050 1,575

Source:
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.

d. Draft new regulations to define the limits of outdoor storage within the City's commercial and industrial areas as well as its residential neighborhoods.

e. Draft zoning language that addresses storm water and drainage concerns related to the expansion of single family and two family housing. Said language may include:

- Submission of a grading, drainage, and erosion control plan for all single family and two family projects that increase the impervious surface on a lot.
- Require the establishment of a landscaped shoreland buffer strip to filter stormwater to the lake with any home expansion of site alteration.

f. Examine the City's high density residential and commercial zoning districts to clearly define the City's expectations for building height, lot coverage, setbacks, and parking to guide future redevelopment projects.

2. Apply the Spring Park Commercial Design Guidelines to all commercial and mixed use development, redevelopment, and improvements. The primary purpose of these guidelines is to:

a. Reinforce the community's vision for development.
b. Foster high quality architecture and site design.
c. Encourage creativity in accomplishing design goals.
d. Protect public and private investment in buildings and infrastructure.

Application of the Commercial Design Guidelines shall integrate with the City's development review process and Spring Park's zoning regulations.

3. Low Impact Design. The City wishes to investigate opportunities with new development or redevelopment to implement low impact design (LID) technologies into site and building plans. Low impact design offers opportunities for environmentally friendly design and reduces demands on public infrastructure.

HOUSING

As a means of maintaining the City's housing stock, the City will investigate the following implementation strategies:

1. Continue the City's high density zoning practice of basing development density on the site's capacity to meet setbacks, parking, impervious surface, and building height to give property owners incentive to redevelop or expand.

2. Examine home improvement programs through Metro HRA, Hennepin County, the Greater Metropolitan Housing Corporation, or Minnesota Housing Finance Agency to identify finance programs that may assist Spring Park property owners in housing improvement loans.

3. The City has utilized tax increment financing (TIF) to assist in housing redevelopment projects that involved the elimination of blighted properties. The use of TIF funding will be evaluated on a project-by-project basis and weighed against the goals of the City's Comprehensive Plan.

INTERGOVERNMENTAL COOPERATION

The City currently contracts police services with the City of Orono and fire protection with the City of Mound. The City will continue to explore opportunities for shared services where it provides a high level of community service to Spring Park residents in a cost effective manner.

The City will continue to pursue the cooperation of Hennepin County in developing strategies for shared facilities (i.e., trailhead planning) that will produce benefits for both the County and City facilities.

SOLAR ACCESS PROTECTION

Ensuring that all properties have equal access to sunlight is a priority, not only for potential solar energy systems, but for the protection of property and aesthetic values as well. Due to the City's small lots and limited land area, solar access regulations must be developed for Spring Park in a manner that recognizes the non-conforming conditions of many of the homes. Also, solar access will continue to be a concern with new redevelopment projects with regard to building height and setbacks. The City is examining the City regulations and will establish solar access protections.

appendices

SPRING PARK

city of spring park

comprehensive plan

CITY OF SPRING PARK

2008 - 2020 CAPITAL IMPROVEMENT PLAN

3/26/2009

Priority	Proposed Capital Improvement or Acquisition	Department	Year when constructionwill start or acquisitions will occur	Total Estimated Cost	Funding Source						Comments
					General Fund	PIRF- Public Improvement Revolving Fund	Water Fund	Sewer Fund	Bond	Special Assessment	
	Rebuild L.S. #1 Lord Fletcher Restaurant (Incl. Generator)	Sewer	2008	$300,000.00		$150,000.00		$150,000.00			**TOP PRIORITY** 1963 construction - mid 1980 rehab
	Control Panel & Generator (Water Plant) & Relocate Water Tower Control Power	Water	2009	$440,000.00			220,000.00		$220,000.00		**TOP PRIORITY** Age of Filter Plant 1980's (orginally 1960). Project includes 150 KW generator
	Channel Road reconstruction and storm water drainage improvements	Channel Rd - street, water & sewer	2009	$215,000.00		$70,000.00	$40,000.00	$70,000.00		$35,000.00	
	Street Projects -See attached	Streets	2010-2020	$3,300,000.00		$330,000.00	$330,000.00	$330,000.00	$1,650,000.00	$660,000.00	Annually $3-400,000.00
	Sormwater projects	Stormwater Fund	2010-2018	$200,000.00					$200,000.00		Stormwater Utility Fee
	Rebuild L.S. #2 Thor Thompson (Incl. Generator)	Sewer	2011	$300,000.00		$150,000.00		$150,000.00			
	Thor Thompson Park Playground Upgrade	Parks	2010	$75,000.00	$75,000.00						$30,000 is the cost of a basic playground system
	Rebuild L.S. #4 Channel Rd	Sewer	2011	$300,000.00		$150,000.00		$150,000.00			2009 Project if included with Channel Road St. Project
	Storm water drainage improvements-Thor/Sunset	Storm Sewer	2011	$150,000.00	$40,000.00	$110,000.00		$150,000.00			Correct water ponding in park and ballfield
	Street Signs (Replace)	Streets	2011	$10,000.00	$10,000.00						If needed-evaluate condition
	Rebuild L.S. #5 Lord Fletcher Apts	Sewer	2012	$300,000.00		$150,000.00		$150,000.00			
	Sunset Drive - Sidewalks - Northern to Lord Fletchers	Streets	2012	$100,000.00					$50,000.00	$50,000.00	option-move power poles and level/widen/mark shoulder for walking/biking
	Street Lights 10/yr @ $3,000 ea. Shoreline Drive	Streets	2009-2012	$90,000.00	$90,000.00						
	Public Works Storage Garage	Streets/Parks	2015	$100,000.00			$20,000.00	$20,000.00	$60,000.00		
	Radio Read Meters	Water & Sewer	2012	$40,000.00			$20,000.00				
	City Hall Remodel Phase #1 (Exterior)	Building Grounds	2015	$400,000.00		$40,000.00			$360,000.00		
	City Hall remodal Phase #2;Driveway improvemnts	Building Grounds	2015	$240,000.00		$20,000.00			$220,000.00		
	Replace water meters	Water	2016	$50,000.00			$50,000.00				1994/1995 last change out of meters
	GRAND TOTAL			**$5,780,000.00**	**$215,000.00**	**$1,110,000.00**	**$590,000.00**	**$1,150,000.00**	**$2,120,000.00**	**$745,000.00**	

			Year when		Funding Source						

Priority	Proposed Capital Improvement or Acquisition	Department	constructionwill start or acquisitions will occur	Total Estimated Cost	General Fund	PIRF- Public Improvement Revolving Fund	Water Fund	Sewer Fund	Bond	Special Assessment	Comments / Rating	
	Park Lane			$242,315.00							54	
	Del Otero (east end)			$189,480.00							55	
	Black Lake Road			$237,030.00							56	
	Northern Avenue			$426,630.00							58	
	Dickson Avenue Extension			$23,460.00							61	
	Mapleton Avenue			$144,112.00							62	
	West Arm Central			$74,183.00							62	
	West Arm Rd West			$226,402.00							62	
	Channel Road										62 Listed Above	
	Hazeldell Avenue			$74,161.00							65	
	Interlachen			$114,753.00							65	
	Dickson Avenue			$93,565.00							70	
	Lilac			$100,554.00							71	
	Togo Rd			$182,246.00							71	
	Spring Street			$100,453.00							74	
	Warren Avenue			$262,870.00							76	
	Kings Rd (North of Shoreline)			$89,181.00							78	
	Rose Hill			$59,878.00							80	
	Patties Lane			$28,356.00							81	
	West Arm Rd East			$226,402.00							82	
	Lafayette Lane			$129,647.00							87	
	Kings Rd (south of Shoreline)			$45,410.00							90	
	Budd Lane			$41,817.00							91	
	Bayview Place			$54,206.00							92	
	TOTAL STREETS ONLY			**$3,312,396.00**								

OTHER MAJOR EXPENDITURES - NOT CAPITAL ITEMS

Priority	Proposed Capital Improvement or Acquisition	Department	Year when constructionwill start or acquisitions will occur	Total Estimated Cost	Funding Source						Comments	
					General Fund	PIRF	Water Fund	Sewer Fund	Bond	Special Assessment		
	Zoning Codification	Administration	2009	$3,000.00	$3,000.00							
	Comp. Plan Update	Administration	2009	$20,000.00	$20,000.00							
	Banner/Christmas Decorations (Replace)	Building Grounds	2011	$5,000.00	$5,000.00						budget yearly for replacement (keep under $5000 threshold)	

PENDING PROJECTS - NOT LISTED IN CAPITAL IMPROVEMENT PLAN

Water Supply Plan

Spring Park, Minnesota

May 2009

SP
SPRING PARK
On Lake Minnetonka

MFRA

DEPARTMENT OF NATURAL RESOURCES - DIVISION OF WATERS and METROPOLITAN COUNCIL
WATER SUPPLY PLANS

These guidelines are divided into four parts. The first three parts, Water Supply System Description and Evaluation, Emergency Response Procedures and Water Conservation Planning apply statewide. Part IV, relates to comprehensive plan requirements that apply only to communities in the Seven-County Twin Cities Metropolitan Area. If you have questions regarding water supply plans, please call (651) 259-5703 or (651) 259-5647 or e-mail your question to wateruse@dnr.state.mn.us. Metro Communities can also direct questions to the Metropolitan Council at watersupply@metc.state.mn.us or (651) 602-1066.

DNR Water Appropriation Permit Number(s)	1981-6062
Name of Water Supplier	City of Spring Park
Address	4349 Warren Avenue
Contact Person	DJ Goman
Title	Utility Superintendent
Phone Number	952-471-9051
E-Mail Address	dj6590@mchsi.com

PART I. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and supplies. Information in Part I, can be used in the development of Emergency Response Procedures and Conservation Plans.

A. ANALYSIS OF WATER DEMAND.

Fill in Table 1 for the past 10 years water demand. If your customer categories are different than the ones listed in Table 1, please note the changes below.

TABLE 1 Historic Water Demand

Year	Total Population	Population Served	Total Connections	Residential Water Sold (MG)	C/I/I Water Sold (MG)	Wholesale Deliveries (MG)	Total Water Sold (MG)	Total Water Pumped (MG)	Percent Unmetered/ Unaccounted	Average Demand (MGD)	Maximum Demand (MGD)	Residential gallons/ capita/day	Total gallons/ capita/day
2008	1926	1926	394			3.3	72.8	77.5	6.06	0.212	.640		110.24
2007	1800	1800	345	45.9	25.3		71.2	77.5	8.13	0.212	.353	69.86	117.96
2006	1700	1700	314	42.0	26.7		68.7	74.0	7.16	0.203	.387	67.69	119.26
2005	1659	1659	331	42.3	26.2	7.5	76.0	83.1	8.54	0.222	.777	69.86	133.77
2004	1720	1720	363	42.9	23.6		66.4	74.0	10.27	0.203	.391	68.33	117.87
2003	1720	1720	314	45.1	24.9		70.0	85.0	17.65	0.233	.337	71.83	135.39
2002	1720	1720	312	48.0	23.9		71.9	87.0	17.36	0.238	.361	76.46	138.58
2001	1717	1717	312	50.1	23.7		73.8	60.0*	0	0.164	.336	79.94	95.74
2000	1717	1717	311	52.6	28.8		81.4	81.0**	0	0.222	N/A	83.93	129.25
1999	1826	1826	304	51.0	25.9	24.7	101.6	110.1	7.72	0.315	N/A	76.52	172.55

MG – Million Gallons **MGD** – Million Gallons per Day **C/I/I-** Commercial, Industrial, Institutional

Residential. Water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens.

Institutional. Hospitals, nursing homes, day care centers, and other facilities that use water for essential domestic requirements. This includes public facilities and public metered uses. You may want to maintain separate institutional water use records for emergency planning and allocation purposes.

Commercial. Water used by motels, hotels, restaurants, office buildings, commercial facilities, both civilian and military.

Industrial. Water used for thermoelectric power (electric utility generation) and other industrial uses such as steel, chemical and allied products, food processing, paper and allied products, mining, and petroleum refining.

Wholesale Deliveries. Bulk water sales to other public water suppliers.

Unaccounted. Unaccounted for water is the volume of water withdrawn from all sources minus the volume sold.

Residential Gallons per Capita per Day = total residential sales in gallons/population served/365 days **Total Gallons per Capita per Day** = total water withdrawals/population served/365 days

NOTE: Non-essential water uses defined by Minnesota Statutes 103G.291, include lawn sprinkling, vehicle washing, golf course and park irrigation and other non-essential uses. Some of the above categories also include non-essential uses of water.

*City of Orono supplied water from January through April.
**City of Orono supplied water in June

Water Use Trends. Discuss factors that influence trends in water demand (i.e. growth, weather, industry, conservation). If appropriate, include a discussion of other factors that affect daily water use, such as use by non-resident commuter employees or large water consuming industry.
The City of Spring Park is primarily a residential community. Increases in demand vary with population growth and seasonal demand in the summer months. There are currently no industrial/commercial users drawing a significantly large volume of water.

TABLE 2 Large Volume Users - List the top 10 largest users.

Customer	Gallons per year	% of total annual use
Presbyterian Homes	19,192,000	24.76
Tonka Ventures Building	7,743,000	10.0
Center Development	4,815,000	6.21
Park Island Apartments	4,330,000	5.59
Lord Fletchers	3,648,000	4.71
Paradise & Associates	3,465,000	4.47
Lord Fletchers Apartments	2,955,000	3.81
Minnetonka Edgewater	2,354,000	3.04
5th Street Ventures	1,493,000	1.93
Lakeview Lofts	674,000	0.87

B. TREATMENT AND STORAGE CAPACITY.

TABLE 3(A) Water Treatment

Water Treatment Plant Capacity	1,000,000	Gallons per day
Describe the treatment process used (i.e., softening, chlorination, fluoridation, Fe/Mn removal, reverse osmosis, coagulation, sedimentation, filtration, others). Also, describe the annual amount and method of disposal of treatment residuals, if any.		
Removal treatment for iron and manganese. Chlorine added for disinfection, fluoride added as required. Dualator I, 5-cell spray nozzle gravity media filter with pretreatment aeration. Built in 1981 and renovated in 2000. Capable of treating 150 gpm per cell. Filter media includes 12" Anthrafilt on 20" sand with graded support gravels. Backwash is reclaimed and backwash sludge is pumped to sanitary sewer. Annual amount of sludge discharged is not known.		

TABLE 3(B) Storage Capacity - List all storage structures and capacities.

Total Storage Capacity		**Average Day Demand** (average of last 5 years)	
300,000	Gallons	210,400	Gallons per day
Type of Structure	Number of Structures	Gallons	
Elevated Storage	1	200,000	
Ground Storage	1	100,000	
Other:			

C. WATER SOURCES. List all groundwater, surface water and interconnections that supply water to the system. Add or delete lines to the tables as needed.

TABLE 4(A) Total Water Source Capacity for System (excluding emergency connections)

Total Capacity of Sources	1,240	Gallons per minute
Firm Capacity (largest pump out of service)	590	Gallons per minute

TABLE 4(B) Groundwater Sources - Copies of water well records and well maintenance information should be included with the public water supplier's copy of the plan in Attachment . If there are more wells than space provided or multiple well fields, please use the List of Wells template (see Resources) and include as Attachment .

Well # or name	Unique Well Number	Year Installed	Well & Casing Depth (ft)	Well Diameter (in)	Capacity (GPM)	Geologic Unit	Status
1	224642	1964	418	16	320	Franconia/ Ironton Galesville	Active
2	224643	1964	341	16/8	270	Jordan	Active
3	165595	1980	660	24/16/10	650	Mount Simon	Active

Status: Active use, Emergency, Standby, Seasonal, Peak use, etc. GPM – Gallons per Minute
Geologic Unit: Name of formation(s), which supplies water to the well

TABLE 4(C) Surface Water Sources

Intake ID	Resource name	Capacity (GPM/MGD)
N/A		

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 4(D) Wholesale or Retail Interconnections - List interconnections with neighboring suppliers that are used to supply water on a **regular basis** either wholesale or retail.

Water Supply System	Capacity (GPM/MGD)	Wholesale or retail
N/A		

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 4(E) Emergency Interconnections - List interconnections with neighboring suppliers or private sources that can be used to supply water on an emergency or occasional basis. Suppliers that serve less than 3,300 people can leave this section blank, but must provide this information in Section II C.

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use
City of Orono	1300 GPM	
City of Mound	4050 GPM	

GPM – Gallons per Minute MGD – Million Gallons per Day

D. DEMAND PROJECTIONS.

TABLE 5 Ten Year Demand Projections

Year	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2009	1934	0.261	0.626	95.27
2010	1942	0.262	0.629	95.63
2011	1950	0.263	0.631	96.00
2012	1958	0.264	0.633	96.36
2013	1966	0.265	0.636	96.73
2014	1974	0.266	0.638	97.09
2015	1982	0.267	0.641	97.46
2016	1990	0.269	0.646	98.19
2017	1998	0.270	0.648	98.55
2018	2006	0.271	0.650	98.92

MGD – Million Gallons per Day MGY – Million Gallons per Year

Projection Method. Describe how projections were made, (assumptions for per capita, per household, per acre or other methods used).

Projections were made based on a straight-line growth rate from the 2008 population of 1926 and projected population of 2100 based on the year 2030 forecast by Metropolitan Council and Minnesota State Demographer. The demand projections were calculated from the projected populations using a per capita demand of 135 gpcd, based on the highest gpcd over the past 10 years, not including years when water was supplied to the City of Orono. A peaking factor of 2.4 was used to calculate the maximum day demand.

E. RESOURCE SUSTAINABILITY

Sustainable water use: use of water to provide for the needs of society, now and in the future, without unacceptable social, economic, or environmental consequences.

Monitoring. Records of water levels should be maintained for all production wells and source water reservoirs/basins. Water level readings should be taken monthly for a production well or observation well that is representative of the wells completed in each water source formation. **If water levels are not currently measured each year, a monitoring plan that includes a schedule for water level readings must be submitted as Attachment .**

TABLE 6 Monitoring Wells - List all wells being measured.

Unique well number	Type of well (production, observation)	Frequency of Measurement (daily, monthly etc.)	Method of Measurement (steel tape, SCADA etc.)
224642	Production	Yearly	Tape
224643	Production	Yearly	Tape
165595	Production	Yearly	Tape

Water Level Data. Summarize water level data including seasonal and long-term trends for each ground and/or surface water source. If water levels are not measured and recorded on a routine basis then provide the static water level (SWL) when the well was constructed and a current water level measurement for each production well. Also include all water level data taken during well and pump maintenance.

Historic drawdowns in the City's oldest active wells have not changed significantly over the past several years. As would be expected, the most significant drawdowns occur during and immediately after the summer months due to irrigation uses.

Well #1: 1964 SWL=58 ft	1992 SWL=65.6 ft	Current SWL=68 ft
Well #2: 1964 SWL=58 ft	1992 SWL=63.6 ft	Current SWL=76 ft
Well #3: 1980 SWL=165 ft		Current SWL=175 ft

Ground Water Level Monitoring – DNR Waters in conjunction with federal and local units of government maintain and measure approximately 750 observation wells around the state. Ground water level data are available online www.dnr.state.mn.us/waters. Information is also available by contacting the Ground Water Level Monitoring Manager, DNR Waters, 500 Lafayette Road, St. Paul, MN 55155-4032 or call (651) 259-5700.

Natural Resource Impacts. Indicate any natural resource features such as calcareous fens, wetlands, trout streams, rivers or surface water basins that are or could be influenced by water withdrawals from municipal production wells. Also indicate if resource protection thresholds have been established and if mitigation measures or management plans have been developed.

There are no calcareous fens or trout streams in the area of Spring Park. The City's water wells draw water from confined aquifers. Natural resource features such as wetlands, rivers or lakes have not historically been affected by the City's use of these aquifers, nor are there any indications of future impacts.

Sustainability. Evaluate the adequacy of the resource to sustain current and projected demands. Describe any modeling conducted to determine impacts of projected demands on the resource.

The Franconia/Ironton Galesville, Jordan, and Mount Simon aquifers appear to be an adequate resource to sustain current and projected demands. Historic drawdowns in the City's oldest active wells have not changed significantly over the past several years.

Source Water Protection Plans. The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.

Date WHP Plan Adopted:	N/A
Date for Next WHP Update:	N/A
SWP Plan:	☐ In Process ☐ Completed ☒ Not Applicable

F. CAPITAL IMPROVEMENT PLAN (CIP)

Adequacy of Water Supply System. Are water supply installations, treatment facilities and distribution systems adequate to sustain current and projected demands? ☒ Yes ☐ No If no, describe any potential capital improvements over the next ten years and state the reasons for the proposed changes (CIP Attachment).
The City has begun the process of developing a CIP which will address future needs within the water system.

Proposed Water Sources. Does your current CIP include the addition of new wells or intakes? ☐ Yes ☒ No If yes, list the number of new installations and projected water demands from each for the next ten years. Plans for new production wells must include the geologic source formation, well location, and proposed pumping capacity.

Water Source Alternatives. If new water sources are being proposed, describe alternative sources that were considered and any possibilities of joint efforts with neighboring communities for development of supplies.

Preventative Maintenance. Long-term preventative programs and measures will help reduce the risk of emergency situations. Identify sections of the system that are prone to failure due to age, materials or other problems. This information should be used to prioritize capital improvements, preventative maintenance, and to determine the types of materials (pipes, valves, couplings, etc.) to have in stock to reduce repair time.
Hydrants are flushed one time per year. The majority of the City's water supply system was installed in 1964 and breaks occur 1 to 3 times per year. As street reconstruction projects occur in the future, the water mains will likely be replaced, and valves will be replaced and/or added to better isolate sections of the water main and hydrants.

PART II. EMERGENCY RESPONSE PROCEDURES

Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failures, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. If your community already has written procedures dealing with water emergencies we recommend that you use these guidelines to review and update existing procedures and water supply protection measures.

Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV – Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan. **Community water suppliers that have completed the Federal Emergency Response Plan and submitted the required certification to the U.S. Environmental Protection Agency have satisfied Part II, Sections A, B, and C of these guidelines and need only provide the information below regarding the emergency response plan and source water protection plan and complete Sections D (Allocation and Demand Reduction Procedures), and E (Enforcement).**

Provide the following information regarding your completed Federal Emergency Response Plan:

Emergency Response Plan	Contact Person	Contact Number
Emergency Response Lead	DJ Goman	952-471-9051
Alternate Emergency Response Lead	City of Orono	952-249-4600
Emergency Response Plan Certification Date	2008	

Operational Contingency Plan. An operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance is recommended for all utilities. Check here ☒ if the utility has an operational contingency plan. At a minimum a contact list for contractors and supplies should be included in a water emergency telephone list.

Communities that have completed Federal Emergency Response Plans should skip to Section D.

EMERGENCY RESPONSE PROCEDURES

A. Emergency Telephone List. A telephone list of emergency contacts must be included as Attachment to the plan (complete template or use your own list). The list should include key utility and community personnel, contacts in adjacent communities, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list on a regular basis (once each year recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Responsibilities and services for each contact should be defined.

B. Current Water Sources and Service Area. Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation, water well and maintenance records should be maintained in a central secured location so that the records are accessible for emergency purposes and preventative maintenance. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. Check here ☐ if these records and maps exist and staff can access the documents in the event of an emergency.

C. Procedure for Augmenting Water Supplies. List all available sources of water that can be used to augment or replace existing sources in an emergency. In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Copies of cooperative agreements should be maintained with your copy of the plan and include in Attachment . Be sure to include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MN Department of Health are required for interconnections and reuse of water.

TABLE 7 (A) Public Water Supply Systems – List interconnections with other public water supply systems that can supply water in an emergency.

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use

GPM – Gallons per Minute MGD – Million Gallons per Day

TABLE 7 (B) - Private Water Sources – List other sources of water available in an emergency.

Name	Capacity (GPM/MGD)	Note any limitations on use

GPM – Gallons per Minute MGD – Million Gallons per Day

D. Allocation and Demand Reduction Procedures. The plan must include procedures to address gradual decreases in water supply as well as emergencies and the sudden loss of water due to line breaks, power failures, sabotage, etc. During periods of limited water supplies public water suppliers are required to allocate water based on the priorities established in Minnesota Statutes 103G.261.

Water Use Priorities (Minnesota Statutes 103G.261)

First Priority. Domestic water supply, excluding industrial and commercial uses of municipal water supply, and use for power production that meets contingency requirements.

NOTE: Domestic use is defined (MN Rules 6115.0630, Subp. 9), as use for general household purposes for human needs such as cooking, cleaning, drinking, washing, and waste disposal, and uses for on-farm livestock watering excluding commercial livestock operations which use more than 10,000 gallons per day or one million gallons per year.

Second Priority. Water uses involving consumption of less than 10,000 gallons per day.

Third Priority. Agricultural irrigation and processing of agricultural products.

Fourth Priority. Power production in excess of the use provided for in the contingency plan under first priority.

Fifth Priority. Uses, other than agricultural irrigation, processing of agricultural products, and power production.

Sixth Priority. Non-essential uses. These uses are defined by Minnesota Statutes 103G.291 as lawn sprinkling, vehicle washing, golf course and park irrigation, and other non-essential uses.

List the statutory water use priorities along with any local priorities (hospitals, nursing homes, etc.) in Table 8. Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Local allocation priorities will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. In Table 8, list the priority ranking, average day demand and demand reduction potential for each customer category (modify customer categories if necessary).

Table 8 Water Use Priorities

Customer Category	Allocation Priority	Average Day Demand (GPD)	Demand Reduction Potential (GPD)
Residential	1	125,770	47,630
Institutional	1	22,660	0
Commercial	2	46,260	18,100
Irrigation	3		
Wholesale	5		
Non-essential	6	17,310	17,310
	TOTALS	212,000	82,860

GPD – Gallons per Day

Demand Reduction Potential. The demand reduction potential for residential use will typically be the base demand during the winter months when water use for non-essential uses such as lawn watering do not occur. The difference between summer and winter demands typically defines the demand reduction that can be achieved by eliminating non-essential uses. In extreme emergency situations lower priority water uses must be restricted or eliminated to protect first priority domestic water requirements. Short-term demand reduction potential should be based on average day demands for customer categories within each priority class.

Triggers for Allocation and Demand Reduction Actions. Triggering levels must be defined for implementing emergency responses, including supply augmentation, demand reduction, and water allocation. Examples of triggers include: water demand >100% of storage, water level in well(s) below a certain elevation, treatment capacity reduced 10% etc. Each trigger should have a quantifiable indicator and actions can have multiple stages such as mild, moderate and severe responses. Check each trigger below that is used for implementing emergency responses and for each trigger indicate the actions to be taken at various levels or stages of severity in Table 9.

- ☒ Water Demand
- ☐ Treatment Capacity
- ☐ Storage Capacity
- ☐ Groundwater Levels
- ☐ Surface Water Flows or Levels
- ☒ Pump, Booster Station or Well Out of Service
- ☒ Governor's Executive Order – Critical Water Deficiency (required by statute)
- ☒ Water Main Break
- ☐ Loss of Production
- ☐ Security Breach
- ☐ Contamination
- ☒ Other (list in Table 9)

Table 9 Demand Reduction Procedures

Condition	Trigger(s)	Actions
Stage 1 (Mild)	Demand equals 80% of firm capacity	Restrict lawn watering
Stage 2 (Moderate)	Demand equals 90% of firm capacity	Suspend lawn watering
Stage 3 (Severe)	Demand equals 100% of firm capacity	Suspend allocation priorities 2 through 6.
Critical Water Deficiency (M.S. 103G.291)	Executive Order by Governor & as provided in above triggers	Stage 1: Restrict lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses Stage 2: Suspend lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses

Note: The potential for water availability problems during the onset of a drought are almost impossible to predict. Significant increases in demand should be balanced with preventative measures to conserve supplies in the event of prolonged drought conditions.

Notification Procedures. List methods that will be used to inform customers regarding conservation requests, water use restrictions, and suspensions. Customers should be aware of emergency procedures and responses that they may need to implement.

Notice shall be provided through the City of Spring Park website, publishment in the local newspaper, and notices handed out door to door.

E. Enforcement. Minnesota Statutes require public water supply authorities to adopt and enforce water conservation restrictions during periods of critical water shortages.

Public Water Supply Appropriation During Deficiency.
Minnesota Statutes 103G.291, Subdivision 1.

Declaration and conservation.
(a) If the governor determines and declares by executive order that there is a critical water deficiency, public water supply authorities appropriating water must adopt and enforce water conservation restrictions within their jurisdiction that are consistent with rules adopted by the commissioner.
(b) The restrictions must limit lawn sprinkling, vehicle washing, golf course and park irrigation, and other nonessential uses, and have appropriate penalties for failure to comply with the restrictions.

An ordinance that has been adopted or a draft ordinance that can be quickly adopted to comply with the critical water deficiency declaration must be included in the plan (include with other ordinances in Attachment 7 for Part III, Item 4). Enforcement responsibilities and penalties for non-compliance should be addressed in the critical water deficiency ordinance.
Sample regulations are available at www.dnr.state.mn.us/waters

Authority to Implement Water Emergency Responses. Emergency responses could be delayed if city council or utility board actions are required. Standing authority for utility or city managers to implement water restrictions can improve response times for dealing with emergencies. Who has authority to implement water use restrictions in an emergency?

☐ Utility Manager ☒ City Manager ☐ City Council or Utility Board
☒ Other (describe): Utility Superintendent

Emergency Preparedness. If city or utility managers do not have standing authority to implement water emergency responses, please indicate any intentions to delegate that authority. Also indicate any other measures that are being considered to reduce delays for implementing emergency responses.

PART III. WATER CONSERVATION PLAN

Water conservation programs are intended to reduce demand for water, improve the efficiency in use and reduce losses and waste of water. Long-term conservation measures that improve overall water use efficiencies can help reduce the need for short-term conservation measures. Water conservation is an important part of water resource management and can also help utility managers satisfy the ever-increasing demands being placed on water resources.

> Minnesota Statutes 103G.291, requires public water suppliers to implement demand reduction measures before seeking approvals to construct new wells or increases in authorized volumes of water. Minnesota Rules 6115.0770, require water users to employ the best available means and practices to promote the efficient use of water. Conservation programs can be cost effective when compared to the generally higher costs of developing new sources of supply or expanding water and/or wastewater treatment plant capacities.

A. Conservation Goals. The following section establishes goals for various measures of water demand. The programs necessary to achieve the goals will be described in the following section.

Unaccounted Water (calculate five year averages with data from Table 1)		
Average annual volume unaccounted water for the last 5 years	6,200,000	gallons
Average percent unaccounted water for the last 5 years	8.03	percent
AWWA recommends that unaccounted water not exceed 10%. Describe goals to reduce unaccounted water if the average of the last 5 years exceeds 10%.		

Residential Gallons Per Capita Demand (GPCD)		
Average residential GPCD use for the last 5 years (use data from Table 1)	69.51	GPCD
In 2002, average residential GPCD use in the Twin Cities Metropolitan Area was 75 GPCD. Describe goals to reduce residential demand if the average for the last 5 years exceeds 75 GPCD.		

Total Per Capita Demand: From Table 1, is the trend in overall per capita demand over the past 10 years ☐ increasing or ☒ decreasing? If total GPCD is increasing, describe the goals to lower overall per capita demand or explain the reasons for the increase.

Peak Demands (calculate average ratio for last five years using data from Table 1)	
Average maximum day to average day ratio	2.4
If peak demands exceed a ratio of 2.6, describe the goals for lowering peak demands.	

B. Water Conservation Programs. Describe all short-term conservation measures that are available for use in an emergency and long-term measures to improve water use efficiencies for each of the six conservation program elements listed below. Short-term demand reduction measures must be included in the emergency response procedures and must be in support of, and part of, a community all-hazard emergency operation plan.

1. **Metering.** The American Water Works Association (AWWA) recommends that every water utility meter all water taken into its system and all water distributed from its system at its customer's point of service. An effective metering program relies upon periodic performance testing, repair, repair and maintenance of all meters. AWWA also recommends that utilities conduct regular water audits to ensure accountability. Complete Table 10 (A) regarding the number and maintenance of customer meters.

TABLE 10 (A) Customer Meters

	Number of Connections	Number of Metered Connections	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Residential	295	295		14 / 20
Institutional	3	3		14 / 20
Commercial	47	47		14 / 20
Industrial				14 / 20
Public Facilities				
Other				14 / 20
TOTALS	345	345		

Unmetered Systems. Provide an estimate of the cost to install meters and the projected water savings from metering water use. Also indicate any plans to install meters.
N/A

TABLE 10 (B) Water Source Meters

	Number of Meters	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Water Source (wells/intakes)	3	N/A	27 / As Needed
Treatment Plant	1	N/A	27 / As Needed

2. **Unaccounted Water.** Water audits are intended to identify, quantify, and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The AWWA recommends a goal of ten percent or less for unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association.

Frequency of water audits: ☐ each billing cycle ☐ yearly ☐ other:

Leak detection and survey: ☐ every year ☐ every years ☒ periodic as needed
Year last leak detection survey completed:

Reducing Unaccounted Water. List potential sources and efforts being taken to reduce unaccounted water. If unaccounted water exceeds 10% of total withdrawals, include the timeframe for completing work to reduce unaccounted water to 10% or less.
Sources of unaccounted water include water main flushing, cleaning sewers, inaccurate metering and leaks. As meters are discovered to be faulty they shall be replaced.

3. **Conservation Water Rates.** Plans must include the current rate structure for all customers and provide information on any proposed rate changes. Discuss the basis for current price levels and rates, including cost of service data, and the impact current rates have on conservation.

Billing Frequency: ☐ Monthly ☐ Bimonthly ☒ Quarterly
☐ Other (describe):

Volume included in base rate or service charge: 0 gallons or cubic feet

Conservation Rate Structures
- ☐ Increasing block rate: rate per unit increases as water use increases
- ☐ Seasonal rate: higher rates in summer to reduce peak demands
- ☐ Service charge or base fee that does not include a water volume

Conservation Neutral Rate Structure
- ☒ Uniform rate: rate per unit is the same regardless of volume

Non-conserving Rate Structures
- ☐ Service charge or base fee that includes a large volume of water
- ☐ Declining block rate: rate per unit decreases as water use increases
- ☐ Flat rate: one fee regardless of how much water is used (unmetered)

Other (describe): In accordance with Minnesota Statutes, section 103G.291, subd 4, the City of Spring Park will implement a conservation rate structure by January 1, 2010

Water Rates Evaluated: ☐ every year ☒ every 2 years ☐ no schedule
Date of last rate change: 2008

Declining block (the more water used, the cheaper the rate) and flat (one fee for an unlimited volume of water) rates should be phased out and replaced with conservation rates. Incorporating a seasonal rate structure and the benefits of a monthly billing cycle should also be considered along with the development of an emergency rate structure that could be quickly implemented to encourage conservation in an emergency.

Current Water Rates. Include a copy of the actual rate structure in Attachment B or list current water rates including base/service fees and volume charges below.
Minumum Charge per Quarter = $7.50 Charge per 1,000 gallons = $3.25

Non-conserving Rate Structures. Provide justification for the rate structure and its impact on reducing demands or indicate intentions including the timeframe for adopting a conservation rate structure.

4. **Regulation.** Plans should include regulations for short-term reductions in demand and long-term improvements in water efficiencies. Sample regulations are available from DNR Waters. Copies of adopted regulations or proposed restrictions should be included in Attachment A of the plan. Indicate any of the items below that are required by local regulations and also indicate if the requirement is applied each year or just in emergencies.

☐ Time of Day: no watering between am/pm and am/pm
(reduces evaporation) ☐ year around ☐ seasonal ☐ emergency only
☐ Odd/Even: (helps reduce peak demand) ☐ year around ☐ seasonal ☐ emergency only
☐ Water waste prohibited (no runoff from irrigation systems)
Describe ordinance:
☐ Limitations on turf areas for landscaping (reduces high water use turf areas)
Describe ordinance:
☐ Soil preparation (such as 4”-6” of organic soil on new turf areas with sandy soil)
Describe ordinance:
☐ Tree ratios (plant one tree for every square feet to reduce turf evapotranspiration)
Describe ordinance:
☐ Prohibit irrigation of medians or areas less than 8 feet wide
Describe ordinance:
☐ Permit required to fill swimming pool ☐ every year ☐ emergency only
☒ Other (describe): A draft ordinance that can be quickly adopted by the Council to comply with a critical water deficiency declaration in accordance with the Plan (Part II, E) is included in Attachment A.

State and Federal Regulations (mandated)

☒ Rainfall sensors on landscape irrigation systems. Minnesota Statute 103G.298 requires "All automatically operated landscape irrigation systems shall have furnished and installed technology that inhibits or interrupts operation of the landscape irrigation system during periods of sufficient moisture. The technology must be adjustable either by the end user or the professional practitioner of landscape irrigation services."

☒ Water Efficient Plumbing Fixtures. The 1992 Federal Energy Policy Act established manufacturing standards for water efficient plumbing fixtures, including toilets, urinals, faucets, and aerators.

Enforcement. Are ordinances enforced? ☒ Yes ☐ No If yes, indicate how ordinances are enforced along with any penalties for non-compliance.
In the event the draft ordinance is adopted in a water emergency, the ordinance will be enforced by the City of Spring Park and City of Orono Police and Public Works Departments. Penalties are identified in the draft Ordinance in Attachment A.

5. **Education and Information Programs.** Customers should be provided information on how to improve water use efficiencies a minimum of two times per year. Information should be provided at appropriate times to address peak demands. Emergency notices and educational materials on how to reduce water use should be available for quick distribution during an emergency. If any of the methods listed in the table below are used to provide water conservation tips, indicate the number of times that information is provided each year and attach a list of education efforts used for the last three years.

Current Education Programs	**Times/Year**
Billing inserts or tips printed on the actual bill	1
Consumer Confidence Reports	1
Local news papers	
Community news letters	1
Direct mailings (water audit/retrofit kits, showerheads, brochures)	
Information at utility and public buildings	
Public Service Announcements	
Cable TV Programs	
Demonstration projects (landscaping or plumbing)	
K-12 Education programs (Project Wet, Drinking Water Institute)	
School presentations	
Events (children's water festivals, environmental fairs)	
Community education	1
Water Week promotions	
Information provided to groups that tour the water treatment plant	
Website (include address:)	
Targeted efforts (large volume users, users with large increases)	
Notices of ordinances (include tips with notices)	
Emergency conservation notices (recommended)	
Other:	

List education efforts for the last three years in Attachment D of the plan. Be sure to indicate whether educational efforts are on-going and which efforts were initiated as an emergency or drought management effort.

Proposed Education Programs. Describe any additional efforts planned to provide conservation information to customers a minimum of twice per year (required if there are no current efforts).

A packet of conservation tips and information can be obtained by contacting DNR Waters or the Minnesota Rural Water Association (MRWA). The American Water Works Association (AWWA) www.awwa.org or www.waterwiser.org also has excellent materials on water conservation that are available in a number of formats. You can contact the MRWA 800/367-6792, the AWWA bookstore 800/926-7337 or DNR Waters 651/259-5703 for information regarding educational materials and formats that are available.

6. **Retrofitting Programs.** Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use as well as energy costs. It is recommended that communities develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and that the benefits of retrofitting be included in public education programs. You may also want to contact local electric or gas suppliers to see if they are interested in developing a showerhead distribution program for customers in your service area.

> A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.

Retrofitting Programs. Describe any education or incentive programs to encourage the retrofitting of inefficient plumbing fixtures (toilets, showerheads, faucets, and aerators) or appliances (washing machines).
N/A

Plan Approval. Water Supply Plans must be approved by the Department of Natural Resources (DNR) every ten years. Please submit plans for approval to the following address:

DNR Waters
Water Permit Programs Supervisor
500 Lafayette Road
St. Paul, MN 55155-4032

or Submit electronically to wateruse@dnr.state.mn.us.

Adoption of Plan. All DNR plan approvals are contingent on the formal adoption of the plan by the city council or utility board. Please submit a certificate of adoption (example available) or other action adopting the plan.

Metropolitan Area communities are also required to submit these plans to the Metropolitan Council. Please see PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS.

METROPOLITAN COUNCIL

PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS

Minnesota Statute 473.859 requires water supply plans to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process. Much of the required information is contained in Parts I-III of these guidelines. However, the following additional information is necessary to make the water supply plans consistent with the Metropolitan Land Use Planning Act upon which local comprehensive plans are based. Communities should use the information collected in the development of their plans to evaluate whether or not their water supplies are being developed consistent with the Council's Water Resources Management Policy Plan.

Policies. Provide a statement(s) on the principles that will dictate operation of the water supply utility: for example, "It is the policy of the city to provide good quality water at an affordable rate, while assuring this use does not have a long-term negative resource impact."

In order to enhance the quality of life within a community, it is fundamentally important to provide adequate community facilities for residents. The commonly provided facilities are parks and open space, administrative offices, and public utilities. It is the goal of the City to provide safe, reliable, sustainable and affordable water to all customers.

Impact on the Local Comprehensive Plan. Identify the impact that the adoption of this water supply plan has on the rest of the local comprehensive plan, including implications for future growth of the community, economic impact on the community and changes to the comprehensive plan that might result.

This plan will be used as a tool to use in planning for the growth of Spring Park. A conservation rate structure to be adopted in 2010 will aid in the water conservation efforts of the community. While there are no issues with the capacity of the water supply projected in the future, following the guidance of the plan can reinforce the reliability of the water supply such that it will not have a negative economic impact on the City.

Demand Projections

Year	Total Community Population	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2010	1850	1850	0.250	0.625	91.25
2020	2000	2000	0.270	0.675	98.55
2030	2100	2100	0.284	0.710	103.66
Ultimate					

Population projections should be consistent with those in the Metropolitan Council's *2030 Regional Development Framework* or the Communities 2008 Comprehensive Plan update**.** If population served differs from total population, explain in detail why the difference (i.e., service to other communities, not complete service within community etc.).

PLAN SUBMITTAL AND REVIEW OF THE PLAN

The plan will be reviewed by the Council according to the sequence outlined in Minnesota Statutes 473.175. **Prior to submittal to the Council, the plan must be submitted to adjacent governmental units for a 60-day review period.** Following submittal, the Council determines if the plan is complete for review within 15 days. If incomplete, the Council will notify the community and request the necessary information. When complete the Council will complete its review within 60 days or a mutually agreed upon extension. The community officially adopts the plan after the Council provides its comments.

Plans can be submitted electronically to the Council; however, the review process will not begin until the Council receives a paper copy of the materials. Electronic submissions can be via a CD, 3 ½" floppy disk or to the email address below. Metropolitan communities should submit their plans to:

Reviews Coordinator
Metropolitan Council
390 Robert St,
St. Paul, MN 55101

electronically to:
watersupply@metc.state.mn.us

Attachment A: Draft Ordinance

ORDINANCE NO. 09-04

AN ORDINANCE REGARDING THE REGULATION OF LAWN SPRINKLING IN THE CITY OF SPRING PARK

WHEREAS, all properties within the City of Spring Park are presently connected to and serviced by the City of Spring Park municipal water system; and

WHEREAS, the City Council finds that water usage for lawn sprinkling purposes causes a significant reduction of the water supply available for necessary public use, including normal residential, commercial, and industrial purposes, and further creates a significantly increased risk of depletion of the water supply necessary for firefighting purposes in the event of a fire emergency; and

WHEREAS, in Chapter 34, Article III, Sec. 34-165 of the Spring Park City Code the City reserves the right to limit or prescribe conditions for the use of water from the City's water supply; and

WHEREAS, the City Council finds that it is appropriate and necessary for the protection of public health, safety and welfare to permit the regulation and/or restriction of the use of the municipal water system for lawn sprinkling under certain circumstances.

NOW, THEREFORE, THE CITY OF SPRING PARK DOES ORDAIN:

That the following new Section 34-166 is hereby adopted as part of Chapter 34, Article III of the Spring Park City Code:

Sec. 34-166. Lawn Sprinkling/Watering Restrictions.

(a) Determination of Restrictions. The use of the municipal water system for lawn sprinkling or watering shall be regulated as provided in this ordinance. In the event the City Administrator and/or Utility Superintendent determines that a water shortage exists, the City Administrator and/or Utility Superintendent is authorized to restrict the sprinkling or watering of lawns within the City by posting a notice at City Hall setting forth the restrictions. Such restrictions may include a limitation as to which days of the week, dates of the months, or hours of the day during which lawn sprinkling/watering is prohibited. In addition, the City Administrator and/or Utility Superintendent may declare a total sprinkling/watering ban if it is determined that a water shortage of such magnitude as to threaten the public health or safety exists or will likely exist if such ban is not imposed. In the event that the water shortage occurs while supplying water to the communities of Orono or Mound, the supply of water to those communities may be discontinued per the respective agreements with those communities.

(b) Penalties. A person found to have violated any provision of this ordinance shall be subject to an administrative fine in an amount to be determined by resolution of the City Council and set forth in the City's official fee schedule. After the imposition of a third fine for violation of this ordinance, any violation thereafter shall be subject to misdemeanor prosecution in addition to the imposition of an administrative fine. The violation ticket will be issued immediately.

(c) Effective Date. This ordinance shall take effect immediately upon its passage by the City Council and publication.

The City Clerk/Administrator is directed to cause this ordinance to be published in the official newspaper forthwith.

Adopted by the City Council of Spring Park, Minnesota, this 20th day of April, 2009.

_____
Sarah Reinhardt, Mayor

Attest:

_____
Wendy Lewin, City Clerk

(Seal)

Local Water Management Plan
(LWMP)

May 2009
City of Spring Park, Minnesota

Local Water Management Plan

for

The City of Spring Park
4349 Warren Avenue
Spring Park, Minnesota 55384
May 2009

City Council

Mayor: Sarah Reinhardt

Council Members
Joanna Widmer
Tom Scanlon
Bruce Williamson
Norina Dove

City Staff

Interim Administrator: Jim Brimeyer
Acting City Clerk: Wendy Lewin
Utility Superintendent: D.J. Goman
Office Assistant: Sharon Farniock
Telephone: 952-471-9051

McCombs Frank Roos Associates, Inc.

14800 28th Avenue North
Suite 140
Plymouth, MN 55447
Telephone: 763-476-6010

MFRA No. SPR18070

CITY OF SPRING PARK
SURFACE WATER MANAGEMENT PLAN

TABLE OF CONTENTS

TABLES

MAPS

Map Following Page

* Map reprinted from 2008 City of Spring Park Comprehensive Plan

** Map reprinted from 2007 Minnehaha Creek Watershed District Comprehensive Water Resource Plan

TABLE OF CONTENTS

ACRONYM IDENTIFICATION

APPENDICES

SECTION I

INTRODUCTION AND EXECUTIVE SUMMARY

SECTION I – INTRODUCTION AND EXECUTIVE SUMMARY

A. Introduction

The City of Spring Park has prepared this Local Water Management Plan (LWMP) to provide the City and its residents with direction concerning the administration and implementation of surface water management activities within the community. The LWMP inventories City land and water resources and presents water management policies and goals, which address both known surface water-related problems and concerns about future development activities. The LWMP also presents the information needed to comply with the requirements of the federal, state and regional regulatory agencies involved in surface water management.

A.1 Policy Statement: The City of Spring Park is committed to a goal of no adverse impact or non-degradation for the area surface and ground waters. To accomplish this goal the City will demonstrate through the LWMP:

A.1.1 Performance measures for all proposed stormwater treatment devices.

A.1.2 Proposed plans and projects that will require stormwater management rate control, volume control and erosion control BMP protection measures that will require City and Minnehaha Creek Watershed District (MCWD) permitting approval prior to construction.

A.1.3 Performing proper maintenance for Public Work's activities such as street sweeping, cleanup of City Parkland and manhole sump cleaning.

A.1.4 Public education on water resource management.

A.1.5 Construction site inspection and enforcement of stormwater BMP's.

A.1.6 Providing necessary funds to implement the stormwater management plan.

A1.6 Implementation of a phosphorous loading reduction plan to help protect and preserve the Lake Minnetonka water resource.

A.2. To adopt by reference the Minnehaha Creek Watershed District's (MCWD) "Comprehensive Water Resources Management Plan", Rules and Regulations as part of Spring Park's "Local Water Management Plan" (LWMP) and to provide the localized information necessary to supplement the District's plan.

A.3 To authorize the MCWD to continue to apply all of its permitting rules and regulations in the City of Spring Park; District Rules B, Erosion Control; District Rule C, Flood Plain Alteration; District Rule D, Wetland Protection; District Rule E, Dredging; District Rule F, Shoreline and Stream bank Improvements; District Rule G, Water body Crossings; District Rule H, Enforcement; District Rule I, Variances; District Rule J, Fees Charged in Certain Cases; District Rule K, Performance Bond or Letter of Credit; District Rule N, Stormwater Management

A.4 To authorize the MCWD to be the "local unit of government" responsible for implementing the Minnesota Wetlands Conservation Act within the City of Spring Park.

A.5 To adopt by reference the 2008 City of Spring Park Comprehensive Plan.

B. Purpose

The general purpose and objectives of the City of Spring Park LWMP are as follows:

B.1 Promote infiltration of stormwater where feasible to improve water quality, reduce flow volumes and increase ground water recharge;

B.2 Promote activities that maintain, support and enhance the quantity and ecological integrity of aquatic and upland resources;

B.3 Preserve, maintain and improve aesthetic, physical, chemical and biological composition of the Lake Minnetonka resource.

B.4 Minimize the risks of threats to public health through the development of programs, plans and policies that preserve the quality of surface and ground waters.

B.5 Preserve the natural appearance of shorelines and minimize degradation of shorelines and water quality resulting from dredging operations;

B.6 Promote Best Management Practices (BMP's) to improve water quality;

B.7 Enhance public participation and knowledge by providing informational and educational material to the residents, businesses, developers and contractors;

B.8 Preserve, create and enhance wetland resources to maximize benefits and functionality to the City and Lake Minnetonka;

B.9 Promote aquifer protection;

B.10 Protect and preserve the Lake Minnetonka floodplain;

B.11 Control temporary sources of sediment resulting from land disturbance, minimize and correct the effects of sedimentation from erosion prone and sediment source areas;

B.12 Promote effective planning to minimize the impact of development and land use change on Spring Park's water resources;

B.13 Solicit public input with the intent that water resource policies, projects and programs will address the local values and goals. Strive to manage and make water resource decisions based on an educated public.

C. Regulatory Requirements

In 1982, the Minnesota Legislature adopted The Metropolitan Surface Water Management Act requiring all watersheds within the Twin Cities seven county metropolitan area to be incorporated into Watershed Districts and Watershed Management Organizations and the preparation and adoption of watershed management plans by each. The Act also requires

that Local Governmental Units prepare Local Surface Water Management Plans which include the official controls and capital improvements necessary to bring each local surface water management into conformance with its respective Watershed District or WMO plan.

The City of Spring Park is entirely situated within the Minnehaha Creek Watershed District and located within the Lake Minnetonka watershed basin. The City of Spring Park LWMP is intended to meet the requirements of the following regulatory documents:

C.1 Minnehaha Creek Watershed District (MCWD) "Comprehensive Water Resources Management Plan" and "Permitting Rules and Regulations".

C.2 Metropolitan Surface Water Management Act - Minnesota Statutes Chapter 103B;

C.3 Metropolitan Area Local Water Management - Minnesota Rules Chapter 8410;

C.4 Minnesota Wetland Conservation Act of 1991 and subsequent rules and amendments;

C.5 State and Federal laws pertaining to National Pollution Discharge Elimination System (NPDES);

C.6 (NPDES) permitting for stormwater outfalls to designated drainage ways;

C.7 Erosion Control Guidelines and Best Management Practices prepared by the Minnesota Pollution Control Agency;

C.8 Regulations of the Lake Minnetonka Conservation District.

D. Water Resource Management Related Agreements

D.1 MCWD "Memorandum of Understanding": The City of Spring Park currently has a "Memorandum of Understanding" with the MCWD. The terms of the agreement is the understanding that the City of Spring Park agrees to authorize the MCWD permitting authority in all areas regulated by

the District and all City stormwater management controls are as protective as the District's.

D.2 Lake Minnetonka Conversation District: The City of Spring is a participating City member of the Lake Minnetonka Conversation District. Spring Park has an appointed representative who reports monthly to the City Council.

E. Executive Summary of Local Water Management Plan Content

The City of Spring Park's LWMP has been developed to meet the needs of the community and address the management planning requirements of the Metropolitan Surface Water Management Act and MCWD Comprehensive Water Resource Plan. The LWMP has been prepared in general accordance with Minnesota Rules Chapter 8410 and follows the plan outline identified in the rules.

The following summaries identify the major sections of the LWMP and where information can be located in the plan document:

E.1 Section I - Executive Summary:

This section presents an introduction for the local water management plan, and a summary of all the sections of this Surface Water Management Plan. This section also summarizes strategic recommendations for consideration by the City in implementing the LWMP.

E.2 Section II - Land and Water Resource Inventory:

This section categorizes a wide range of information under the subsections entitled Physical Environment, Human Environment and Surface Water System. The subsections provide information and references regarding water resource and physical factors within the City of Spring Park including the following:

- Location

- Precipitation data for hydrologic/hydraulic review and design
- Geologic and topographic information
- Surface soils and groundwater information
- Land Erosion (Runoff) Susceptibility
- Unique features and scenic areas
- Land use and public utility services
- Water-based recreational areas and land ownership
- Potential pollutant sources
- Public waters and wetlands
- Flood Insurance Studies and surface water drainage information
- City subwatersheds and Storm water modeling data, limitations and results
- Flood problem areas and surface water quality

E.3 Section III – Establishment of Policies and Goals:

This section outlines goals and policies addressing specific water resource management needs of the City and their relationship with the MCWD, Regional, State, and Federal goals and programs. Goals and policies relating to the following issues are presented:

- Water quantity
- Water quality
- Erosion and sedimentation
- Wetlands
- Groundwater
- Recreation, fish and wildlife
- Enhancement of public participation

E.4 Section IV - Assessment of Problems and Corrective Actions

This section provides an assessment of existing or potential water resource related problems within the City. This section also describes potential structural, nonstructural and programmatic solutions on correction actions to the identified problems.

E.5 Section V – Implementation Program

This section identifies the regulatory controls, management programs, storm water design and performance standards, and capital improvements to be utilized by the City in implementing this LWMP.

E.6 Section VI – Implementation Priorities and Financial Considerations

This section presents improvement priorities and financial considerations that can be reasonably funded and implemented by the City in the near and longer-term future. This section also identifies the estimated costs and potential funding sources for implementing the proposed regulatory controls and programs.

E.7 Section VII – Stormwater Management and Erosion Control Standards

This section addresses stormwater management and erosion control standards the City should adopt and enforce when new development, or redevelopment occurs. Implementation of these standards will help minimize the impact of stormwater runoff from the site and to receiving downstream areas.

E.8 Section VIII – Amendment Procedures

This section presents the process for making amendments consistent with the future MCWD plan.

F. Recommendations

The following recommendations are presented for the City's consideration based upon the information compiled for this LWMP:

F.1 To complete an update of the City Ordinance, Codes and Guidelines to be in conformance with MCWD Rules and Regulations for stormwater management, shoreland alterations, floodplain district and wetland district.

F.2 Confirm and execute all legal agreements determined necessary to assure the partnership between the MCWD and the City of Spring Park..

F.3 To review the Zoning Development Ordinance from a water resource prospective in order to determine opportunities to enhance water resource protection.

F.4 The LWMP should be used to guide future water resource management decisions and stormwater related issues in existing and projected urban growth areas.

F.5 The City should examine existing and potential funding sources available for implementing stormwater regulatory controls and improvements.

F.6 The City should consider the additional staff time and financial resources required to implement this LWMP and develop additional revenue sources and budget accordingly.

F.7 To continue water resource educational programs and partner with the MCWD, Lake Minnetonka Conservation District (LMCD), other lakeside communities and other agencies to provide educational opportunities for the community;

F.8 The LWMP provides a general framework for addressing existing and future surface water management issues within the City. Additional studies may be required when specific development proposals are prepared;

F.9 The City should consider preparation of a well head protection as a protection measure for the city's water supply and the regions ground water resource.

SECTION II

LAND AND WATER RESOURCE INVENTORY

SECTION II – LAND AND WATER RESOURCE INVENTORY

A. Introduction

This section provides a localized description and summary of land and water resource factors affecting the water resources within the City of Spring Park to supplement the MCWD "Comprehensive Water Resource Plan". The subsections include Physical Environment, Human Environment, Surface Water Systems, and Groundwater Resource Data. The Physical Environment subsection presents local information on precipitation, geology, topography, soils, fish and wildlife habitat and unique features and scenic areas. The Human Environment subsection identifies local land use, public utility services, water based recreational areas and known pollutant sources. The Surface Water Systems subsection presents information on the City's drainage patterns, hydrologic systems, public waters and wetlands, floodplain areas, flood studies, shoreland management and water quality.

Much of the information contained within this section was compiled from available governmental sources, 2007 MCWD Comprehensive Water Resource Plan, and the City of Spring Park Comprehensive Plan. Whenever possible, the location of the information or additional resources have been identified or referenced.

B. Physical Environment

B.1 Location

The City of Spring Park occupies approximately 236 acres on Lake Minnetonka, in western Hennepin County. Communities adjacent to Spring Park include Mound on the west border and Orono on the east border. Lake Minnetonka borders Spring Park on the north and south. Refer to Regional Map. The City of Spring Park is located

entirely within the MCWD and the Lake Minnetonka watershed area. Refer to Lake Minnetonka Subwatershed Location Map.

B.2 Precipitation

The climate of the Minneapolis/St. Paul metropolitan area is a humid continental climate with moderate precipitation, wide daily temperature variations, warm humid summers and cold winters. The total average annual precipitation is approximately 30 inches of which approximately 1/3 occurs in the months of June, July and August. The annual snowfall average is about 55 inches and is equivalent to approximately 5.3 inches of water. The average monthly temperatures, precipitations, and snowfalls are shown on Table 1.

TABLE 1 – AVERAGE CLIMATE DATA FOR MINNEAPOLIS

Month	Temperature (°F)	Precipitation (Inches)	Snowfall (Inches)
January	13.1	1.04	13.5
February	20.1	0.79	8.2
March	32.1	1.86	10.4
April	46.6	2.31	3.1
May	59.3	3.24	0.1
June	68.4	4.34	0
July	73.2	4.04	0
August	70.6	4.05	0
September	61.0	2.69	0
October	49.7	2.11	0.6
November	32.5	1.94	10.0
December	18.7	1.00	10.0
Annual Average	45.40	29.41	55.90

Source: Minnesota State Climatology 0ffice

For purposes of this LWMP and for enforcement of citywide and individual stormwater management plans, The City will rely on synthetic storms based on a 24-hour duration. The 24-hour design storms are the 1-year, 10 -year and the 100-year events. Table 2 identifies the specific design storm events, probability of occurrence and design rationale typically used for each design storm event

TABLE – 2 STORM EVENT TABULATION

Storm Event (Return Period)	**Rainfall Amount (24 hour period)**	**Storm Event Use Criteria (Typical)**
1 - Year	2.3”	Stormwater Rate Control, Volume Control
10 - Year	4.1”	Storm Sewer Design, Stormwater Rate Control
100 - Year	5.9”	Design of Ponding/ Flooding Structures, High Water Levels, Stormwater Rate Control

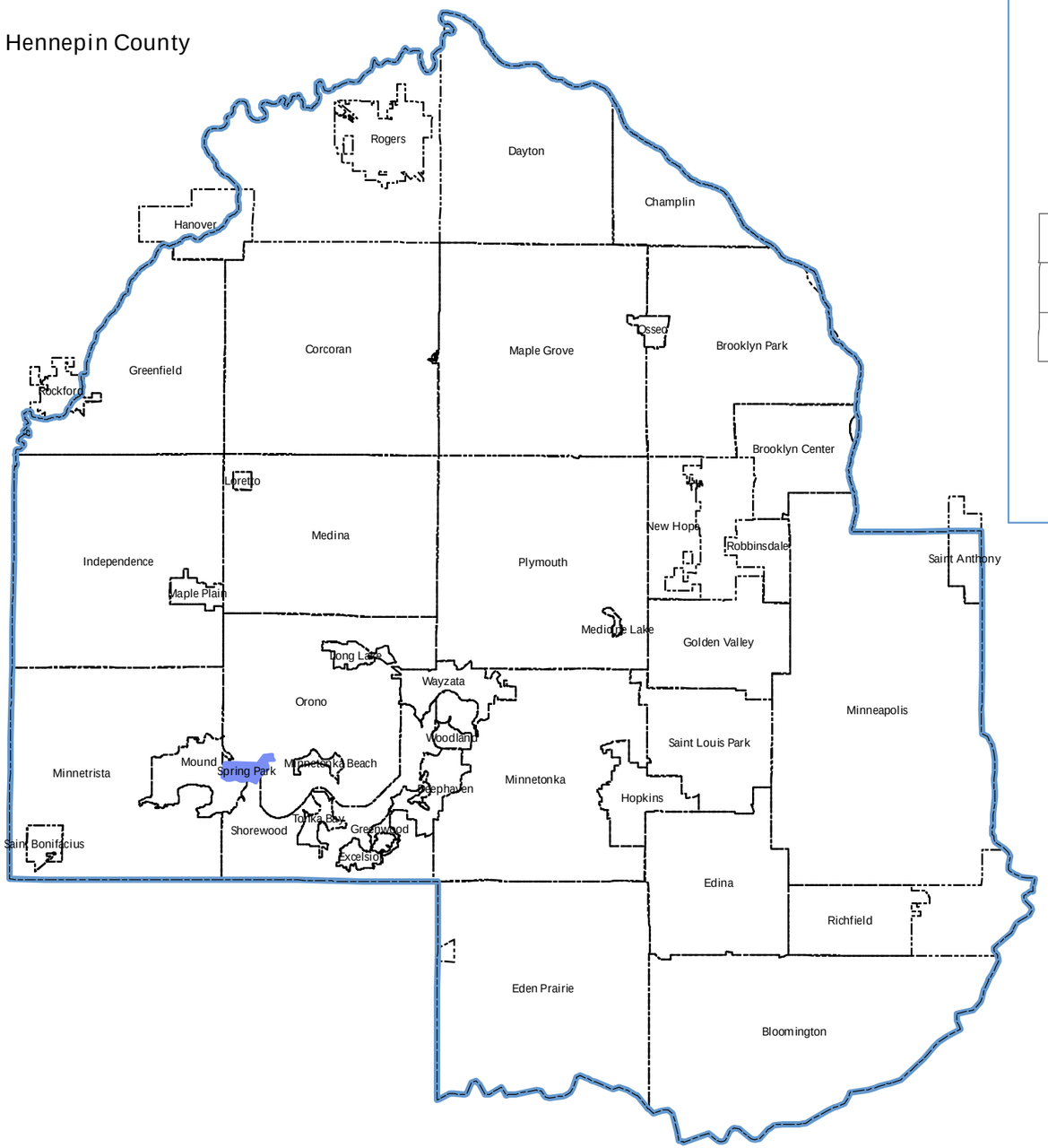
The use of synthetic storms and the cumulative rainfall amounts are consistent with MCWD standards. Further documentation regarding these storms can be found at: Minnesota Hydrology Guide prepared by the NRCS, the U. S. Weather Bureau Technical Papers 40 and 49, and the NRCS National Engineering Handbook - Hydrology - Section 4.

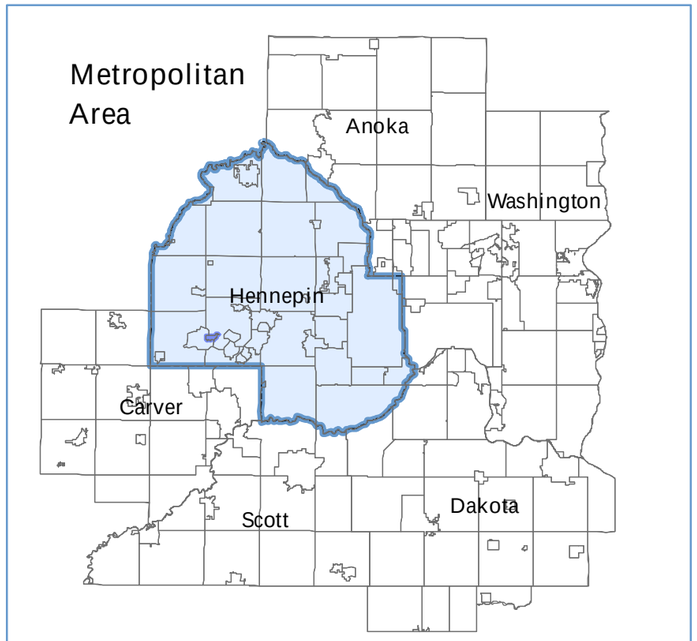
B.3 Geology and Ground Water

The general geology of Hennepin County and the City of spring Park has been compiled by the Minnesota Geological Survey in a document titled Geologic Atlas of Hennepin County Minnesota (H. Hobbs and G. Meyer, Editors, 1989).

The surficial geology of the City consists of Glacial Till deposits and Des Moines Lobe deposits. The 40 foot top layer of Glacial loamy till is underlain by a layer of

Regional Map





City of Spring Park

Legend

- Hennepin County
- Spring Park
- Municipalities

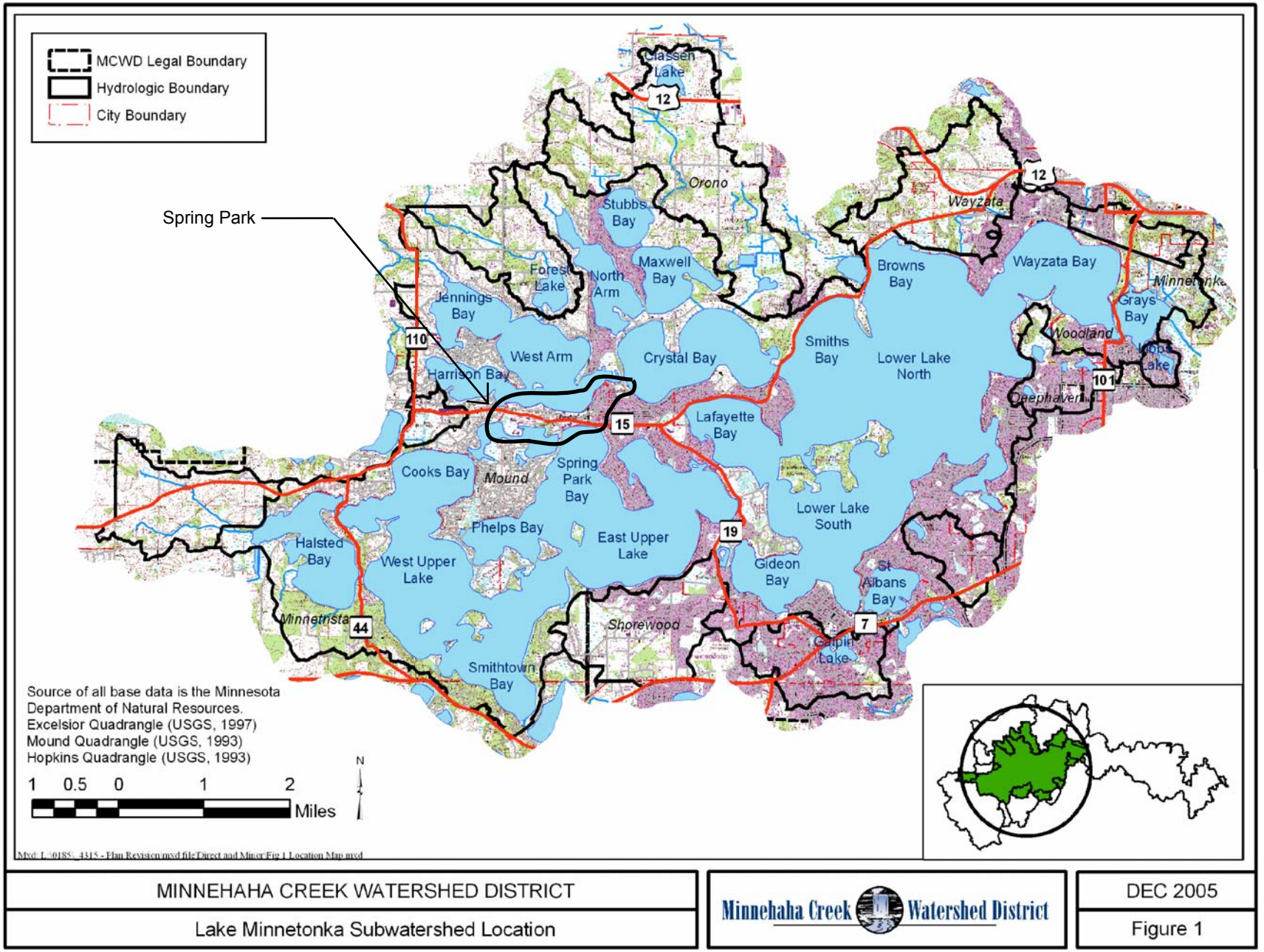
Prepared: November 21, 2007

Feet

0 8,000 16,000 32,000 48,000

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway Suite 202 Golden Valley, MN 55422
Telephone: 763.231.0656 Facsimile: 763.231.0661 pcrunce@nacplanning.com



MINNEHAHA CREEK WATERSHED DISTRICT

Lake Minnetonka Subwatershed Location

Minnehaha Creek Watershed District

DEC 2005

Figure 1

Des Moines/Grantsberg Sublobe deposits up to 200 feet , with a 75 foot layer of Superior Lobe sediments to the top of bedrock.

The bedrock starts at approximately 280 feet below the city well surface elevation. The Minnesota Department of Health Well and Boring Records indicate the top bedrock is a thin layer of St. Peter Sandstone. The next formations are the Prairie Du Chien Group and Jordan Sandstone formation, the aquifer source for one of the city wells. Below the Jordan Sandstone are the St. Lawrence and Franconia Formations and the Ironton Galesville Sandstones. The city taps this aquifer for another well. The Eau Claire Formation separates the Mt. Simon Sandstone aquifer, the third well water source for the City.

The water table (soil consisting of saturated water located above the highest elevation of bedrock) in Spring Park varies with the lake level and local soil conditions. The clayey soils and granular lenses make for a variable water table condition. The water table elevation is estimated to be from 927 to 929.5. The water table elevation at a given location can vary from time to time depending on rainfall activity, soil water capacity, soil type and lake level.

The sensitivity of ground water pollution to the water table, the upper most ground water resource, is greater near the shoreline of Lake Minnetonka. The sensitivity lessens in the upland areas where there is greater separation between the surface and the ground water. The ground water table is connected directly to Lake Minnetonka which also makes the lake sensitive to pollution entering the ground water in upland areas.

The Geologic Atlas of Hennepin County identifies the Prairie Du Chein – Jordan Aquifer to have a "low" susceptibility to pollution. This condition is based on over 250 feet of loamy till, clay loam till and lake clay and silt overlaying the bedrock. There are no known wells that need that need to be abandoned in accordance with Minnesota Department of Health requirements.

B.4 Topography

Terrain within the city can be classified as gently rolling to level. The highest land elevations are adjacent to County Road 15. County Road 15 runs east-west through the entire length of the city. The terrain gently slopes to the north and south and into Lake Minnetonka. Isolated areas contain steeper slopes. The majority of the steep slopes are associated with the old railway embankment, now the Dakota Rail Regional Trail, which runs east to west through the City.

B.5 Soils

The soils in areas of Spring Park that have not been developed and properties where re-development can be considered are to have moderate to questionable limitations in terms of building site suitability. The surface soils are made up primarily of loams and clay soil types.

The general classification and hydrologic classification of the soils in Spring Park is found in the "Soil Survey for Hennepin County" prepared by the USDA Natural Resource Conservation Service (NRCS). All NRCS soil findings have now been placed online in a convenient easy to read format. The soil information can be found at: *http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx*

The information found online provides a good preliminary estimate of soil classification. If land disturbing activities are proposed, the City would require verification via soil borings and would not rely on information presented by the

- State, National or local forests
- Scientific or Natural Areas or areas designated for Wildlife Protection
- Three Rivers Park District Parks

Hennepin County operates a Sheriffs Water Patrol facility, a public boat landing and the Southwest Hennepin LRT Trail in Spring Park.

The Lake Minnetonka region is known as a "Scenic Area" and a premiere sport fishery with biodiversity significance and recreational features.

B.8 Biological Environment

B.8.1 Vegetation: The City of Spring Park is predominantly developed with a scattering of vacant properties and parkland. Natural vegetation consists of shoreline, aquatic and wetland varieties.

B.8.2 Lake Minnetonka: The city is surrounded by Lake Minnetonka. The MNDNR regularly stocks and surveys the fish populations in the lake. The fishery is classified as a sport-walleye lake populated with blue gill, walleye, northern pike, yellow perch, bass and black crappie. The MNDNR stocks the lake with walleye and muskellunge.

Lake Minnetonka is under a Minnesota Pollution Control (MPCA) "Fish Consumption Advisory" due to elevated levels of mercury. Several Lake Bays including West Arm (Bay) have been added to the MPCA's impaired waters list for nutrient/eutrophication biological indicators.

B.8.3 There is one upland wetland in the City of Spring Park, identified in the 2003 MCWD "Functional Assessment of Wetlands." The remaining wetlands are located along Seton Lake and Black Lake shoreline in the southwest part of the City. Refer to Wetland Classification Map and classification tabulation in Appendix A.

C. Human Environment

C.1 Land Use

The City's 2030 Comprehensive Plan contains descriptions of existing land use, current zoning, population and proposed land use projections. Maps of the of the Existing Land Use, Current Zoning and 2020 Proposed Land Use Plan are provided on the following pages of this report. The majority of the City is considered "built-out", or fully developed as only 13.8 acres of land remains undeveloped (2008). Most of the City consists of residential housing with multi-family, commercial and industrial land uses. There is potential for primarily commercial and multi-housing development and re-development. The 2000 population was 1,717 and is expected to grow to 2,000 in 2020.

The total land area is 236 acres. City boundaries extend out into Lake Minnetonka increasing the City area to 298.2 acres. The land use categories consist of 73 acres of single family housing, 42 acres of multiple housing and 40 acres of commercial and light industrial. There 5 acres of parks and public lands. Further discussion regarding existing and future land use can be found in the 2030 City Comprehensive Plan.

C.2 Public Utilities Services

C.2.1 Sanitary Sewer:

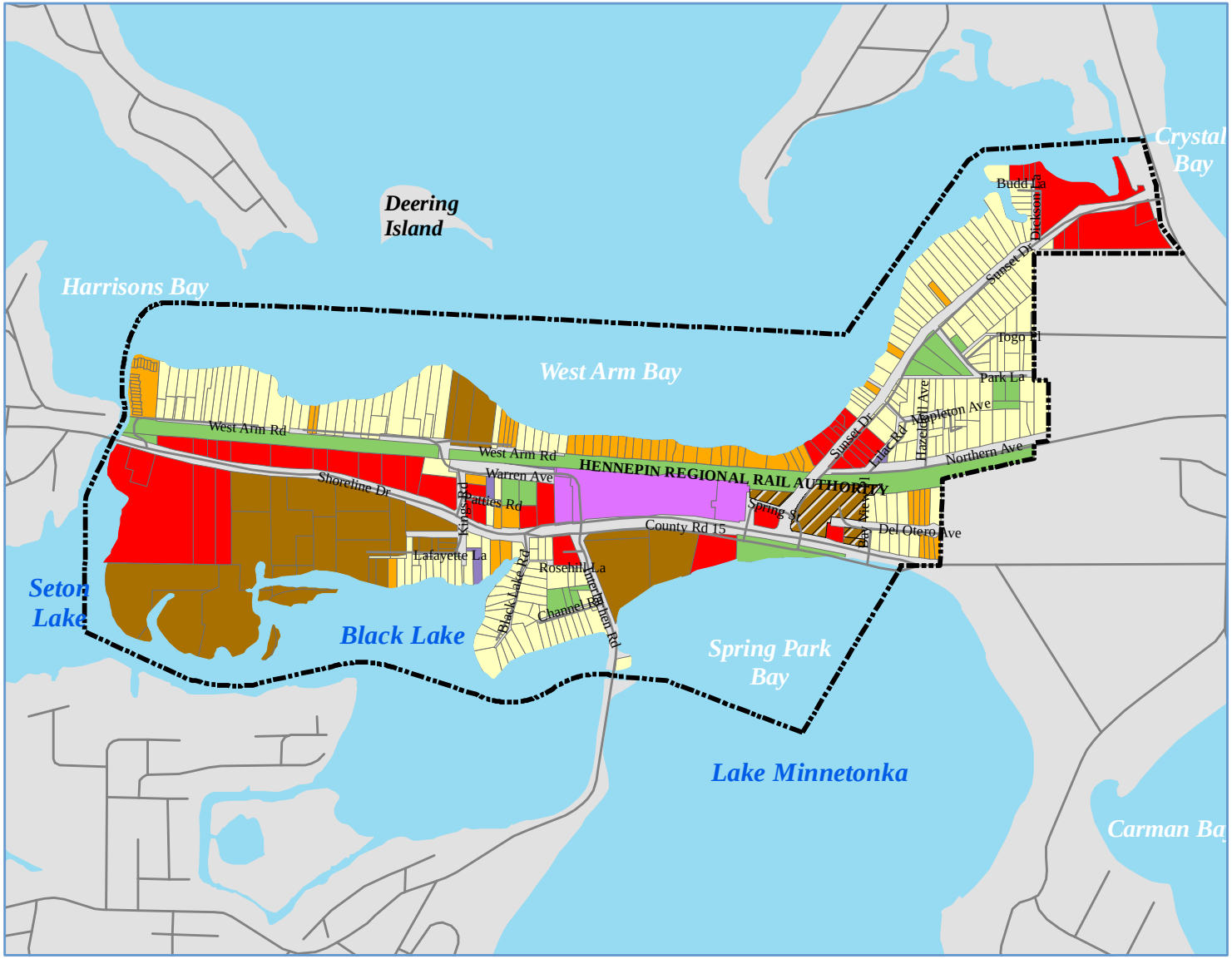
The City of Spring Park is served by a municipal, city operated sanitary sewer system. All of the sewage flows are collected in the city system and pumped by a lift station to a Metropolitan Council sewer trunk line. The City is located entirely within the Metropolitan Urban Service Area (MUSA).

C.2.2 Storm Sewer:

Most of the City's existing storm sewers were originally installed to alleviate specific drainage problems. The purpose of these storm sewers was to drain already developed areas as drainage problems occurred. These areas consisted of lake homes, cabins, streets and small commercial sites. The earlier storm sewers were simple systems consisting of some type of catch basin or basins connected to pipes that outlet directly into Lake Minnetonka. Many of the earlier structures were old water heaters and steel drums. This manner of controlling storm water runoff led to a citywide system of storm sewers and operating long before comprehensive land use and stormwater management planning became municipal practice. As a result, drainage problems would occur in developing upstream and downstream areas and the City had an in-place drainage system that was not capable of providing runoff rate control and water quality treatment as required by today's standards.

Since comprehensive planning and stormwater management have become an integral part of government, the City of Spring Park has taken steps to improve its stormwater drainage. New storm sewers have been constructed eliminating

Existing Land Use



City of Spring Park

SP SPRING PARK

Existing Land Use

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Mixed Use-Residential
- Seasonal Recreational
- Commercial
- Industrial
- Institutional
- Public
- Vacant

Prepared: May 6, 2008

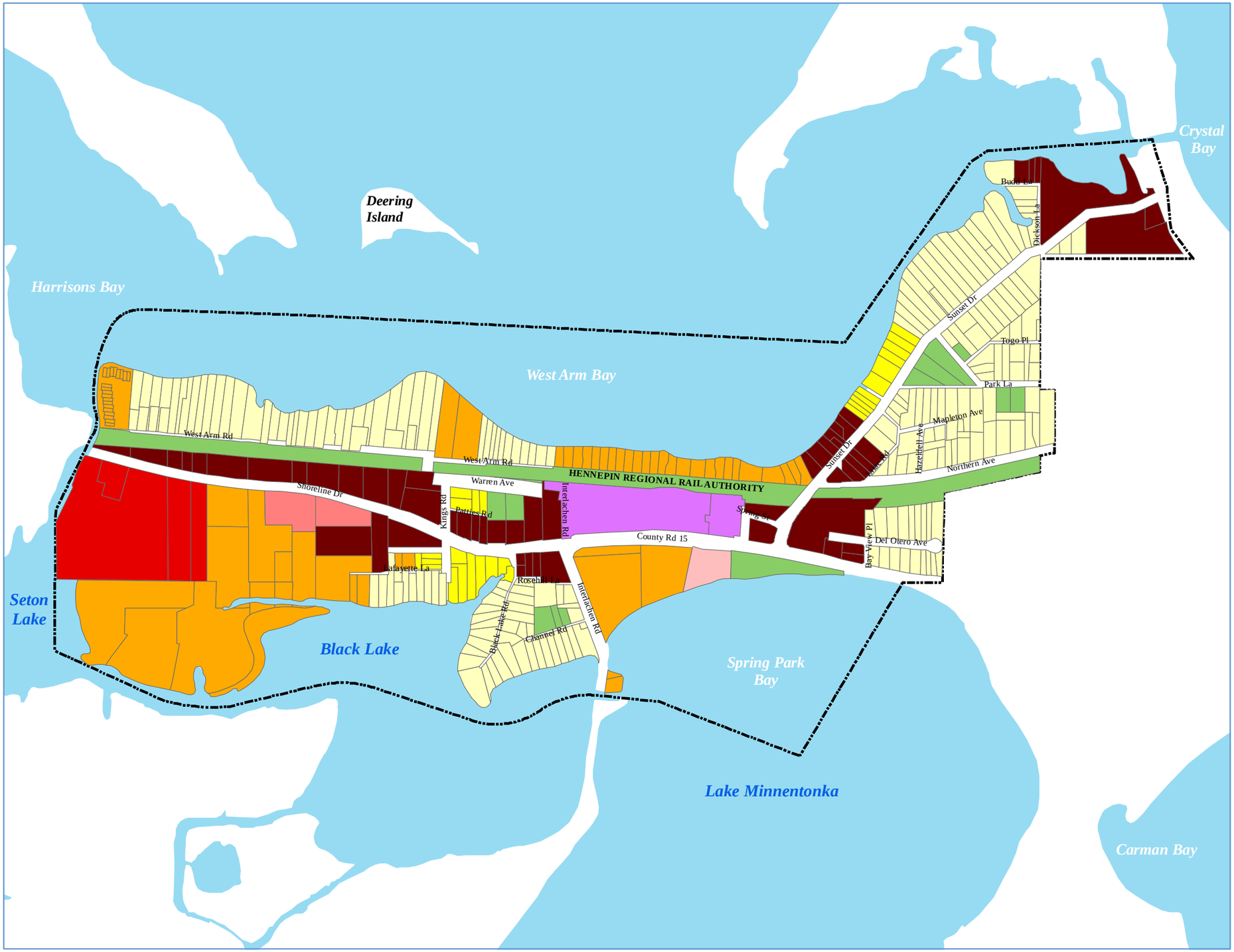
Feet

0 255 510 1,020 1,530

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NAC NORTHWEST ASSOCIATED CONSULTANTS, INC.

Zoning Map



City of Spring Park

SP SPRING PARK On Lake Minnetonka

Zoning Districts

- R-1 Single & Two Family Residential
- R-2 Medium Density Residential
- R-3 High Density Residential
- C-1 General Commercial
- C-2 Shopping Center
- C-3 Health Care Facility
- C-4 Office Commercial
- M Manufacturing
- P Public/Semi-Public
- Boundary
- Lakes

N

Prepared: September 12, 2007

Feet

0 250 500 1,000 1,500

Source:
Hennepin County, City of Spring Park
Minnesota Department of Natural Resources
Northwest Associated Consultants, Inc.

NAC NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
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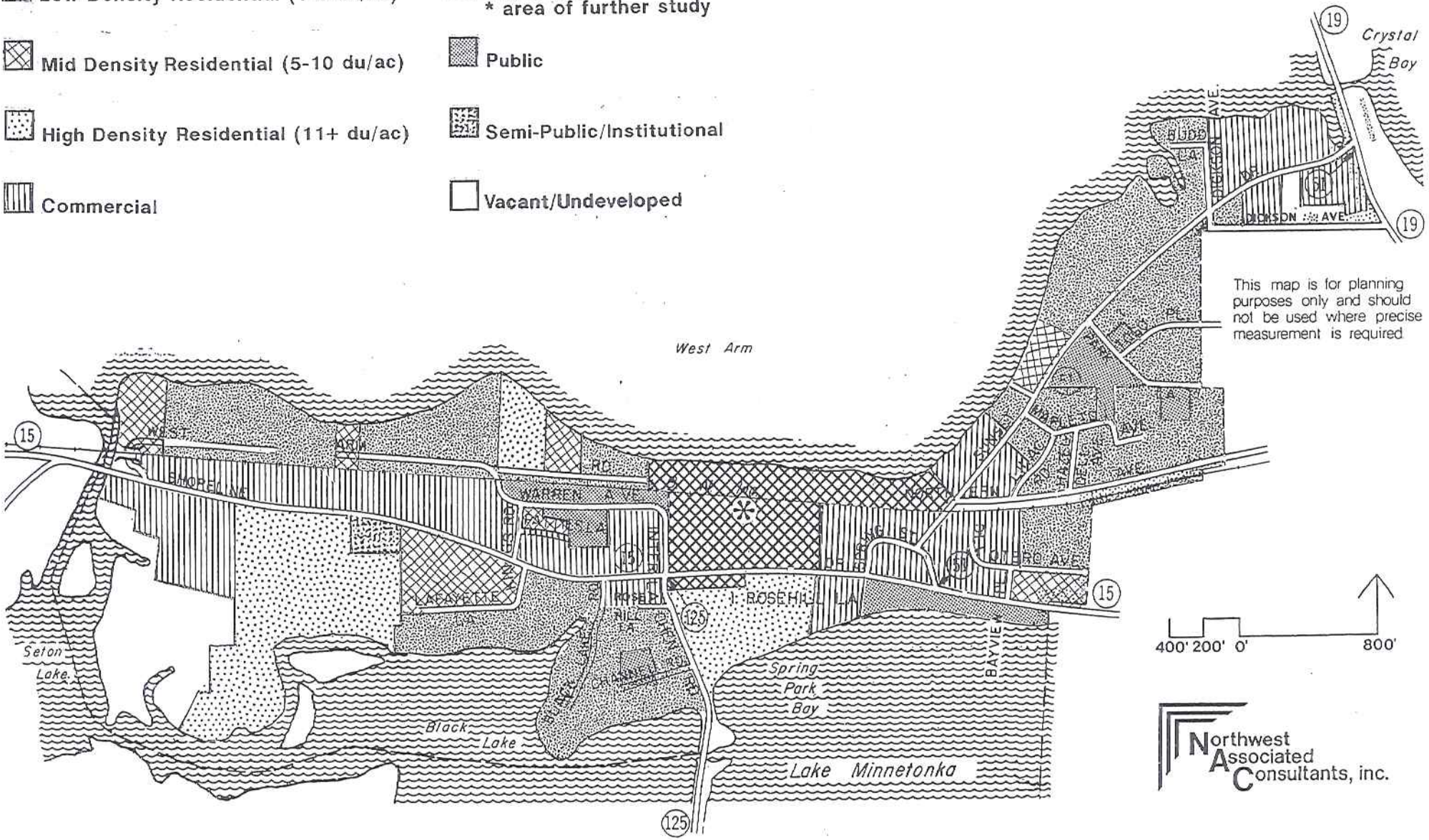
Spring Park Minnesota

Future Land Use Plan 2020

- Low Density Residential (1-4 du/ac)
- Mid Density Residential (5-10 du/ac)
- High Density Residential (11+ du/ac)
- Commercial
- Mixed Use * area of further study
- Public
- Semi-Public/Institutional
- Vacant/Undeveloped



Northwest Associated Consultants, inc.

many of the drainage problems, older systems have been upgraded and new detention basins have been constructed, providing water quality treatment and rate control. There are two private detention basins in the city which provide phosphorous removals. New developments have incorporated smaller detention basin BMP's and proprietary manhole or concrete structures in their projects. Overland flow and swales are utilized by the City where it is feasible and appropriate.

The current public storm sewer system in the City of Spring Park is comprised of county road and city street culverts, County Road 15 storm sewer, city storm sewer and private site storm sewer. Due to the close proximity of Lake Minnetonka, a large portion of stormwater runoff drains overland, directly into Lake Minnetonka.

In order to assess the condition and operation of the existing storm sewer system a storm survey was conducted in 1989, updated in 2002 and 2009. A map identifying existing storm sewer culverts, basins, and outfalls and an Inventory tabulation is attached in Appendix B.

C.2.3 Water System:

The City of Spring Park is served by a municipal, city operated domestic water system. Three wells supply the water, a water treatment plant provides iron and manganese treatment, a 250,000 gallon elevated water tank provides storage and pressure to the distribution system.

C.3 Potential Pollutant Sources

Various land use practices have the potential to contaminate local surface waters and groundwater. There is significant contamination potential at open and closed

landfills, dumps, hazardous waste sites, and underground and aboveground storage tanks. The city does not have operating private septic systems, operating landfills, superfund sites, permitted waste water discharges or animal feedlots.

The MPCA currently lists a total of fifteen (15) sites in Spring Park with aboveground and underground tanks. Six (6) sites are enrolled in the MPCA's "Voluntary Investigation and Cleanup (VIC) program. One of those sites is active, the rest are inactive. These sites are shown on the Polluted Sites Map. Refer to the MPCA web site for additional information on the sites. None of the inactive or active sites are considered threats to surface or ground water resources.

D. Surface Water System

This section summarizes the available surface water data within the City. Additional information is included in the Appendices (as identified in this section) of the LWMP.

D.1 Public Waters and Wetlands

Lake Minnetonka is the primary water resource in Spring Park. The city is bordered on the northwest by Harrison's Bay, on the north by West Arm (Bay), on the west by Seton Channel and Seton Lake (Bay), on the south by Spring Park Bay and Black Lake (Bay).

The MNDNR currently lists two water bodies within the City of Spring Park as public water with a public water ID Those public waters are shown in the table below. Minnesota Chapter 103G provides specific criteria for protected status and the MNDNR Protected Waters and Wetlands (PWI) map identifies the protected water.

TABLE 3 – MNDNR PROTECTED WATERS

Water Body	DNR ID	Acreage
Lake Minnetonka	27-133-P	14,645
Wetland (unnamed)	27-915-W	8.74

An additional source of wetland identification are "National Wetlands Inventory" (NWI) Maps, prepared by the U.S. Fish and Wildlife Service. For wetland locations and classifications in Spring Park, refer to Appendix A for the MCWD "Functional Assessment of Wetlands" map and classification tabulation.

D.2 Ditches: There are no jurisdictional or public drainage ditches established under state statue in Spring Park.

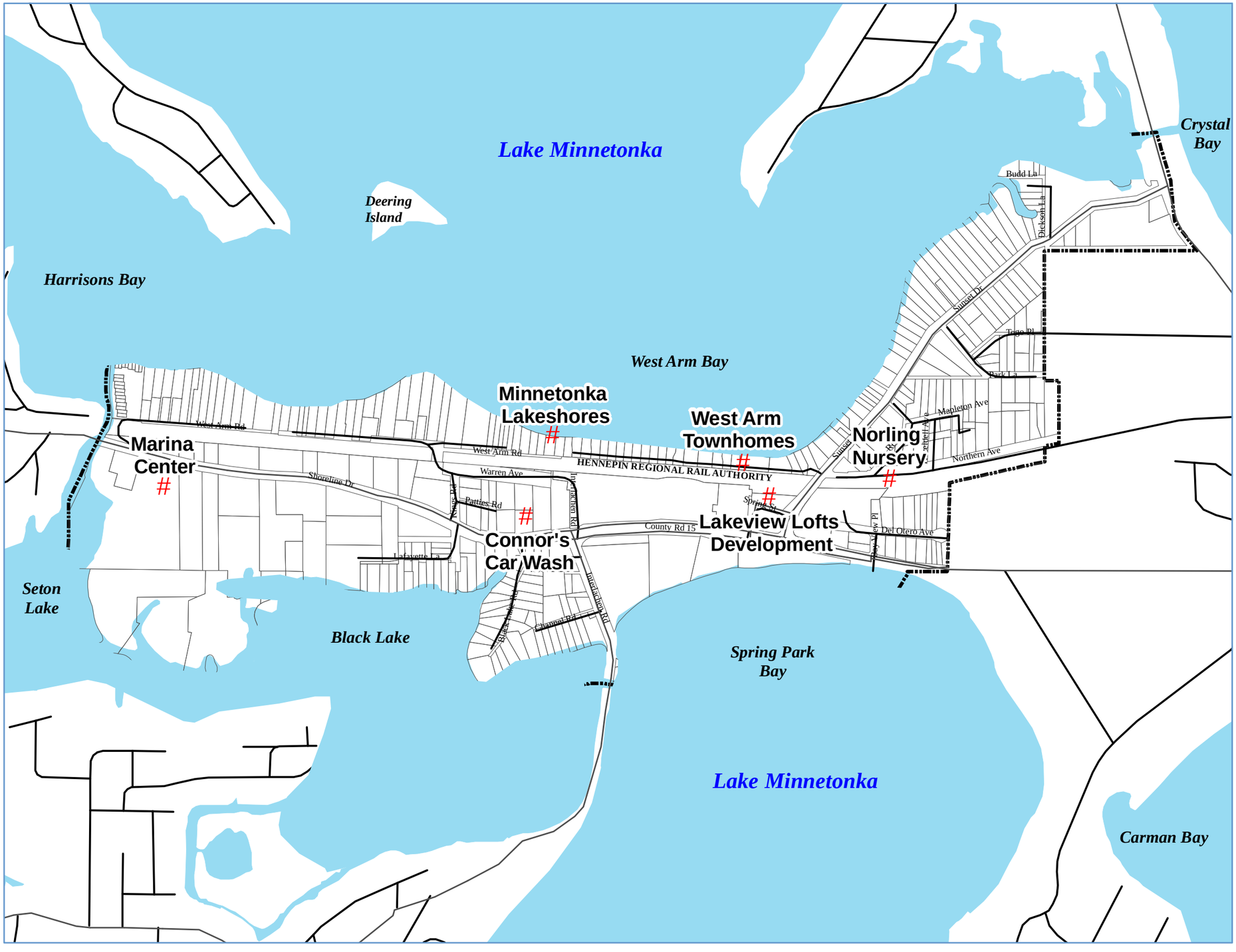
D.3 Flood Insurance (Plain) Studies:

The City of Spring Park is nearly encircled by Lake Minnetonka flood plain. The basis for flood plain zoning and regulation is the Federal Insurance Rate Map (FIRM) developed by the Federal Emergency Management Agency (FEMA). The FIRM for the City of Spring Park identifies the areas that are subject to 100 year and 500 year flood plain elevations. The City of Spring Park administers the FEMA program and recognizes the Lake Minnetonka 100 year flood plain elevation as 931.5.

D.4 Surface Water Drainage Information and Modeling:

The surface water drainage system consists of catch basins that collect run-off from streets and parking lots and drain into storm sewer. The storm sewer lines either flow into stormwater treatment basins and outlet into Lake Minnetonka or outlet from storm sewers directly into Lake Minnetonka. Shoreline areas drain overland, mostly across residential yards directly into Lake Minnetonka.

Polluted Sites



City of Spring Park

SP SPRING PARK
On Lake Minnetonka

Legend

- # Voluntary Investigation & Cleanup Program
- Boundary
- Lakes

N

Feet

0 250 500 1,000 1,500

Source: Hennepin County, City of Spring Park, MN DNR, MPCA, & Northwest Associated Consultants, Inc.
Prepared: February 2008.

NORTHWEST ASSOCIATED CONSULTANTS, INC.
4800 Olson Memorial Highway, Suite 202, Golden Valley, MN 55422
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When site specific stormwater management plans are required the City will use a HydroCAD or similar computer program to estimate stormwater flows. HydroCAD is a hydrologic/hydraulics program based on techniques and methods developed by the National Resource Conversation Service (NRCS). The results of the HydroCAD model can provide probability-statistical determinations of runoff rates, pond/basin storage volumes and water elevations.

Stormwater runoff generated in the City flows to Lake Minnetonka in a very short time period. The impact on the Lake Minnetonka water level is minimal. Runoff rates in the past where regulated based on water quality treatment criteria and storm sewer capacity.

City wide runoff volumes have increased slightly over the years due to development and re-development adding to the existing impervious surfaces. With very limited land and resources for infiltration the volumes of runoff are expected to remain the same.

D.6 Flood Problem Areas:

There are few isolated areas that pond water and have flooding problems associated with stormwater runoff. These are considered “nuisance” in nature and are associated with low spots. There are no current landlocked areas experiencing flood problems. The City will continue to apply acceptable stormwater and surface water management practices for current properties and potential development areas. The City will adhere to a minimum building elevation of 2’ above 100-year HWL elevations from adjacent ponds, basins, wetlands and the flood plain of Lake Minnetonka.

D.7 Surface Water Quality:

D.7.1 City Drainage: The quality of stormwater runoff generated in the city is typical for a mixed land use community consisting of residential, commercial, multi-family, light industrial and public right of way. In the past the City of Spring Park has required or constructed storm water basins where applicable to provide sediment and phosphorous treatment. Basins and proprietary structures have been constructed to meet City of Spring Park and MCWD treatment requirements.

Based on comprehensive plan land use projections the pollutants in the stormwater runoff and the overall quality of the generated runoff will remain unchanged.

There are no illicit discharge outlets into Lake Minnetonka or MPCA permits for discharge in the City of Spring Park.

D.7.2 Lake Minnetonka: The entire lake is under a Fish consumption Advisory for mercury and was added to the "impaired waters" list in 1998. The Minnesota Department of Natural Resources (MNDNR), Minnesota Department of Health (MDH) and Minnesota Pollution Control Agency (MPCA) have collaborated to monitor mercury and PCB contamination in the Lake and continue to do so. More detailed fish consumption advisories have been prepared for Lake Minnetonka and are available from these agencies. Mercury contamination is being addressed by a region wide Total Maximum Daily Load (TMDL) process by the MPCA.

In 2008 the MPCA added several Lake Minnetonka Bays to their "impaired waters list" for Nutrient/Eutrophication Biological Indicators. These include

Halsteads Bay, Stubbs Bay, Jennings Bay and West Arm. West Arm borders the north side of the City and receives about one-half of the storm water generated in Spring Park. Even though the impaired water determination of West Arm can be contributed to water flowing into West Arm from Jennings Bay, the City is required to address the quality of runoff it is discharging into West Arm. The MCWD has established a phosphorous reduction program in their Water Resource Plan, based on watershed wide pollutant load modeling. The MCWD plan identifies phosphorous as the primary nutrient pollutant. All the communities in the Lake Minnetonka watershed have been given phosphorous reduction goals to help restore and protect the water quality of the Lake.

SECTION III

ESTABLISHMENT OF GOALS AND POLICIES

SECTION III – ESTABLISHMENT OF GOALS AND POLICIES

A. Introduction

The City of Spring Park has developed the goals and policies contained in this section to conform with the water resource purposes specified in Minnesota Statute Section 103B.201 and in the MCWD Comprehensive Water Resources Plan. They have been developed to avoid conflict with existing State, Regional, and County goals and policies. The general purposes of the goals and policies are as follows:

- **A.1** Protect, preserve, and use natural surface and groundwater storage and retention systems;
- **A.2** Minimize public capital expenditures needed to correct flooding and water quality problems;
- **A.3** Identify and plan for means to effectively protect and improve surface and groundwater quality;
- **A.4** Establish uniform local policies and official controls for surface and groundwater management;
- **A.5** Prevent erosion of soil into surface water systems;
- **A.6** Promote groundwater recharge;
- **A.7** Protect and enhance fish and wildlife habitat and water recreational facilities;
- **A.8** Secure the other benefits associated with the proper management of surface and groundwater.

The goals and policies developed by the City address water quality, water quantity, erosion and sediment control, wetlands, groundwater, recreation, fish and wildlife, and enhancement of public participation. Outlined below are the goals and policies developed for each of the above topics.

B. Water Quantity and Flooding

Goal: **To limit public capital expenditures necessary to control excessive volumes and rates of runoff.**

Policies:

1. The city will require that proposed stormwater discharges as a result of development be equal to or less than existing conditions. Increase in discharge rates and volumes in areas of development will be allowed provided the downstream facilities can handle the increases. If discharge rates are not specified, the discharge rates will be limited to pre-development rates.

2. Where practical and feasible, stormwater facilities will be developed on a regional basis, rather than on an individual site basis. For land development projects, the City will determine whether regional stormwater facilities are required and the level of City participation in planning and construction.

3. The City will review downstream stormwater-related impacts (within the community) of development proposals and proactively address water resource-related concerns.

4. The design of new stormwater storage facilities will accommodate the 100-year storm event. Lateral storm sewer will be designed for the 10-year storm event. Additional information on stormwater design standards is contained in Sections V and VII.

5. Encourage surface elevations for new buildings to be a minimum of 3 feet above projected 100-year flood levels of basins and the 100 year flood level of Lake Minnetonka.

6. The City will encourage the utilization of natural ponding areas and wetlands for stormwater storage and treatment if not in conflict with the classifications and management strategies of this LWMP, and the Wetland Functional Assessment Summary prepared by the MCWD.

7. The City will encourage the minimization of the amount of direct impervious surface planned for any development. The city will also encourage the use of natural drainage ways for conveying stormwater, provided the drainage ways can properly channel the stormwater flows and volumes before ultimately reaching an existing or proposed storm sewer line.

8. Enhanced infiltration practices will be encouraged, where feasible.

9. Public stormwater facilities will be regularly inspected and maintained as necessary for adequate operations. For private stormwater facilities, the City will require a maintenance agreement, which identifies adequate inspection and maintenance methods for stormwater facilities as a part of the development documents.

10. Wetlands within the City will be protected to assure that the wetland's values for providing water quantity benefits will not be significantly impacted.

11. The City authorizes the MCWD to continue to apply its permitting rules and regulations in the City of Spring Park.

C. Water Quality

Goal: **To maintain or improve the stormwater runoff water quality to Lake Minnetonka and wetlands.**

Policies:

1. In the design and construction of new stormwater conveyance systems, or modification of existing systems, pretreatment of stormwater runoff will be required prior to discharge to Lake Minnetonka or a city wetland. Treatment methods shall include wet detention basins, proprietary structures and other Best Management Practices identified in the current Phase II MPCA Stormwater Construction Permit or equivalent performance standards. Additional information on design standards is contained in Sections V and VII.

2. Ponding areas constructed for water quality improvements shall include a skimmer, if feasible, at the pond outlet to remove oil and other floating materials in stormwater runoff.

3. The City will continue their maintenance program that regularly inspects and maintains public stormwater management facilities to assure their effectiveness per NPDES Phase II Municipal Separate Storm Sewer System (MS4) Requirements. The City will continue to require the owner of private stormwater facilities to execute a maintenance agreement with the City for regular inspection and maintenance of private ponding systems.

4. The City will continue to sweep paved public streets within the community at least three times per year. In the future purchase or rental of street sweeping equipment, the City will give consideration to utilizing street sweepers that are highly effective at removing nutrients from the street.

5. The City will continue to inspect for illegal connections and discharges to the City's Storm Water System per the NPDES Phase II Municipal Separate Storm Sewer System (MS4) permit.

8. The City will require the implementation of erosion and sediment control plans and best management practices for construction and land development activities in accordance with the developer's Storm Water Pollution Prevention Plan (SWPPP) for construction activity requirements as required by the MPCA.

9. For proposed land development adjacent to Lake Minnetonka and wetlands, the City will follow city ordinance requirements for setbacks and buffers.

10. The City will protect wetlands within the community to assure that the wetland functions are maintained and that the wetland's value in providing water quality benefits will not be impacted.

11. The City currently implements a public education program through the MS4 SWPPP permit to foster responsible water quality management practices by City residents and businesses. The public information includes information on proper lawn fertilizing and other lawn chemical use, disposal of lawn waste, and disposal of solid, liquid, and household hazardous waste products. The city will work to accomplish these tasks through partnerships with other organizations such as MCWD, Lake Minnetonka Conservation District, state and regional agencies, adjacent municipalities, City businesses, and private citizen groups.

12. The City will coordinate with MCWD and Metropolitan Council on water quality monitoring programs proposed within the community and on Lake Minnetonka.

13. The goals and policies will be implemented and updated as necessary to meet MCWD and MPCA's TMDL phosphorous reduction requirements.

14. The City authorizes the MCWD to continue to apply its permitting rules and regulations in the City of Spring Park.

D. Erosion and Sedimentation Control

Goal: **To prevent erosion and sedimentation to the maximum reasonable extent.**

Policies:

1. The City will require the preparation and implementation of erosion and sediment control plans and best management practices for construction and land development activities in accordance with the developer's approved Stormwater Pollution Prevention Plan (SWPPP) for construction activity requirements as required by the MPCA. The City may obtain financial surety from the proposed project to assure compliance.

2. The City will enforce the erosion and sediment control plan and best management practices on construction sites to control erosion, soil loss, and sedimentation. Areas adjacent to water bodies and wetlands, and areas known to have high erosion potential will receive highest priority.

3. The City will cooperate with the MCWD, State and Federal requirements for stormwater permits on land alteration activities.

4. The City may prohibit work in areas having steep slopes and/or high erosion potential when the impacts of significant erosion cannot be controlled or mitigated.

E. Wetlands

Goal: **To protect wetlands in conformance with the requirements of the Minnesota Wetlands Conservation Act and rules, and other State and Federal regulations.**

Policies:

1. The City will maintain the MCWD as the Local Governmental Unit (LGU) responsible for wetland management. The City and MCWD will manage wetlands in conformance with the Minnesota Wetlands Conservation Act (WCA) of 1991, its amendments and rules (MN Rules Chapter 8420).

2. The City will notify parties proposing land disturbing activities (i.e.: altering, excavating, filling, and draining) in wetlands of permit requirements from the MNDNR, MPCA, US Army Corps of Engineers (COE) and MCWD.

3. The City will cooperate with the permitting programs of the MNDNR, MPCA, US Corp of Engineers and MCWD for proposed activities within the jurisdictional wetlands.

4. The City will utilize available wetlands inventory information developed by the U.S. Fish and Wildlife Service, MCWD, the MNDNR, and the Metropolitan Mosquito Control District to preliminarily identify the location of wetlands on properties where land alteration is proposed.

5. The City will require a wetlands report identifying jurisdictional wetlands as part of the City approval process for land development. If wetland encroachments are proposed with the development, wetland values and impacts will be evaluated on a case-by-case basis in accordance with the requirements of the WCA and rules.

6. The City will require pretreatment of stormwater runoff prior to discharge to a City waterbody or wetland. Pretreatment methods shall include wet detention basins or other approved Best Management Practices identified in the current Phase II MPCA Stormwater Construction Permit or equivalent performance standards.

7. The City will require wetland impact mitigation take place within the city limits.

8. The City will require placement of native, unmaintained buffer strips adjacent to wetlands to limit erosion and nutrient transportation to the wetlands.

9. The City authorizes the MCWD to be the "local unit of government" responsible for implementing the Minnesota Wetlands Conservation Act within the City of Spring Park.

F. Groundwater

Goal: **To protect groundwater by prudent management of surface waters.**

Policies:

1. The City will cooperate with County and State agencies to inventory and seal abandoned wells and notify its residents of State standards on well abandonment. There are currently no known wells that need to be abandoned in the City.

2. The City will encourage the use of infiltration methods to promote groundwater recharge where groundwater will not be significantly impacted by the land use or stormwater runoff.

3. The City will adhere to policies established by the City's Wellhead Protection Plan (once prepared and approved).

4. The City will continue MS4 inspections of the City's Storm Water System for illicit discharge connections.

5. The City will evaluate the impact new and re-development may have on the groundwater when permitting new construction.

6. The City will cooperate with the MPCA as they administer their pollution control programs.

G. Recreation, Fish and Wildlife

Goal: **To protect and enhance recreational facilities, and fish and wildlife habitat.**

Policies:

1. The City will support the efforts of the MCWD, Local, State, and Federal agencies promoting the public enjoyment, protection of fish and wildlife of the Lake Minnetonka resource.

2. The City will protect wetlands in accordance with the goals and policies of this plan.

3. The City will require native, unmaintained buffer zones around wetlands and ponding areas in new developments were feasible and practical and in conformance with MCWD requirements with restrictive easements for these buffers.

4. The City will encourage its residents to retain vegetation buffers, and open spaces for the benefit of wildlife habitat and protection of the Lake Minnetonka shoreline.

5. The City will guide future land planning activities and encourage community development actions to include shoreline buffers.

H. Lake Minnetonka Shoreline

Goal: **To preserve the natural appearance of existing shoreline areas, promote natural buffers along the shoreline and minimize degradation resulting from shoreline alterations and dredging.**

Policies:

1. To promote natural shoreline buffer creation and shoreline restoration.

2. To enforce ordinance shoreline setbacks and buffer requirements on development projects.

3. To authorize the MCWD to continue to apply its shoreline alteration permitting rules and regulations in the City of Spring Park.

I. Enhancement of Public Participation, Information and Education

Goal: **To educate and inform the public on water resources management Issues and to increase public participation in water management activities.**

Policies:

1. The City will continue the MS4 permit public education program to foster public participation in responsible water quality management practices by residents and businesses. The public education topics will include: fertilizer use and the limited need for phosphorus in fertilizer; lawn care and lawn chemical use; solid, liquid and household hazardous waste disposal; and natural water resource systems and protection methods.

2. The City will coordinate public information and education programs with information and activities from the MCWD, Local, State and Federal agencies.

3. The City will prepare and distribute water resource and water quality related information to residents at least once annually. The City will also have water resource protection information available at City Hall for review by its residents.

4. The City will develop a Water Resources Library available for public review at City Hall. The library will contain resources referenced in this LWMP, public information on water quality practices and activities. The City of Spring Park's MS4 Storm Water Pollution Prevention Plan (SWPPP), and other water resource-related documents and information.

5. The City will consider forming an Environmental Commission, or Advisory Committee to address water resource-related public education and information, solicit public concerns and issues, and develop further water resource management strategies as issues arise.

6. The City will utilize best management practices in the management of City lands, recreational areas, and open space areas and public works facilities.

7. The City will require lawn care companies operating in the community to have phosphorus-free fertilizer available for lawn applications and prohibit phosphorus to be used as fertilizer unless if allowed under Minnesota Statute 18C.60.

SECTION IV

ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

SECTION IV – ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

This section contains an assessment of existing and potential water resource related problems presently known within the City and a description of structural, non-structural, or programmatic solutions that could be used to address or correct the problems. The problems and concerns have been identified by MFRA as part of the land and water resource data collected in the preparation of this LWMP. Additional problems and concerns may be included in this LWMP by City Staff at a later date. Some of the topics discussed herein are repetitive because they are presented according to the State rules and outline for local management plan preparation.

A. Water Quantity and Flooding

A.1 Assessment:

A.1.1 There are no problem erosion areas created by excessive runoff rates or flood prone areas in Spring Park., except for "nuisance ponding" from high intensity rain events.

A.1.2 The City of Spring Park is completely developed except for a few acres of vacant land. New development and redevelopment projects are not expected to increase the runoff rates or volume of stormwater runoff to Lake Minnetonka. To meet phosphorous reductions the volumes of stormwater must be reduced and/or the stormwater treated to remove higher percentages of phosphorous.

A.2 Corrective Action:

A.2.1 Promote infiltration Best Management Practices (BMP's) for new development and redevelopment to maintain runoff rates and reduce volumes of stormwater runoff flowing to Lake Minnetonka.

B. Surface Water Quality

B.1 Assessment:

B.1.1 West Arm (Bay) of Lake Minnetonka is listed as "Impaired" based on Nutrient/Eutrophication Biological Indicators to MPCA's 2008 Total Maximum Daily Limit (TMDL) Report.

B.1.2 The MCWD has set phosphorous load reduction of 4 pounds for the City of Spring Park.

B.1.3 The MPCA is determining the TMDL's for the City of Spring Park and the other communities in the Lake Minnetonka watershed. When the TMDL's are determined the City will implement a strategy and stormwater facility plan to meet the requirements.

B.2 Corrective Action:

B.2.1 Promote stormwater management design that utilizes BMP's, rain water gardens and open space site design that reduce runoff volumes by increasing infiltration.

B.2.2 The city will continue the MS4 stormwater facility inspection and maintenance program. Continue three times a year street sweeping and resident education program on measures to protect the water quality of Lake Minnetonka.

B.2.3 The City shall stringently uphold erosion control standards for land development and house building activities. Incorporate stormwater treatment in system upgrade projects that reduce phosphorous loadings where feasible; Regularly maintain and clean storm sewer ponding, water quality manhole structures and piping facilities.

B.2.4 Continue to reference to MCWD permitting rules and regulations.

B.2.5 Prepare annual reports to the MCWD of the activities undertaken in the previous year in implementing the plan and progress toward meeting phosphorous reductions.

B.2.6 Develop a partnership of cooperation with the MCWD to jointly work towards the goal of protecting and preserving the water quality of the Lake Minnetonka resource.

B.2.7 Develop a CIP strategy and program to construct phosphorous reduction facilities and BMP's.

C. Impacts of Soil Erosion on Water Quality and Quantity

C.1 Assessment:

C.1.1 Construction-related soil erosion can occur on small and large-scale construction projects. Sediment can be discharged off-site or into the City storm sewer system and into Lake Minnetonka.

C.1.2 Erosion of existing slopes and shorelines due to natural causes or landscape activities can adversely impact Lake Minnetonka.

C.2 Corrective Actions:

C.2.1 Erosion and sediment control plans will be prepared, implemented, and enforced on construction projects to prevent erosion, sedimentation and adverse water quality impacts.

C.2.2 Existing eroded slopes and shoreline will be addressed and corrected, when feasible, or as part of permitted projects.

C.2.3 The City will promote natural vegetated shoreline buffers.

D. General Impact of Land Use Practices and Land Development on Wetlands

D.1 Assessment:

D.1.1 Land use practices and land development can have a significant impact on water quality and water quantity entering wetlands.

D.2 Corrective Actions:

D.2.1 Implementation of the stormwater management practices within this LWMP will address potential negative impacts of land development. The City will work with new development proposals to remedy existing drainage problems, where feasible. Implementation and enforcement of erosion control best management practices will protect the quality of surface waters. In addition, the City will also continue to monitor lot coverage amounts for newly developing areas.

E. Adequacy of Existing Regulatory Controls to Manage or Mitigate Adverse Impacts on Public Waters and Wetlands

E.1 Assessment:

E.1.1 Public waters and wetlands are currently regulated by programs administered by the USCOE, MNDNR and by Minnesota's Wetland Conservation Act (WCA). The City of Spring Park has authorized the MCWD the responsibility of being the Local Government Unit (LGU) to administer the WCA requirements.

E.2 Corrective Action:

E.2.1 It is the City's position that the MCWD's regulatory programs along with the City Ordinances, Codes and Guidelines will adequately manage or mitigate adverse impacts on public waters and wetlands.

F. Maintain groundwater quality and protect the public health

F.1 Assessment:

F.1.1 The city has not prepared a well head protection plan.

F.2 Corrective Action:

F.2.1 To prepare a well head protection plan in the future and coordinate stormwater management and regulate land use in the well protection area.

G. Impacts of Stormwater Quality on Recreation, Fish and Wildlife Resources

G.1 Assessment:

G.1.1 Sediment, nutrients and urban pollutants in untreated stormwater discharges adversely impacts water quality, recreation, fish and wildlife resources.

G.1.2 Existing land use activities and land development within the City may adversely impact recreational activities, fish and wildlife resources.

G.1.3 Manicured lawns immediately adjacent to lakes and wetlands allow lawn chemicals to runoff directly into waterbodies and also encourages habitation of lawns by Canada geese with the resulting deposition of waterfowl waste.

G.2 Corrective Action:

G.2.1 Water related recreational activities and impacts to the fish and wildlife resource will be considered in land use decisions and in reviewing land development proposals.

G.2.2 A natural, unmaintained buffer zone will be required around natural or constructed waterbodies as part of future development proposals and buffer zones will be encouraged around all waterbodies, wetlands and watercourses.

G.2.3 City stormwater management practices and implementation of erosion sediment control measures will maintain and improve the Lake Minnetonka water quality increasing the recreational, fishery and wildlife value.

H. Adequacy of Capital Improvements Program to Correct Problems Related to Water Quality, Water Quantity Management, Fish and Wildlife Habitat, Public Waters and Wetland Management, and Recreational Opportunities.

H.1 Assessment:

H.1.1 In the near future, the city will be updating its Capital Improvements Plan (CIP) to further identify and prioritize capital improvements needed within the community. The CIP will also identify funding sources for the

improvements.

H.1.2 The City will be considering a stormwater utility fund, which generates revenues to fund stormwater management projects and programs deemed by the City to be in the public's best interest.

H.2 Corrective Action:

H.2.1 The City will need to identify and prioritize stormwater-related improvements in the CIP and additional methods of project financing. In addition, the City will need to address a variety of water quality and quantity issues in conjunction with land development proposals or City street improvement projects, when feasible.

I. Future Potential Problems Anticipated to Occur Within Next 10 Years Based on Growth Projections and Planned Urbanization

I.1 Assessment:

The 2008 Draft Comprehensive Plan identifies land use areas within the City to the year 2020. Projected development is mainly along County Road 15 as development in vacant lots or re-development. The potential stormwater related problems and issues are anticipated to occur from urbanization.

I.1.1 General – Development and re-development projects add areas of impervious surfaces which have the potential to decrease water quality and increase the volume of runoff during construction and after development is complete. During construction, erosion and sedimentation can degrade water quality and in the longer-term, additional phosphorus and other pollutants may be discharged to waterbodies.

I.1.2 Roadways – New or reconstructed public or private roads in the City have the potential to degrade water quality by roadway erosion and runoff.

I.1.3 Pond and Stormwater Maintenance (Public and Private) - For the facilities to adequately and effectively function, routine inspection and maintenance will be required. City

I.2. Corrective Action:

I.2.1 General – To maintain water quality and protect against erosion during development and after. Projects will need to follow an orderly process of site evaluation, design and project construction. Decreasing impervious surfaces and incorporating infiltration BMP's will be a site design requirement. Construction activities will need to include erosion control practices.

I.2.2 Roadways – Public or private road maintenance and improvement projects will need to address stormwater quantity and quality issues such as wetland protection, erosion and pretreatment of stormwater.

I.2.3 Pond and Storm Sewer Maintenance –For private stormwater treatment systems, maintenance agreements will be established identifying maintenance programs, responsible parties, and consequences for non-compliance.

SECTION V

IMPLEMENTATION PROGRAM

SECTION V – IMPLEMENTATION PROGRAM

This section identifies the various methods, programs and official controls available to the City for the implementation of this LWMP. Many of these items are already in place, and currently utilized by the City. Some of them will require updating to be consistent with MCWD requirements.

A. City Regulatory Controls

The City has various regulatory controls to manage and protect water resources and reduce stormwater-related impacts in the community. The following presents each of the official controls that will be implemented as regulatory controls:

A.1 General City Code of Ordinances.

The City has adopted a "Code of Ordinances." The City will utilize the Ordinances, Codes and Guidelines to regulate new development, re-development and public projects.

- Stormwater Management and Erosion Control Plans Ordinance.
- Stormwater Utility Ordinance (Reserved).
- Floodplain District Ordinance.
- Shoreland Ordinance.
- Wetland Ordinance.
- Subdivision Ordinance.

  The City has adopted a Subdivision Ordinance controlling the land use and development of property within the community. In addition to other items, the ordinance addresses City project review and approvals, development of steep slopes, the necessity of erosion and sediment

control plans, design standards for stormwater facilities and required flowage and drainage easements.

A.2 Wetland Regulation

The City authorizes the MCWD to act as the local Governmental Unit (LGU) under the Minnesota Wetlands Conservation Act to review wetland impacts in accordance with the State wetland law and rules.

A.3 Wetland Protection

The City will cooperate with the MCWD as the permitting authority for wetlands protection in conformance with the State WCA law and rules.

A.4 Dredging

The City authorizes the MCWD with the responsibility for permitting dredging activities in the waters of Lake Minnetonka..The City will coordinate permitting with the MCWD and other agencies having jurisdiction for dredging activities.

A.5 Shoreland Improvements

The City and MCWD will assume responsibility for this activity though its Shoreland Management Area ordinance. The City authorizes the MCWD to permit shore land activity according to their permitting authority.

A.6 MPCA MS4 Permit

The City will continue to implement and work within the framework of the MS4 Permit.

B. Management Programs

The City will implement or encourage the following water resource-related management protection programs and ordinance updates.

B.1 Buffer and Setback Requirements

Update city ordinances with wetland and Lake Minnetonka buffers, easements and setbacks. Coordinate with MCWD and MnDNR requirements. City will encourage the placement of natural buffers around all City waterbodies.

B.2 Public Best Management Practices

Continue maintenance and inspection programs established under the MS4 permit. Implement phosphorous reduction BMP's into Public projects.

B.3 Public Education

The City will continue the current MS4 permit public education program that provides water resource protection information to the community and to develop additional strategies necessary to protect the City's water related amenities.

C. Storm water Design and Performance Standards

The City adopts the MCWD "Rules and Regulations." The City will forward preliminary plats for future development/redevelopment projects to the MCWD for review.

D. Phosphorous Reduction Strategy's and Program

The City will be establishing and implementing a phosphorous reduction strategy's and programs that identifies voluntary actions, maintenance activities, public improvements and re-development drainage requirements that are needed to meet the MCWD's phosphorous loading reduction requirements. The plan will be based on phosphorous reduction strategies including city maintenance program BMP's, voluntary BMP programs such as natural shoreline buffer strips, phosphorous removal BMP's for re-development projects and BMP's for city public improvement projects. The strategy will include phosphorous reduction BMP's to be incorporated into roadway, utility and other public

improvement projects as they occur. Privately installed improvements will be consistent with the management strategies identified in the LWMP. Refer to Appendix C for the phosphorous reduction analysis and recommendations for a phosphorous reduction strategy programs and plan.

The City's phosphorous reduction strategies and plan will be re-evaluated as the MPCA finalizes its TDML Report. Preparation of the Report is scheduled to begin in 2009 and be completed in 2013. The TMDL report process will involve hydrology/hydraulic studies and public participation through out the report preparation period. The city will be able to monitor and participate in the process. After the TMDL's are determined the MPCA will allocate phosphorous reduction loadings for the cities and watersheds draining to Lake Minnetonka. The city of Spring Park will be given a phosphorous reduction requirement. The cost of the reduction program will depend on the phosphorous reducing BMP's the city needs to implement to meet the reduction goals. The MCWD is being proactive with their four pound phosphorous reduction requirement for Spring Park. Meeting this requirement and implementing the phosphorous reduction program should offset the some of the impacts of the future MPCA phosphorous reduction requirements.

E. Future Public Projects

The City is investigating projects to improve the water quality of Lake Minnetonka. The City would like to partner with the MCWD to assist in financing these projects. One project under consideration is a sediment control manhole structure on Dickson Avenue to treat local street and parking lot runoff through sediment removal. There are other storm sewers and areas in the City of Spring Park that are similar to Dickson Avenue that could be treated to help improve the water quality of Lake Minnetonka. These are potential future projects with no definite schedules or current funding sources.

SECTION VI

IMPLEMENTATION PRIORITIES AND FINANCIAL CONSIDERATIONS

SECTION VI – IMPLEMENTATION PRIORITIES AND FINANCIAL CONSIDERATIONS

A. Implementation Priorities

This LWMP has presented an implementation program identifying those various regulatory controls, management programs and potential capital improvements that are necessary to address City surface water resource related needs and funding capabilities. Table 4 below prioritizes the implementation program. Capital improvements will need to be implemented and funded by private parties or the City based upon City growth, demand and available resources.

TABLE 4. LWMP IMPLEMENTATION PROGRAM PRIORITIES

Ranking	Implementation Program Description
1	Obtain MCWD and Metropolitan Council approval of the Local Water Management Plan and City Comprehensive Plan
2	Update City Ordinance and Regulatory Agreements to be consistent with MCWD policies, rules and regulations, including shoreline setbacks and buffers, "memorandum of understanding, stormwater management ordinance
3	Evaluate and prepare a Phosphorous Reduction Strategy and Plan to address the reduction of phosphorous flowing to Lake Minnetonka. Coordinate with MCWD. Re-evaluate the Plan as the MPCA develops the TMDL requirements.
4	Evaluate developing a Stormwater Utility Fee to provide a funding source for stormwater management facilities that reduce phosphorous loadings to Lake Minnetonka and provide for general stormwater improvements.
5	Continue evaluation and updating of the City's MPCA MS4 permit to best provide measures that protect and preserve the Lake Minnetonka resource.
6	Acquire easements for existing ponding areas, stormwater facilities and for access to outlet control structures if they do not exist.

B. Financial Considerations

Implementing this LWMP will have financial impacts on the City. The paragraphs below describe the implementation item and the anticipated cost of the associated regulatory control or management program. These are not necessarily new costs to be budgeted by the City since many of these costs are already being charged back to developments or included within the current City budget. The anticipated costs of capital improvements are not included in this LWMP but can be determined for future city Capital Improvements Plans. The subsection to follow identifies various methods available to the City for funding these programs and future capital improvements.

B.1 The City will review site plans and other proposed projects for conformance with this LWMP. These costs will generally be recouped from new developments.

B.2 The City will inspect and enforce erosion control measures identified in this LWMP. Permit fees associated with building activities will recover portions of these costs.

B.3 The City will inspect municipal stormwater basins, ponds and outfalls every other year at a minimum. The City will also inspect all structural pollution control devices every year. Structural Devices include trap manholes, sump manholes, floatable skimmers and traps, and separators. These costs are associated with the MS4 permit. As of 2009, the City budgets $10,000 per year for maintenance, repair and upgrades related to surface water management, and $500 per year for Engineering related costs. Actual expenditures for 2008 were approximately $7,800. Costs for construction of new stormwater facilities will require additional financial resources based on specific needs.

B.4 Acquisition of easements around new ponding areas, stormwater facilities or for access to outlet control structures will be identified during the City project review process. Easements can potentially be obtained during the project review process, at no cost, as a requirement for City and MCWD approvals. Acquiring easements on existing structures will incur acquisition costs. The additional cost for this item will vary greatly based on the value and use of property within the easement areas.

B.5 The City will develop and implement a public information and education plan. The plan is part of NPDES Phase II requirements. The City will work to share educational resources with other concerned parties such as the MCWD, Lake Minnetonka Conservation District, County and State Agencies. Costs for library and educational materials will vary with type of materials and sources.

B.6 Construction of capital improvement plan projects addressing known surface water resource problems or phosphorous reduction projects require engineering design, construction documents and property easements. For phosphorous reduction facilities the phosphorous reduction removal by the facility needs to be calculated and reported to the MCWD as a deduct against the phosphorous load limit requirement. Specific improvements will need to be determined based on need, cost and availability of funds.

Funding for storm sewer projects can come from the City's General fund, or a stormwater utility fund (if established)

C. Funding Sources

The City currently has two funding sources available to pay for the regulatory controls, management program and capital improvements identified in this LWMP. They include

general tax revenues and special assessments. While general tax revenues can likely fund the regulatory and management programs, special assessments will generally be required to fund the larger capital improvements projects.

Several other revenue sources available to the City are the establishment of a stormwater utility fee, and a stormwater area charge. A stormwater utility fee has been considered but not adopted. Stormwater area charges are often assessed to development projects to fund necessary stormwater facilities on the property or necessary improvements downstream to facilitate the development. The City will need to review each of these potential funding sources and determine the most appropriate and acceptable course of action for each program or project.

The MCWD operates a stormwater improvement funding program. Funds for City stormwater projects or portions of projects may be available if the project meets MCWD criteria and is selected for funding.

SECTION VII

STORWATER MANAGEMENT PLAN AND EROSION CONTROL STANDARDS FOR PERMITTING

SECTION VII – STORMWATER MANAGEMENT PLAN AND EROSION CONTROL STANDARDS FOR PERMITTING

All new construction or re-development projects with land disruption will require review by the City and the MCWD. The permitting requirements for projects vary depending on size, impacts to the environment and complexity. A determination for MCWD permitting will be made by the District's staff. Determination for City permitting will made by City staff. The requirements for stormwater management plans and erosion control plans must meet the following standards: All construction sites regardless of size will be required to provide and maintain minimum erosion control measures during construction.

A. Stormwater Management Plan Standards for Permitting:

A.1 Minnehaha Creek Watershed District (MCWD): The standards for permitting include:

- District Rules B, Erosion Control;
- District Rule C, Flood Plain Alteration;
- District Rule D, Wetland Protection;
- District Rule E, Dredging;
- District Rule F, Shoreline and Streambank Improvements;
- District Rule G, Waterbody Crossings;
- District Rule N, Stormwater Management.

Refer to Appendix C for 2008 MCWD Rules and Regulations. Refer to the MCWD for latest revisions to the Rules and Regulations.

A.2 City of Spring Park Standards: The Standards for permitting and guidelines to land use and site design include: Refer to the City of Spring Park Stormwater Management Ordinance, Zoning Ordinance and Spring Park Comprehensive Plan.

B. Erosion Control Standards for Permitting

B.1 Minnehaha Creek Watershed District (MCWD): The standards for permitting include:

- District Rules B, Erosion Control.

Refer to Appendix C for 2008 MCWD Rules and Regulations. Refer to the MCWD for latest revisions to the Rules and Regulations.

B.2 City of Spring Park Standards: The Standards for permitting and guidelines to land use and site design include: Refer to the City of Spring Park Stormwater Management Ordinance, Zoning Ordinance and Spring Park Comprehensive Plan

B.3 General Standards for Erosion Control during construction:

B.3.1 The plan shall show proposed methods of retaining waterborne sediments on-site during the construction period and proposed restoration, covering or re-vegetation after construction.

B.3.2 The plan shall show locations of any temporary sediment basin(s). Temporary Sedimentation Basins shall be designed in accordance with Part III.B of the MPCA "Storm Water Discharge associated with Construction Activity" (MN R100001) permit.

B.3.4 Sites with high erosion potential characterized by steep slopes or erodible soil will be required to provide site-specific construction recommendations by a Soils Engineer for City review. Steep slopes shall be defined as areas of 12% or more slope. In addition, a financial surety may be required to ensure performance.

` B.3.5 If infiltration/filtration basins are proposed for the construction site, a note must appear on the plan stating; “The infiltration basin area(s) cannot be used to treat construction site runoff, and shall not be constructed to final grade until the contributing drainage area has been fully stabilized to the satisfaction of the engineer.” In addition, the following statement shall also appear; “ The proposed infiltration basins shall be roped off as not to allow heavy construction site traffic to enter any basin and the basins shall be staked off before any construction can begin”

B.3.6 If any disturbed soil is located within 200 lineal feet of Lake Minnetonka shoreline, wetland or stormwater management facility and the area has a continual positive slope to the water body, the exposed area must provide temporary erosion protection, or permanent cover according to Part IV.B.2 of the MPCA MN R100001 Permit. Those areas requiring temporary erosion protection or permanent cover shall be identified on the plans.

B.3.7 All sediment control practices shall be installed according to Part IV.C of the MPCA MN R100001 Permit.

B.3.8 The erosion control plan shall provide rock construction entrances for all entrances where heavy construction traffic will enter. Those entrances must be clearly identified on the plan.

B.3.9 Proposed design, suggested location and phased implementation of effective, practicable erosion control measures for plans shall be designed, engineered and implemented to achieve the following results:

a. Prevent gully and bank erosion: and,

b. Limit total off-site permissible annual aggregate soil loss for exposed areas resulting from sheet and rill erosion to an annual, cumulative soil loss rate not to exceed 0 tons per acre annually.

B3.10 The City shall receive documentation that the NPDES General Storm Water Permit for Construction Activity application has been approved from the MPCA, as well as any other approved applications, as required, for the construction site, such as the Subdivision Registration form, Permit Transfer/Modification form, and the Notice of Termination form.

SECTION VIII

AMENDMENT PROCEDURES

SECTION VIII – AMENDMENT PROCEDURES

It is the City's intention to have this LWMP reviewed and approved by the Minnehaha Creek Watershed District (MCWD) and Met Council in accordance with Minnesota Statutes. After approval, it will be adopted by the City Council and incorporated into the City's Water Resource Library.

This LWMP has been prepared to extend through the year 2017. At that time the MCWD "Comprehensive Water Resources Plan" is scheduled for its ten year update. The LWMP may need to be updated with amendments, in the interim to conform to the pending MPCA determined TMDL's for Lake Minnetonka scheduled to be issued in 2013 and any MCWD issued updates to their comprehensive plan.

If the City proposes changes to this LWMP before year 2017, the changes and their impacts will be determined by the City. The general descriptions of the changes and the associated review and approval requirements are presented as follows:

Changes would include small adjustments to subwatershed district or subdistrict boundaries or other minor changes that would not significantly affect the rate or quality of stormwater runoff discharged across the municipal boundary or significantly affect high-water levels within the City. Minor changes also include revisions made to the stormwater related Capital Improvements Program to best meet the City's phosphorous loading reduction requirements, water resource needs and financial considerations. For proposed changes, the City will prepare a document, which defines the change and includes information on the scope and impacts of the change. The document will be forwarded to the MCWD for their records. The minor change will be implemented after the document is adopted by the City Council.

ACRONYM IDENTIFICATION

BMP-Best Management Practice

BWSR-Minnesota Board of Water and Soil Resources

CIP-Capital Improvements Plan

CN-Curve Number

DWSMA-Drinking Water Supply Management Area

FEMA-Federal Emergency Management Agency

FIRM-Flood Insurance Rate Map

FIS-Flood Insurance Study

HSG-Hydrologic Soil Group

HWL-High Water Level

IDF-Intensity Duration Frequency

ISTS-Individual Sewage Treatment Systems

LGU-Local Government Unit

LMCD-Lake Minnetonka Conservation District

MCWD-Minnehaha Creek Watershed District

MDH-Minnesota Department of Health

MNDNR-Minnesota Department of Natural Resources

MFRA-McCombs Frank Roos and Associates

MNRRA-Mississippi National River and Recreation Area

MPCA-Minnesota Pollution Control Agency

NPDES-National Pollution Discharge Elimination System

NRCS-National Resource Conservation Services

NWI-National Wetland Inventory

NWL-Normal Water Level

OHWL-Ordinary High Water Level

PWI-Protected Waters Inventory

RD-River Development

SCS-Soil Conservation Service

LWMP-Local Water Management Plan

SWPPP-Storm Water Pollution Prevention Plan

SWWD-South Washington Watershed District

TMDL-Total Maximum Daily Load

USCOE-United States Corps of Engineers

USDA-United States Department of Agriculture

WCA-Wetland Conservation Act

WMO-Watershed Management Organization(s)

APPENDIX A

WETLANDS FUNCTIONS AND VALUES, STUDY AND INVENTORY

Minnehaha Creek Watershed District

Improving Quality of Water, Quality of Life

MEMORANDUM

Date: December 9, 2002

To: John Karwacki, Schoell & Madsen

From: Jim Hafner

RE: Wetland Functions and Values for Spring Park

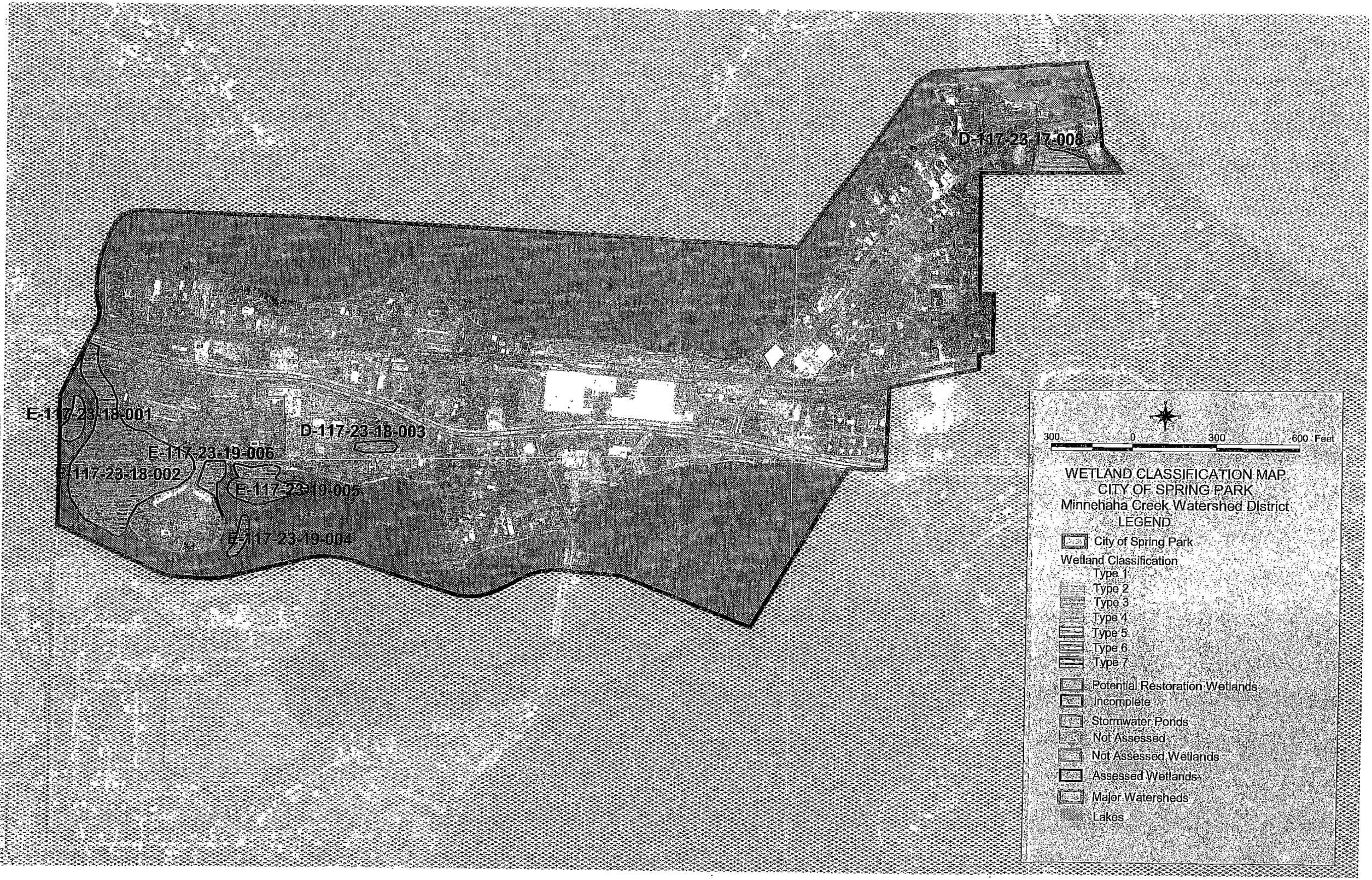
Here is a table of the wetland functions and values for the wetlands within the City of Spring Park and a map of the wetlands inventoried. Please keep in mind that the table and map are subject to revision and are not considered to be a final product. We will let the City know when the revised data is complete.

Wetland Community and Hydrology Summary
City Of Spring Park
Minnehaha Creek Watershed District

Wetland ID	*Subwatershed*	*Wetland Size (acres)*	*Wetland Type*		*Plant Community*	*Hydrologic Setting*	*Topographic Setting*
			Cowardin	*Circular39*			
D-117-23-17-008	Lake Minnetonka	8.174	PEMF	Type 3	Shallow Marsh	Depressional	Flow-through
D-117-23-18-003	Lake Minnetonka	0.515	PEMC	Type 3	Shallow Marsh	Depressional	Tributary
E-117-23-18-001	Lake Minnetonka	0.86	L2EMH	Type 4	Deep Marsh	Lacustrine Fringe	Shoreland
E-117-23-18-002	Lake Minnetonka	12.388	L3EMH	Type 4	Deep Marsh	Lacustrine Fringe	Shoreland
E-117-23-19-004	Lake Minnetonka	0.526	L2EMH	Type 4	Deep Marsh	Lacustrine Fringe	Shoreland
E-117-23-19-005	Lake Minnetonka	2.496	L2EMH	Type 4	Deep Marsh	Lacustrine Fringe	Shoreland
E-117-23-19-006	Lake Minnetonka	0.825	L2EMH	Type 4	Deep Marsh	Lacustrine Fringe	Shoreland

Wetland Functional Assessment Summary
City Of Spring Park
Minnehaha Creek Watershed District

Wetland ID	*Vegetative Diversity/ Integrity*	*Hydrologic Regime*	*Flood Storage*	*Downstream Water Quality*	*Wetland Water Quality*	*Shoreline Protection*	*Ground-Water Interaction*	*Wildlife*	*Fisheries*	*Aesthetics, Recreation, Education*	*Commercial*	*Wetland Restoration Potential*	*Wetland Stormwater Sensitivity*	*Stormwater Treatment Needs*
D-117-23-17-008	Low	High	High	Exceptional	Moderate	Not Applicable	Combination Discharge, Recharge	Moderate	Low	Moderate	Not Applicable	Not Applicable	Moderate	Medium
D-117-23-18-003	Low	Moderate	Moderate	Exceptional	Moderate	Not Applicable	Combination Discharge, Recharge	Moderate	Low	Moderate	Not Applicable	Not Applicable	Moderate	Medium
E-117-23-18-001	Moderate	High	High	Exceptional	Moderate	High	Combination Discharge, Recharge	Moderate	Exceptional	High	Not Applicable	Not Applicable	Moderate	Medium
E-117-23-18-002	Low	High	High	Exceptional	Moderate	High	Combination Discharge, Recharge	Moderate	Exceptional	High	Not Applicable	Not Applicable	Moderate	Medium
E-117-23-19-004	Low	High	High	Exceptional	High	High	Combination Discharge, Recharge	Moderate	Exceptional	High	Not Applicable	Not Applicable	Moderate	High
E-117-23-19-005	Low	High	High	Exceptional	Moderate	High	Combination Discharge, Recharge	Moderate	Exceptional	High	Not Applicable	Not Applicable	Moderate	Medium
E-117-23-19-006	Low	High	High	Exceptional	Low	High	Combination Discharge, Recharge	Moderate	Exceptional	Moderate	Not Applicable	Not Applicable	Moderate	Low



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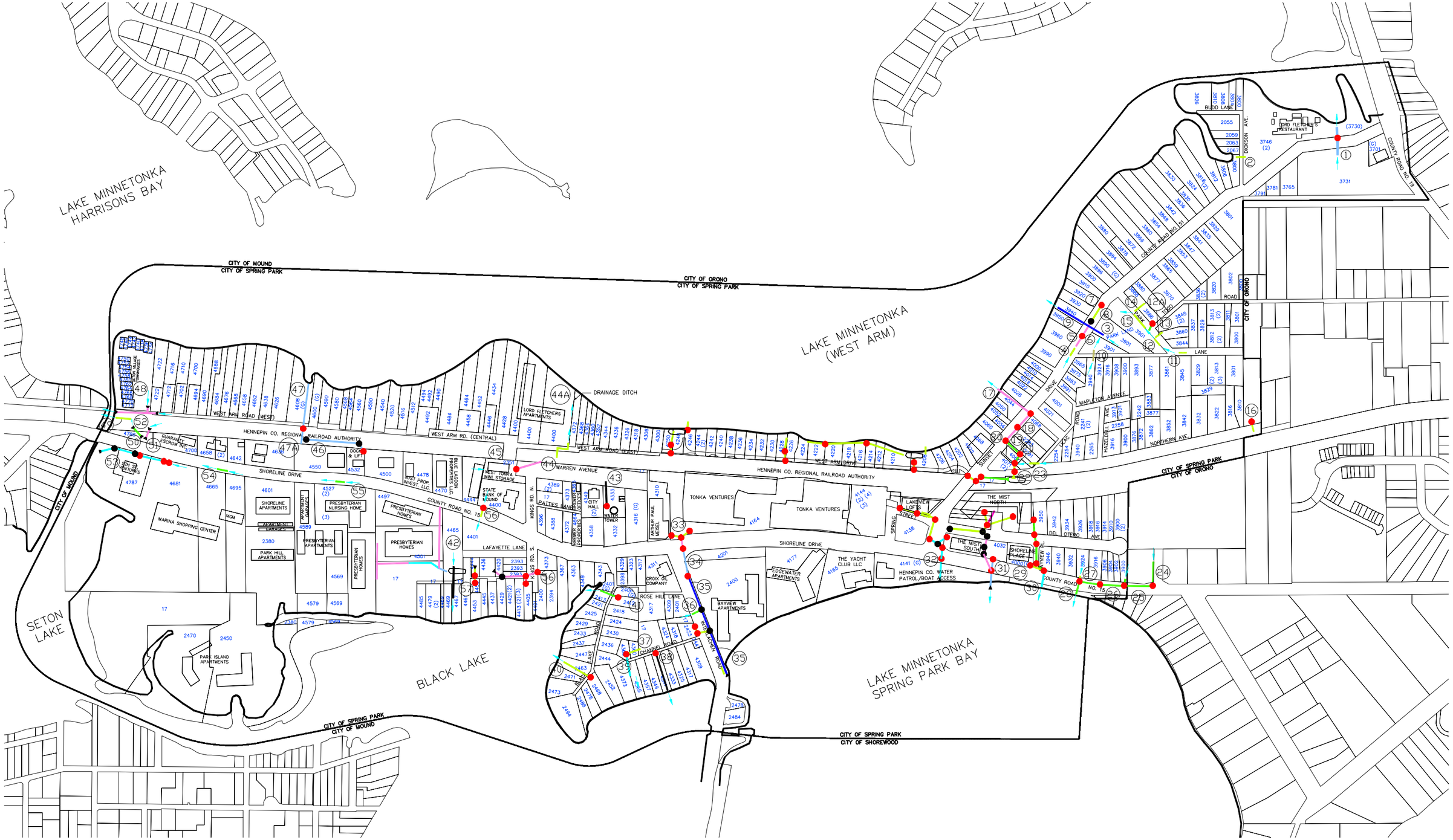
APPENDIX B

STORM SEWER MAP AND INVENTORY



		Client: SPRING PARK On Lake Minnetonka — CITY OF SPRING PARK, 4349 Warren Ave., Spring Park, MN 55384-9711, (952) 471-9051	Project Name/Location: SPRING PARK UTILITY MAPPING SYSTEM
			Sheet Title: STORM SEWER BASE MAP
			Date: 02/24/09
			Sheet: Cover

SPRING PARK
STORM SEWER INVENTORY
PAGE 1

STRUCTURE NO.	LOCATION	SIZE-TYPE	LENGTH	MAINTENANCE BY	TYPE OF DRAINAGE SYSTEM	EXISTING EASEMENT STATUS	CONDITION /REMARKS
1	County Road. 51	24" CMP	61' – 58'	County	Road Culvert	None	Good condition. Inlet – restricted by snow fence and leaves. Outlet – under water or behind wall shoring boards.
2	Dickson Lane	12" CMP	25'	City	Road Culvert	R.O.W.	Fair condition. Inlet – rework blacktop. Outlet – restricted by brush, weeds and silt.
3	County Road 51	Unknown-CMP		City	Road Culvert	R.O.W.	Fair condition. Flat grade to lake with standing water. ½ filled with dirt at inlet.
4	County Road 51	12" CMP	24'	City	Driveway Culvert	R.O.W.	Fair condition. Ditch to north needs excavation – pipe is ¾ filled with dirt and silt.
5	County Road 51	18" RCP	48'	City	Storm Sewer System	R.O.W.	Good condition.
6	County Road 51	18" RCP	64'	City	Storm Sewer System	R.O.W.	Good condition. Pipe is half-filled with silt.
7	County Road 51	18" RCP	11'	City	Storm Sewer System	R.O.W.	Fair condition. Pipe is half-filled with silt
8	County Road 51	12" CMP	108'	City	Storm Sewer System	R.O.W.	Unknown condition. Pipe is full of water.
9	County Road 51	30-1/2" CMP	160'	City	CMP Swale Pipe to Lake	None	Poor condition. Pipe swale is full of water.
10	Lift Station 2	15" CMP	36'	City	Drainage Culvert	City	Fair condition. Pipe is pulling apart.
11*	Park Lane	12" CMP	--	City	Driveway Culvert	R.O.W.	Poor condition. Pipe nearly plugged with silt.
12*	Park Lane	12" CMP	--	City	Driveway Culvert	R.O.W.	Poor condition. Pipe nearly plugged with dirt.
12A	Park Lane	12" CMP	35'	City	Road Culvert	R.O.W.	Fair condition.
13*	Park Lane	15" CMP	40'	City	Road Culvert	R.O.W.	Fair condition. Inlet catch basin plugged, outlet (trees).
14	Park Lane	12" CMP	36'	City	Road Culvert	R.O.W.	Fair condition. Should have inlet basin, outlet deformed.
15	Park Lane	12" CMP	120'	City	Drainage Culvert	R.O.W.	Fair condition.
16	Northern Avenue	Unknown-CMP	29'	City	Road Culvert	R.O.W.	Unknown condition. Pipe filled with water.

SPRING PARK
STORM SEWER INVENTORY
PAGE 2

STRUCTURE NO.	LOCATION	SIZE-TYPE	LENGTH	MAINTENANCE BY	TYPE OF DRAINAGE SYSTEM	EXISTING EASEMENT STATUS	CONDITION /REMARKS
17	Sunset	18" RCP	189'	City	Storm Sewer System	City	Unknown condition. Outlet – restricted by willow tree and roots.
18	Sunset	24" RCP	110'	City	Storm Sewer System	R.O.W.	Good condition.
19	Sunset	18" RCP	94'	City	Storm Sewer System	R.O.W.	Good condition.
20	Boat Works	15" RCP	116'	Cit	Storm Sewer System	None	Good condition. Catch basin inlet restricted by debris. Storm sewer pipe run under corner of building.
21	Boat Works	15" RCP	69'	City	Storm Sewer System	None	Unknown condition. Catch basin inlet restricted by shrubs and filled with debris. Retaining wall leaning over catch basin.
22	Northern Avenue	12" CMP	50'	City	Storm Sewer System	R.O.W.	Poor condition. Inlet restricted by brush and trees. Horizontal/vertical bends in pipe.
23	Northern Avenue	12" CMP	46'	City	Driveway Pipe	R.O.W.	Good condition. Inlet is bent, debris restricting flow pipe.
24	Omit**						
25	Omit**						
26	Omit**						
27	Omit**						
28	Omit**						
29	Omit**						
30	Omit**						
31	Omit**						
32	Omit**						
33	County Road 15	8" Conc. Tile	64'	Private	Storm Sewer System	None	Fair condition. Catch basin west side of Warren is abandoned.
34	County Road 15	24" CMP	212'	County	Storm Sewer System	R.O.W.	Good condition.
35	Interlachen Road	30" RCP	550'	County	Storm Sewer System	R.O.W.	Good condition. Outlet area needs some grading maintenance.
36	Interlachen Road	15" CMP	47'	City	Storm Sewer System	R.O.W.	Fair condition. Inlet is restricted by rock and trees.
37	Channel Road	Unknown-CMP	28'	City	Storm Sewer System	R.O.W.	Poor condition. Catch basins need new inlet grates, full of water.

STRUCTURE NO.	LOCATION	SIZE-TYPE	LENGTH	MAINTENANCE BY	TYPE OF DRAINAGE SYSTEM	EXISTING EASEMENT STATUS	CONDITION /REMARKS
38	Channel Road	Unknown-CMP	180'	City	Storm Sewer System	None	Very poor condition. Pipe is separated in 2 places. Outlet submerged – 10' in lake.
39	Channel Road	21" RCP	90'	City	Storm Sewer System	City	Unknown condition. 125' open ditch to lake.
39A	Channel Road	12" CMP	70'	City	Storm Sewer System	City	Constructed, 1990.
40	Black Lake Road	12" CMP	166' ±	City	Storm Sewer System	City	Repaired, 1988.
41	Black lake Road	15" CMP	90' ±	City	Storm Sewer System	None	Good Condition.
42	Omit***						
43	City Hall	--	55' ±	City	Storm Sewer System	City	Very poor condition. Outlet restricted. Catch basin filled with silt and water. Overflow is sanitary sewer inside City hall.
44	Burlington Northern Railroad	24"	--	City	Railroad Culvert	R.R. Permit	Poor condition. Inlet and outlet badly restricted with silt 12" under railroad tracks; 30' outlet. Open ditch to lake to flat grade that restricts outlet flow to lake.
44A	Burlington Northern Railroad	--	300' ±	City	Drainage Ditch	None	Very poor condition. Open ditch to lake to flat grade that restricts outlet flow to lake.
45	Warren Road	18" RCP	--	City	Street Culvert	R.O.W.	Poor condition.
46	Burlington Northern Railroad	24" RCP		Private	Detention Storage System	R.R. Permit R.O.W.	Good condition.
47	Burlington Northern R.R., West Arm Road	24" CMP	30' ±	City	Storm Sewer System	R.R. Permit	Fair Condition.
47A	Burlington Northern	24" CMP/RCP	100' ±	City	Storm Sewer System	City	Poor condition. Outlet apron displaced b lake erosion. First 50' of RCP displaced by frost heave.

STRUCTURE NO.	LOCATION	SIZE-TYPE	LENGTH	MAINTENANCE BY	TYPE OF DRAINAGE SYSTEM	EXISTING EASEMENT STATUS	CONDITION /REMARKS
48	West Arm Road	18" CMPA	250' ±	City/Private	Drainage Culvert	City	Good condition.
49	West Arm Road	12" CMP	41'	City	Street Culvert	R.O.W.	Very poor condition. Outlet restricted with silt.
50	West Arm Road	15" RCP	66'	City	Street culvert	City	Good condition.
51	West Arm Road	18" RCP	42'	City	Street Culvert	City	Good condition.
52	West Arm Road	--	--	City	Detention Pond	City	Good condition.
53	County Road 15	21" RCP	360'	City	Storm Sewer System	City	Good condition.
54	Lake Shore Village	18" RCP	290' ±	City	Storm Sewer System	City	Constructed 1988.
55	Lake Shore Village	18" RCP	200'	City	Storm Sewer System	City	Constructed 1988.
56	Lafayette Lane	Detention Basin		City	Storm Water Detention	City	Constructed 1988.
57		Detention Basins		Association	Storm Water Detention	City	Constructed 1996.
58		Storm Sewer 12" RCP		City	Storm Sewer System	City	Constructed 1996.

R.O.W.= Right of Way
R.R. = Railroad

*The outlet and inlet inverts to these pipes and culverts are below the ground elevation of the existing ditch, restricting the drainage through these structures.
**Replaced by County Road 15 Storm Sewer Improvements.
***Replaced by Lafayette Lane Detention Basin.

APPENDIX C

MINNEHAHA CREEK WATERSHED DISTRICT RULES AND REGULATIONS

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISION
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE A: PROCEDURAL REQUIREMENTS

1. APPLICATION REQUIRED. Any person undertaking any activity for which a permit is required by these rules shall first submit for review a permit application, engineering design data and such other information to the District as may be required by these rules to determine whether the improvements are in compliance with the criteria established by these rules. All permit applications must bear the original signature of the landowner. An interested person may intervene in a permit proceeding by filing a written request to intervene with the District before the final decision on the application. The request shall state the nature of the person's interest and a copy shall be hand-delivered to the applicant or received at the applicant's address stated in the application before the time of the final decision. An intervener shall have the rights of a party in the proceeding before the District.

2. FORMS. Permit applications shall be submitted using forms provided by the District, including a variance form if a variance is requested, which you can find on the Permit Applications page. Permit applications shall be addressed to:

Minnehaha Creek Watershed District
18202 Minnetonka Blvd.
Deephaven, MN 55391

3. ACTION ON PERMIT APPLICATION. The District shall act within 45 days of receipt of an application and set of exhibits in compliance with the submittal requirements of these rules, as determined by the District. Permit decisions will be made by the Board except as provided for in specific rules and as delegated to staff by written resolution. The notification requirements of paragraphs 5 and 6 of this rule will continue to apply to permit actions delegated to staff by Board resolution. The Board will review a staff permit decision on the applicant's request. Variance requests will be acted on by the Board pursuant to Rule I. The District may approve or deny an application and, if approving, may impose reasonable conditions. Conditions may include, as otherwise consistent with the rules, requirements for sureties, maintenance agreements and declarations and may require that those documents be properly executed or recorded before permit issuance. The District may reconsider a permit if it finds that a material error or misrepresentation was made in the application and that the correct information was available at the time of the application.

4. CONFORMITY WITH MUNICIPAL PLAN. The District will review applications for permits involving land development only after the applicant demonstrates that the plan has received preliminary approval from each municipality in which development is to take place. The requirement of preliminary municipal approval shall mean:

(a) Preliminary plat approval if required for the development; or

(b) If plat approval is not required, approval by the municipal planning commission or a written statement from the responsible municipal official that, on preliminary review, the development appears to meet municipal approval requirements.

5. NOTIFICATION PROCESS. Persons applying for a District permit must supply a certified list of property owners and mailing labels for each property on that list obtained from Hennepin County or Carver County who reside within 600 feet of a parcel on which the proposed project is to occur. District staff will send notice of the proposed project to the individuals on the mailing list for the applicant at the applicant's expense. A copy of the list will be retained with the application at the District office. The application will not be processed until the list has been submitted to the District. Notification is required for a permit application submitted under the following District Rules:

Rule B - Erosion Control

Rule C - Floodplain Alteration

Rule D - Wetland Protection

Rule E – Dredging

Rule F - Shoreland and Streambank Improvement

Rule G - Stream and Lake Crossings

Rule N - Stormwater Management

Notification is not required for a fast-track permit under Rule B, C, E or F.

6. ALTERNATIVE NOTIFICATION. The District, on written request, may approve alternative notification for any of the following projects:

(a) A linear project, including but not limited to a road, sidewalk or trail, one-half mile or more in length.

(b) A project on a parcel or contiguous parcels with an area of 100 acres or more, where no more than five percent of the area will be disturbed, provided the disturbed area does not include a wetland.

(c) A project where the applicant proposes to combine notification under this rule with notification required under the approval procedures of another governmental body.

The applicant must demonstrate that an alternative means of notification will provide adequate notice to residents near the proposed activity.

7. TIME FOR SUBMITTAL. A complete permit application which includes all required exhibits shall be received by the District at least 21 full days prior to the scheduled meeting date of the Board of Managers. Late submittals or submittals with incomplete exhibits will be scheduled to a subsequent meeting date.

8. TABLED PERMITS. Permit applications tabled at a board meeting due to revisions needed for compliance with District rules will be addressed at the next board meeting if the revisions are submitted within 3 working days of being tabled. Otherwise, permit applications and resubmittals will be treated pursuant to paragraph 7 of this rule. The District may require re-notification pursuant to paragraphs 5 and 6 if resubmittal constitutes a substantial change in the proposed project or if 90 days have elapsed between the date of the Board's action to table and the date of resubmittal.

9. PERMIT RENEWALS AND TRANSFERS. A permit is valid for a one year period from the date the applicant is advised in writing that the District has approved the permit unless it is otherwise suspended or revoked. To renew or transfer a permit, the permittee must notify the District in writing, prior to the permit expiration date, of the reason for the renewal or transfer request. The District may impose different or additional conditions on a renewal or deny the renewal in the event of a material change in circumstances other than a change in District rules. A transfer shall be approved unless the District finds that the proposed transferee has not demonstrated the ability to perform the authorized work in accordance with the conditions of the permit, in which case the Board District may impose conditions on or deny the transfer. Permit transfer does not extend the permit term.

10. REGULAR MEETINGS. Regular meetings of the Board of Managers are conducted on the first and third Thursday of each month, no earlier than 6:00 p.m.

11. BASIS FOR DECISIONS. All interpretations of these rules and permit decisions under these rules will incorporate and be consistent with District purposes set forth in sections 103B.201 and 103D.201 of the Minnesota Statutes.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE B: EROSION CONTROL

1. POLICY. It is the policy of the Board of Managers to require preparation and implementation of erosion control plans for land disturbing activities, in order to limit erosion from wind and water; reduce flow volumes and velocities of stormwater moving off-site; reduce sedimentation into water bodies; and protect soil stability during and after site disturbance. These measures should reflect the following principles:

(a) Minimize, in area and duration, exposed soil and unstable soil conditions.

(b) Minimize disturbance of natural soil cover and vegetation.

(c) Protect receiving water bodies, wetlands and storm sewer inlets.

(d) Retain sediments from disturbed properties on site.

(e) Minimize off-site sediment transport on trucks and equipment.

(f) Minimize work in and adjacent to water bodies and wetlands.

(g) Maintain stable slopes.

(h) Avoid steep slopes and the need for high cuts and fills.

(i) Minimize disturbance to the surrounding soils, root systems and trunks of trees adjacent to site activity that are intended to be left standing.

(j) Minimize the compaction of site soils.

2. PERMIT REQUIREMENT. Unless specifically excepted by section 3 of this rule, land-disturbing activity shall require a permit incorporating an erosion control plan approved by the District and shall be conducted in accordance with that plan. A fast-track permit may be issued for routine erosion control projects on a finding that the application:

(a) Complies with the submission requirements of section 4 of this rule;

(b) Includes an erosion control plan that:

(1) Complies with section 5 of this rule;

(2) Provides for maintenance and inspection in accordance with section 9 of this rule; and

(3) Provides that there will be no stockpiling of more than 50 cubic yards of soil or other material subject to erosion by wind or water that is not covered, vegetated, enclosed, fenced on the down gradient side or otherwise effectively protected from erosion.

Any request for a variance from a requirement of this rule must be decided by the Board of Managers.

3. EXCEPTIONS. The following land-disturbing activity shall not be subject to the requirements of this rule:

(a) Activity that: (1) disturbs an area of less than 5,000 square feet; and (2) involves the grading, excavating, filling, or storing on site of less than 50 cubic yards of soil or earth material.

(b) Routine agricultural activity.

(c) Emergency activity immediately necessary to protect life or prevent substantial physical harm to person or property.

(d) Activity otherwise subject to this rule, where the District has entered into a written agreement with the municipality where the activity takes place providing that the District will not exercise erosion control permitting authority within the City under the circumstances in question.

4. PERMIT APPLICATION. A written application for an erosion control permit shall be submitted by the owner of a site or an authorized representative. The application shall contain the following:

(a) Site address.

(b) Property owner's name, address and telephone number.

(c) Names, addresses, telephone numbers and responsibilities of all contractors, subcontractors and other persons who will engage in the land-disturbing activities.

(d) Names, addresses and telephone numbers of persons responsible for preparing the erosion control plan.

(e) Documentation of all applicable county, municipal or township approvals for the proposed action or a statement that no such approvals are required.

(f) Application date.

(g) A statement that the applicant: (a) consents to site inspection by the District and its authorized agents at reasonable times as necessary to evaluate the permit application or determine compliance with the requirements of this rule; and (b) will notify the District and afford access for District inspection as set forth at paragraph 10.

(h) Signature of each property owner with a certification that he or she understands that the proposed activity must be conducted in compliance with this rule and the approved erosion control plan, and that the application is complete and accurate to the best of his or her belief. When a property owner is not a natural person, the application shall bear a signature of one authorized to act on the owner's behalf and documentation of the signatory's authority.

(i) An erosion control plan as described at paragraph 5 of this rule.

(j) A soils engineering report as described at paragraph 6 of this rule, if requested by the District.

(k) A geological report as described at paragraph 6 of this rule, if requested by the District.

(l) A statement that the applicant is aware of fee requirements set forth at Rule J of the District's rules and agrees to pay that fee as determined due by the District.

5. EROSION CONTROL PLAN. The erosion control plan is a stand-alone document that shall include the following:

(a) A vicinity map showing:

(1) The site location in relation to surrounding roads, steep slopes, other significant geographic features, buildings and other significant structures.

(2) All receiving waterbodies within 1000 feet of the area to be disturbed, and all stormwater ponds, ditches, storm

sewer catch basins and other stormwater conveyances within 100 feet and downgradient of the area to be disturbed.

(b) Site plans for existing and final proposed conditions drawn to appropriate scale. The plans shall contain:

(1) Contours sufficient to show drainage on and adjacent to the site.

(2) Site property lines.

(3) Identification and location of all on-site water features and facilities including any lake, stream or wetland; any natural or artificial water diversion or detention area; any surface or subsurface drainage facility or stormwater conveyance; and any storm sewer catch basin.

(4) Location of all trees and vegetation on site, with identification of that which is intended to be retained.

(5) Location of buildings and structures on site.

(6) Proposed grading or other land-disturbing activity including areas of grubbing, clearing, tree removal, grading, excavation, fill and other disturbance; areas of soil or earth material storage; quantities of soil or earth material to be removed, placed, stored or otherwise moved on site; and delineated limits of disturbance.

(7) Locations of proposed runoff control, erosion prevention, sediment control and temporary and permanent soil stabilization measures.

(c) Plans and specifications for all proposed runoff control, erosion prevention, sediment control, and temporary and permanent soil stabilization measures.

(1) Plans and specifications shall conform to the provisions of the manual, "Protecting Water Quality in Urban Areas" (Minnesota Pollution Control Agency, reprinted 1994), as revised, or if a facility or measure is not addressed in that manual, then to the provisions of the "Erosion and Sediment Control Manual" (Hennepin Conservation District, 1989), as revised.

(2) All erosion and sedimentation controls proposed for compliance with this rule will be in place before any land-disturbing activity commences.

(3) Plans shall provide that stockpiles of soil or other materials subject to erosion by wind or water shall be covered, vegetated, enclosed, fenced on the downgradient side or otherwise effectively protected from erosion in accordance with the amount of time the material will be on site and the manner of its proposed use.

(4) Plans shall include measures and procedures to reasonably minimize site soil compaction and shall provide that all compacted soil shall be broken up to a depth of at least six inches before revegetation.

(5) Silt fence shall conform to Sections 3886.1 and 3886.2, Standard Specifications for Construction, Minnesota Department of Transportation (2000 ed.), as it may be amended. Silt fence shall be the color orange if available meeting that specification.

(6) Plans shall provide that all fabric fences used for erosion and sedimentation control and all other temporary controls shall not be removed until the District has determined that the site has been permanently restabilized and shall be removed within 30 days thereafter.

(7) Plans shall provide for permanent stabilization of all areas subject to land disturbance and specify at least four inches of topsoil spread during final site treatment wherever topsoil has been removed.

(d) A detailed schedule indicating dates and sequence of land alteration activities; implementation, maintenance and removal of erosion and sedimentation control measures; and permanent site stabilization measures.

(e) A detailed description of how erosion control, sediment control and soil stabilization measures implemented pursuant to the plan will be monitored, maintained and removed.

(f) On the request of an applicant proposing to landscape an improved residential property and a finding that certain required information is not needed to assess the characteristics of the property and the adequacy of

proposed control measures, the District may reduce the submittal requirements of this section.

6. SOILS ENGINEERING AND GEOLOGY REPORTS. On a determination that the condition of the soils is unknown or unclear and that additional information is required to find that an applicant's proposed activity will meet the standards and purposes of this rule, the District may require soil borings or other site investigation to be conducted and may require submission of a soils engineering or geology report. The report shall include the following as requested by the District:

(a) Data and information obtained from the requested site investigation.

(b) A description of the types, composition, permeability, stability, erodibility and distribution of existing soils on site.

(c) A description of site geology.

(d) Conclusions and revisions, if any, to the proposed land-disturbing activity at the site or the erosion control plan, including revisions of plans and specifications.

7. ADDITIONAL INFORMATION. The District may require any additional information or data, as it finds relevant and necessary to evaluate and act on an application.

8. SURETY. The District may require the applicant to file a bond or other surety in accordance with Rule K. For a fast-track permit, the surety must be in the form of a performance bond, a letter of credit or a cash escrow. The surety shall be maintained until:

(a) Final site stabilization and removal of erosion and sedimentation controls, as determined by the District, and the payment of all fees and amounts due to the District;

(b) Forty-five (45) days after written notification to the District under paragraph 11(d), if the District has failed to respond in writing; or

(c) Such earlier time as the District may advise the applicant in writing.

9. MAINTENANCE. The permittee shall be responsible at all times for the maintenance and proper operation of all erosion and sediment control facilities. On any property on which land-disturbing activity has occurred pursuant to a permit issued under this rule, the permittee shall, at a minimum, inspect, maintain and repair all disturbed surfaces and all erosion and sediment control facilities and soil stabilization measures every day work is performed on the site, and at least weekly, until land-disturbing activity has ceased. Thereafter, the permittee shall perform these responsibilities at least weekly until

vegetative cover is established. The permittee shall maintain a log of activities under this section for inspection by the District on request.

10. NOTIFICATION AND INSPECTION. The applicant or its authorized agent shall notify the District in writing at the following points:

(a) On completing installation of perimeter erosion and sedimentation controls.

(b) On completing land-disturbing activities and putting into place measures for final soil stabilization and revegetation.

(c) When the site has been permanently stabilized and revegetated.

(d) When all temporary erosion and sedimentation controls have been removed from the site.

At each stage indicated, the applicant shall not proceed with site activity until the District has been notified. At the stage indicated at paragraph 10(a), the applicant shall not proceed with site activity until the District has been notified and allowed two full business days to inspect the site and, as necessary, confer with the applicant. Within the two days specified, the District may advise the applicant that it is extending the period for inspection by up to five additional business days.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE C: FLOODPLAIN ALTERATION

1. POLICY. It is the policy of the Board of Managers to:

(a) Preserve existing water storage capacity below 100-year high water elevations on all waterbodies in the watershed to minimize the frequency and severity of high water;

(b) Minimize development below projected 100-year high water elevations that will unduly restrict flood flows or aggravate known high water problems.

2. REGULATION. No person shall alter or fill land below the projected 100-year high water elevation of a waterbody without a permit from the District. A Fast Track permit may be issued for 1" or less of fill in preparation for sodding or seeding.

3. CRITERIA.

(a) The filling shall not cause a net decrease in storage capacity below the projected 100-year high water elevation unless it is shown that the proposed filling, together with the filling of all other properties on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other properties and will not unduly restrict flood flows. The allowable fill area shall be calculated by a professional engineer registered in the State of Minnesota. Creation of floodplain storage capacity to offset fill shall occur within the original permit term. If offsetting storage capacity will be off-site, it shall be created before floodplain filling.

(b) Ice ridge regrading within the floodplain must conform to the original cross-section of the lakebed. Approval for ice ridge regrading or removal of ice ridge material from the floodplain requires the applicant to demonstrate that the ice ridge resulted from ice action during the previous winter. No additional material may be placed within the floodplain except in accordance with this Rule.

(c) All new residential, commercial, industrial and institutional structures shall be constructed such that all door and window openings are at a minimum of two feet above the 100-year high water elevation.

4. REQUIRED EXHIBITS. The following exhibits shall accompany the permit application. One set - full size; one set - reduced to maximum size of 11"x17".

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the work area, ordinary high water elevation (OHW), and regional flood elevation. All elevations must be reduced to NGVD (1929 datum).

(b) Grading plan showing any proposed elevation changes.

(c) Preliminary plat of any proposed land development.

(d) Determination by a professional engineer of the 100-year high water elevation before and after the project.

(e) Computation by a professional engineer of cut, fill and change in water storage capacity resulting from proposed grading.

(f) Soil boring results if available.

(g) If not otherwise subject to District Rule B (Erosion Control), an erosion control plan conforming to paragraphs 5(b) through (f) and section 9 of Rule B.

5. EXCEPTION.

If the 100-year elevation of a waterbasin is entirely within a municipality, the waterbasin does not outlet during the 100-year event, and the municipality has adopted a floodplain ordinance prescribing an allowable degree of floodplain encroachment, the ordinance governs the allowable degree of encroachment and no permit is required under this rule.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE D: WETLAND PROTECTION

1. POLICY. It is the policy of the Board of Managers to:

(a) achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands;

(b) increase the quantity, quality, and biological diversity of Minnesota's wetlands by restoring or enhancing diminished or drained wetlands;

(c) avoid direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of wetlands;

(d) minimize direct or indirect impacts from activities that destroy ordiminish the quantity, quality and biological diversity of wetlands;

(e) rectify the impact of any such activity by repairing, rehabilitating, or restoring the affected wetland environment;

(f) reduce or eliminate the impact of such activity over time by preservation and maintenance operation during the life of the activity;

(g) compensate for the impact on the wetlands by restoring a wetland;

(h) compensate for the impact on the wetlands by replacing or providing substitute wetland resources or environments.

2. AUTHORITY UNDER WETLAND CONSERVATION ACT AND WATERSHED LAW.

(a) The Wetland Conservation Act, as amended, and its implementing rules as set forth in Minnesota Rules chapter 8420, as amended, specifically including sequencing requirements, are incorporated as a part of this rule and shall govern draining and filling in wetlands in all cases where the District is the local government unit under that Act. Wetland replacement, where permitted, shall occur in the same subwatershed as the associated wetland impact.

(b) Sections 3 and 4, below, are adopted under the District's watershed authority and applies whether or not the District is the Wetland Conservation Act local government unit in the municipality where the excavation is to occur.

3. EXCAVATION. Excavation in wetlands is subject to the following requirements.

(a) Excavation is governed by the substantive and procedural standards, criteria and requirements set forth in the Wetland Conservation Act, as amended, and the rules implementing the Wetland Conservation Act as set forth in Minnesota Rules chapter 8420, as amended, with the exception that replacement for excavation not subject to the Wetland Conservation Act shall be at the ratio of 1 acre of replaced wetland for each acre of excavated wetland.

(b) Excavations in wetlands for the purposes of wildlife enhancement must comply, in addition, with the criteria described in the DNR publication "Excavated Ponds for Waterfowl" (1992).

(c) Excavation shall be deemed self-replacing if an applicant demonstrates that the wetland to be excavated is degraded; the proposed activity would increase the wetland's function and value, as determined using the current version of the Minnesota Routine Assessment Method or other method approved by the District; and the enhanced wetland function and value are likely to be preserved.

(d) The application shall identify spoils placement on upland and specify how the deposited materials will be stabilized and vegetated.

(e) Wetland replacement, where permitted, shall occur in the same subwatershed as the associated wetland impact.

4. BUFFER

(a) Any activity for which a permit is required under District Rule C (Floodplain Alteration), D (Wetland Protection), G (Waterbody Structures) or N (Stormwater Management) must provide for a buffer of the following width adjacent to each wetland and public waters wetland:

Size of Wetland	**Width of Buffer Zone**
0 - 1 acre	16.5 feet
1 - 2.5 acres	20 feet
2.5 - 5 acres	25 feet

> 5 acres	35 feet

(b) The buffer is required:

(1) On that part of the wetland edge that is downgradient from the land disturbance; and

(2) Around each wetland that will be disturbed.

(c) A buffer shall be documented by declaration or other recordable instrument approved by the District and recorded in the office of the county recorder or registrar before activity under the MCWD permit commences. A buffer on public land or right-of-way may be documented in a written agreement executed with the District in place of a recorded instrument. The agreement shall state that if the land containing the buffer is conveyed, the public body shall require the buyer to comply with this subsection.

(d) Buffer vegetation shall not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality, each as approved by District staff or when implemented pursuant to a written agreement executed with the District. Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines. No new structure or hard surface shall be placed within a buffer. No fill, debris or other material shall be excavated from or placed within a buffer.

5. REQUIRED EXHIBITS. The following exhibits shall accompany the Combined Joint Notification (CJN) form. One set - full size; one set - reduced to a maximum size of 11"x17".

(a) Site plan showing:

(1) Property lines and corners and delineation of lands under ownership of the applicant;

(2) Existing and proposed elevation contours; including the existing runout elevation and flow capacity of the wetland outlet;

(3) Area of the wetland portion to be filled.

(b) Complete delineation of the existing wetland(s), including data sheets with detailed information on field indicators (soils, hydrology and

vegetation) and summary report. Wetland delineations should be performed during the normal growing season for this area of the State (May 1 - October 15). Delineations performed outside of this time frame may or may not be permitted, depending on potential wetland impact in relation to the entire development or project. Wetland boundaries shall be staked in the field.

(c) Identification and area of the total watershed area presently contributing stormwater runoff to the wetland.

(d) A replacement plan, if required, outlining the steps followed for the sequencing process and including documentation supporting the proposed mitigation plan. A description of the nature and amount of the proposed fill material and details of the annual monitoring plan must also be included.

(e) Wetlands proposed to be excavated for wildlife ponds must also submit a cross section and construction specifications which include the following design criteria:

(1) Ponds should be irregular shaped and a minimum size of 2500 square feet

(2) Pond depth not to exceed 5 feet and to have an undulating bottom

(3) Ratios of basin side slopes ranging from 3:1 to 10:1 (horizontal:vertical)

(4) The spoil disposal site must be identified and found not to be below the OHW of a public water or public water wetland, wetland subject to the Wetland Conservation Act of 1991, or floodplain. However, fill may be placed in a wetland subject to the Wetland Conservation Act to the extent permitted in Minnesota Statutes 103G.2241, subd, 10.

(5) Vegetation restoration plan which includes the disturbed area being seeded to native grasses for a minimum of 150 feet around the dugout

(6) The reserved organic soils should be spread over the entire excavated area to encourage and support plant growth

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE E: DREDGING

1. POLICY. It is the policy of the Board of Managers to preserve the natural appearance of shoreline areas; recreational, wildlife and fisheries resources of surface waters; surface water quality and ecological integrity of the riparian environment.

2. REGULATIONS. No person shall dredge in the beds, banks or shores of any public water in the District without first securing a permit from the District, and posting a bond or letter of credit pursuant to Rule K.

3. GENERAL STANDARDS. All permitted dredging shall comply with the following standards:

(a) The spoil disposal site must be identified and found not to be below the OHW of a public water or public water wetland, wetland subject to the Wetland Conservation Act of 1991, or floodplain and not prone to erosion.

(b) In cases of an identifiable source of sediment under the control of the applicant, the plan shall include remedial action to minimize deposition of sediment into a waterbody or off-site.

(c) Before District review, all dredging proposals that involve navigational access to docking structures shall be submitted to and approved, in the case of public waters, by the Minnesota Department of Natural Resources and, in the case of Lake Minnetonka, by the Lake Minnetonka Conservation District. Proposed dredging in Lake Minnetonka is subject to the dredging standards of the DNR, MCWD and LMCD Dredging Joint Policy Statement (April 1993).

(d) The proposed project shall represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives such as dock extensions, aquatic nuisance plant removal without dredging, beach sandblankets, excavation above the bed of public water, less extensive dredging in another area of the public water, or management of an alternative water body for the intended purpose.

(e) The dredging shall be limited to the minimum dimensions necessary for achieving the stated purpose. (Reference General Permit 95-6150, `Excavation for Navigation', paragraph 5).

(f) If the dredging will be accomplished by means of hydraulic dredging the following additional standards will apply:

(1) The spoil disposal site shall have a minimum storage capacity equal to four times the calculated volume of solid material to be removed, a minimum free board between the top of the projected water surface elevation and the top of the dike of one foot, if no outlet from the spoil disposal is proposed.

(2) The construction of the spoil containment site shall be with earthen dikes. No such dike shall exceed 5.5 feet in height at any point. Dikes shall have a minimum 4 foot wide top and side slopes of 2:1 (H:V) or flatter. The dikes shall be adequately compacted by traversing with appropriate equipment during construction.

(3) Proposed embankments which differ from the standard in 3(f)(2) shall comply with generally accepted engineering principles and be designed and certified by a professional engineer registered in the State of Minnesota.

(4) Spoil containment sites of limited storage volume which propose a discharge back into a receiving water body through a control structure shall meet applicable State water quality guidelines for the receiving water body. Weekly monitoring of the instantaneous discharge shall be performed and paid for by the applicant. The results shall be promptly forwarded to the District Engineer for comparison to state water quality standards for turbidity and total suspended solids.

(5) A restoration plan prepared by a qualified individual shall show proposed methods of retaining waterborne sediments on site during the period of operation. The plan shall show final grades and how the site will be restored, covered and/or vegetated after construction. Sites with high erosion potential characterized by steep slopes or erodible soils may require a cash deposit to ensure performance and any necessary remedial actions.

4. CRITERIA.

(a) Dredging shall be permitted only:

(1) To maintain, or remove sediment from, an existing public or private channel, not exceeding the original or originally permitted extent of dredging, whichever is less, and subject to such further limitations on method or extent of dredging as this rule may provide; or

(2) To implement or maintain an existing legal right of navigational access; or

(3) To remove sediment to eliminate a source of nutrients, pollutants, or contaminants; or

(4) To improve the public recreational, wildlife, or fisheries resources of surface waters; or

(5) For actions by public entities for public purposes.

(b) No dredging shall be permitted:

(1) Above the ordinary high water level or into the upland adjacent to the lake or watercourse.

(2) That would enlarge a natural watercourse landward or that would create a channel to connect adjacent backwater areas for navigational purposes.

(3) Where the dredging will alter the natural shoreline of a lake.

(4) Where the dredging might cause increased seepage or result in subsurface drainage.

(5) Where any portion of the dredged area contains any slope steeper than 3:1 (H:V) in a marina or channel, or steeper than 10:1 (H:V) for an area adjoining residential lakeshore.

(c) Dredging identified in 4(b)(1-3) above may be permitted where the project complies with applicable DNR rules.

5. REQUIRED EXHIBITS. The following exhibits shall accompany the permit application. One set - full size; one set - reduced to maximum size of 11"x17".

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, ordinary high water elevation, and regional flood elevation (if available). All elevations must be reduced to NGVD (1929 datum).

(b) Profile, cross sections and/or topographic contours showing existing and proposed elevations and proposed side slopes in the work area. (Topographic contours should be at intervals not greater than 1.0 foot.)

(c) In the case of projects using hydraulic means of sediment removal and on-site spoil containment the applicant shall supply:

(1) Cross section of the proposed dike.

(2) Stage/storage volume relationship for the proposed spoil containment area.

(3) Detail of any proposed outlet structure, showing size, description and invert elevation.

(4) Stage/discharge relationship for any proposed outlet structure from the spoil containment area.

(5) Site plan showing the locations of any proposed outlet structure and emergency overflow from the spoil containment area.

(d) Site plan showing the proposed location of floating silt curtains.

(e) Support data:

(1) Description and volume computation of material to be removed.

(2) Description of equipment to be used.

(3) Construction schedule.

(4) Location map of spoil containment area.

(5) Erosion control plan for containment area.

(6) Restoration plan for any proposed permanent on-site spoil containment site showing final grades, removal of control structure, and a description of how and when the site will be restored, covered or revegetated after construction.

(7) Detail of any proposed floating silt curtain including specifications for the silt curtain.

(f) In the case of projects where dredging:

(1) Might cause increased seepage or result in subsurface drainage, or

(2) Will remove sediment to eliminate a source of nutrients, pollutants, or contaminants, a minimum of two soil bearing logs extending at least two feet below the proposed work elevation shall be required.

6. FAST-TRACK PERMIT. A fast-track permit may be issued by District staff for the removal of accumulated sediment caused by a stormwater outlet. The application otherwise must comply with all provisions of this rule. In addition to the requirements of sections 3 and 5 of this rule, the following criteria shall be met:

(a) Authorization shall apply only to removal of sediment identified as non-native material accumulated due to stormwater runoff or erosion.

(b) Dredging shall not materially change the elevation or contour of the bed of the affected basin.

(c) No dredging in a public water shall occur between March 15 and June 1. No dredging in another waterbody shall occur between March 15 and June 1 unless the applicant demonstrates that fish spawning does not occur in the waterbody.

(f) Information showing whether the subject wetland is protected by either the State or municipality or both.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE F: SHORELINE & STREAMBANK IMPROVEMENTS

1. POLICY. It is the policy of the Board of Managers to:

(a) Assure that improvement of shoreline and streambank areas to prevent erosion complies with accepted engineering principles in conformity with DNR construction guidelines;

(b) Preserve the natural appearance of shoreline and streambank areas; and

(c) Encourage and foster bioengineering, landscaping and preservation of natural vegetation as preferred means of stabilizing shorelines and streambanks.

2. REGULATIONS.

(a) No person shall install an improvement to prevent erosion of the shoreline of a water basin or public waters wetland or the bank of a watercourse, including but not limited to riprap, a retaining wall, a bioengineered installation, a sand blanket or a boat ramp, without first securing a permit under this Rule and providing a surety pursuant to Rule K. Planting of vegetation not intended to provide deep soil structure stability does not require a permit under this Rule.

(b) A fast track permit may be issued for routine riprap projects that conform to the requirements set forth in paragraph 3(b) of this rule.

(c) A fast track permit may be issued for routine sandblanket projects that conform to the requirements set forth in paragraph 6 of this rule.

(d) Maintenance of an existing shoreline or streambank improvement does not require a permit under this rule unless it involves the addition of new material to the improvement or, for projects other than riprap, structural change in the improvement.

(e) An improvement within the meaning of the rule shall also include any water control structure affixed to the bed or bank of a waterbody.

3. CRITERIA FOR RIPRAP PLACEMENT. Riprap placement shall comply with the following criteria:

(a) General standards:

(1) Riprap material shall be durable, natural stone and of a gradation that will result in a stable shoreline embankment. Stone, granular filter and geotextile shall conform to Sections 3601.1 and 3601.2, Standard Specifications for Construction, Minnesota Department of Transportation (2000 ed.), as it may be amended. All materials shall be nonpolluting.

(2) The finished slope of the rock fragments, boulders and/or cobbles shall not be steeper than a ratio of 3 feet horizontal to 1 foot vertical (3:1) under normal conditions. Steeper slopes will generally require larger sized riprap. Any rock/boulder stabilization project with a proposed finished slope steeper than 2:1 (horizontal to vertical) shall be evaluated as a retaining wall~~s~~.

(3) Horizontal encroachment from a shoreline shall be the minimum amount needed and shall not interfere unduly with water flow. Under normal conditions, no riprap or filter materials shall be placed more than 5 feet waterward of a shoreline, measured from the ordinary high water level (OHW) elevation. The maximum shoreline encroachment waterward of the OHW is 10 feet. Streambank riprap shall not reduce the cross-sectional area of the channel or result in a stage increase of more than 0.01 feet at or upstream of the treatment.

(4) A transitional layer consisting of graded gravel, at least 6 inches deep, and an appropriate geotextile filter fabric shall be placed between the soil material of the existing shoreline and the riprap to prevent erosion of the embankment and to prevent settlement.

(5) The design shall reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a shoreline, the design shall conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement, considering prevailing winds, fetch and other factors that induce wave energy. For a streambank, design shall conform to engineering principles for the hydraulic

behavior of open channel flow, considering channel slope, velocity and tractive forces.

(6) Riprap shall conform to MnDOT Class III/IV. The thickness of the riprap layers should be at least 1.25 times the maximum stone diameter. Toe boulders shall be at least 50 percent buried and may be as large as 30 inches in diameter.

(7) Riprap shall extend no higher than the top of bank, or two feet above the 100-year high water elevation, whichever is lower.

(8) A riprap placement design for a streambank or channel shall be certified as structurally sound and in accordance with the requirements of this Rule by a registered professional engineer in the State of Minnesota in the practice of civil engineering.

(b) Routine riprap projects eligible for a fast track permit: Shoreline riprap projects shall qualify for a fast track permit issued and signed by an authorized representative of the District so long as the project meets the following specifications:

(1) Riprap material shall be durable stone meeting the size and gradation requirements of MnDOT Class III or IV riprap;

(2) The finished slope of the stone shall not be steeper than 3 feet horizontal to 1 foot vertical (3H:1V);

(3) Property corners and lines that delineate the lineal feet of shoreline to be treated shall be located and staked prior to beginning work;

(4) Riprap or filter materials shall not be placed more than 5 feet waterward of the staked OHW or NOHW, and shall not be placed on property not owned by the applicant; the encroachment into the water is the minimum amount necessary to provide protection and does not unduly interfere with the flow of the water.

(5) A transitional granular filler meeting the requirements of MnDOT 3601.B, at least 6 inches in depth, shall be placed between the native shoreline and the riprap to prevent erosion of the fine grained soils. A geotextile fabric

meeting the requirements of MnDOT 3733 shall be placed beneath the transitional layer to enhance stability; and

(6) Underlying native soils shall not be classified as organic soils or peat.

(c) Riprap installed pursuant to a District permit shall be maintained within slope and encroachment constraints established in the permit.

4. RIPRAP REQUIRED EXHIBITS. The following exhibits shall accompany the riprap permit application. One full-size; one set-reduced to maximum size of 11" x 17".

(a) Site plan showing:

- Survey locating the existing OHW contour, existing shoreline or streambank, floodplain elevation, and location of property lines;
- Elevation contours of the upland within 15 feet of the OHW and referenced to accepted datum; and
- Plan view of locations and lineal footage of the proposed riprap treatment.

The plan shall show the location of an upland baseline parallel to the shoreline with stationing. The baseline shall be staked in the field by the applicant and maintained in-place until project completion. Baseline origin and terminus each shall be referenced to three fixed features measured to the closest 0.05 foot, with measurements shown and described on the plan. Perpendicular offsets from the baseline to the OHW shall be measured and distances shown on the plan at 20-foot stations. The plan shall be certified by a registered engineer or surveyor.

(b) Cross section detailing the proposed riprap, drawn to scale, with the horizontal and vertical scales noted on the drawing. The detail should show the finished riprap slope, transitional layer design and placement, distance lakeward of the riprap placement, ordinary high water level elevation and material specifications.

(c) Description of the underlying soil materials that will support the riprap.

(d) Material specifications for stone, filter material and geotextile fabric.

(e) Specification of erosion control and site stabilization practices.

5. GUIDELINES. The engineer shall publish or make available to interested persons ~~a~~ typical cross-sections for shoreline and streambank protection in compliance with this rule.

6. CRITERIA FOR LAYING SANDBLANKETS. All permitted sandblanketing shall comply with the following standards.

(a) The sand or gravel used must be clean prior to being spread. The sand must contain no toxins or heavy metal, as defined by the MDNR, and must contain no weed infestations such as, but not limited to, water hyacinth, alligator weed, and Eurasian watermilfoil, or animal life infestations such as, but not limited to, zebra mussels or their larva. Violators will be prosecuted to the full extent of the law.

(b) The sand layer must not exceed six inches in thickness, 50 feet in width along the shoreline, or one-half the width of the lot, whichever is less, and my not extend more than ten (10) feet waterward of the ordinary high water mark.

(c) Only one installation of sand or gravel to the same location may be made during a four year period. After the four years have passed since the last blanketing, the location may receive another sandblanket. No more than two applications may be made by an individual landowner during their residency at an individual project site.

(d) Exception. Beaches which are operated by governmental entities, and available to the public, shall be exempted from the following restrictions: (i) that sandblankets be no more than 50 feet in width. See subsection (6. b.) of this rule; and (ii) that sandblankets be installed no more frequently than once every four years. See subsection (6.c.) of this rule. Permits shall be required for all public beach sandblankets.

7. SANDBLANKET REQUIRED EXHIBITS. The following exhibits shall accompany the sandblanket permit application.

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, ordinary high water elevation, and regional flood elevation (if available). All elevations must be reduced to NGVD (1929 datum).

(b) Profile, cross sections and/or topographic contours showing existing and proposed elevations and proposed side slopes in the work area. (Topographic contours should be at intervals not greater than 1.0 foot).

(c) A completed Sandblanket Permit Application form, available from the District.

8. CRITERIA FOR RETAINING WALLS.

(a) A new retaining wall, or repair/reconstruction of an existing retaining wall that increases floodplain encroachment beyond that required by technically sound and accepted repair/reconstruction methods, is permitted only pursuant to a variance or an exception under District Rule I. The

applicant must demonstrate that there is no adequate stabilization alternative.

(b) Wooden seawalls and/or steel sheetpiling retaining walls shall comply with accepted engineering principles.

(c) The applicant shall submit a structural analysis prepared by a professional engineer registered in the State of Minnesota, in the practice of civil engineering, showing that the wall will withstand expected ice and wave action and earth pressures.

(d) The applicant shall submit a survey prepared by a registered land surveyor locating the finished wall and shall file a certificate of survey with the District.

9. CRITERIA FOR OTHER SHORELINE IMPROVEMENTS. Other shoreline improvements, such as boat ramps, shall comply with accepted engineering principles.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE G: WATERBODY CROSSINGS & STRUCTURES

1. POLICY. It is the policy of the Board of Managers to discourage the use of beds and banks of waterbodies for the placement of roads, highways, and utilities.

2. REGULATION. No person shall place a road, highway, utility or associated structure in contact with the bed or bank of any waterbody within the District without first securing a permit from the District.

3. CRITERIA. Use of the bed or bank:

(a) Shall meet a demonstrated public benefit;

(b) Shall retain adequate hydraulic capacity;

(c) Shall retain adequate navigational capacity;

(d) Shall preserve wildlife passage along each bank by means that: (i) account for wildlife that are native to the site or may be present and (ii) are approved by a qualified wildlife biologist; (see http://www.wildlifecrossings.info for more information, which will open in a new browser window);

(e) Shall not adversely affect water quality; and

(f) Shall represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives. The term "minimal impact" shall refer to all resources protected under the purposes of the District set forth at Sections 103B.201 and 103D.201 of the Minnesota Statutes.

4. REQUIRED EXHIBITS. The following exhibits shall accompany the permit application. One set - full size; one set - reduced to maximum size of 11"x17".

(a) Construction plans and specifications.

(b) Analysis prepared by a professional engineer or qualified hydrologist showing the effect of the project on hydraulic capacity and water quality.

(c) An erosion control and restoration plan.

(d) The written approval required by paragraph 3(d).

(e) Information necessary to evaluate impacts under paragraph 3(f), as determined by District staff in consultation with the applicant.

5. MAINTENANCE. A declaration or other recordable instrument stating terms for maintenance of hydraulic and navigational capacity and approved by the District shall be recorded in the office of the county recorder or registrar before activity under the MCWD permit commences. In lieu of recordation, a public permittee or a permittee without a property interest sufficient for recordation may assume the maintenance obligation by means of a written agreement with the District. The agreement shall state that if the ownership of the structure is transferred, the public body shall require the transferee to comply with this subsection.

Minnehaha Creek Watershed District

IMPROVING QUALITY OF WATER, QUALITY OF LIFE

Home
About the District
News and Publications
Meetings
Permitting Department
Projects/Studies
Water Quality
Technical Information
Programs & Grants
Recreation
What Can I Do?
Employment
FAQ
Are you in the District?
Contact Us
Site Map
Search

Rule H: Enforcement

As Amended May 25, 2000

1. VIOLATION OF RULES A MISDEMEANOR. Violation of these rules, a stipulation agreement made, or permit issued by the Board of Managers pursuant to these rules, is a misdemeanor subject to a penalty as provided by law.

2. DISTRICT COURT ACTION. The District may exercise all powers conferred upon it by Minnesota Statutes Chapter 103D in enforcing the rules adopted hereunder, including criminal prosecution, injunction, or action to compel performance, restoration or abatement.

3. ADMINISTRATIVE ORDER. The District may issue a cease and desist order when it finds that a proposed or initiated project presents a serious threat of soil erosion, sedimentation, or an adverse effect upon water quality or violates any rule of the District, a condition of a District permit or order, or a term of a stipulation entered into by the District. This authority may be exercised by District staff.

Home
About the District
News and Publications
Meetings
Permitting Department
Projects/Studies
Water Quality
Technical Information
Programs & Grants
Recreation
What Can I Do?
Employment
FAQ
Are you in the District?
Contact Us
Site Map
Search

Rule I: Variances

As Amended May 25, 2000

1. VARIANCES AUTHORIZED. The Board of Managers may hear requests for variances from the literal provisions of these rules in instances where their strict enforcement would cause undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be keeping with the spirit and intent of these rules.

2. STANDARD. In order to grant a variance, the Board of Managers shall determine that the special conditions which apply to the structure or land in question do not apply generally to other land or structures in the District, that the granting of such variance will not merely serve as a convenience to the applicant, and that the variance will not impair or be contrary to the intent of these rules. A hardship cannot be created by the landowner, the landowner's agent or representative, or a contractor, and must be unique to the property. Economic hardship not grounds for issuing a variance.

3. TERM. A variance shall become void after one year after it is granted if not used.

4. VIOLATION. A violation of any condition set forth in a variance shall be a violation of the District rules and shall automatically terminate the variance.

5. EXCEPTIONS. The Board of Managers may grant an exception from a provision of these rules requiring a particular treatment or management method, or setting forth a design specification of such a method, on a determination that the proposed application, with such further conditions as the Board may impose, will achieve a greater degree of water resource protection than would strict compliance with the provision.

6. SUPERMAJORITY REQUIREMENT. A variance or exception must be approved by a two-thirds majority of managers voting.

Rule J: Fees Charged in Certain Cases

As Amended May 25, 2000

1. FINDINGS. The Board finds that:

(a) public awareness of and compliance with the permitting process will be served by a policy of charging a minimal permit application fee. By encouraging applicants to seek permits for potential projects, the public benefits by reduced inspection and enforcement costs;

(b) it is in the public interest that certain projects, involving larger scale development or development in sensitive locations, be inspected by District staff to provide the Board sufficient information to evaluate compliance with District rules and applicable law; and

(c) from time to time persons perform work requiring a permit from the District without a permit, and persons perform work in violation of an issued District permit. The Board finds that its costs of engineering inspection and analysis in such cases exceeds those where the applicant has complied with District requirements. The Board further concludes that its annual tax levy should not be used to pay such costs which are incurred because of a failure to meet District requirements. Therefore, the Board adopts a rule charging fees to the responsible persons in such cases.

2. FEE. A permit processing fee in an amount set by Board resolution shall be paid by each applicant before the application is acted on by the District. A site inspection by District staff shall be performed in the following cases:

(a) commercial, industrial, or multi-family residential developments;

(b) single family residential developments greater than 5 acres or of any size if within the Minnehaha Creek subwatershed;

(c) any alterations of a floodplain or wetland;

(d) any dredging within a waterbody;

(e) where any person performs any work for which a permit is required under these rules without having first obtained a permit from the District, or, performs any work in violation of any terms or conditions of a permit issued by the District under these rules; or

(f) any project that, due to its location, scope, or construction techniques, requires inspection in order to determine compliance within District rules and applicable law.

In these cases, the applicant or person responsible for the violation shall pay to the District a fee equal to the District's actual costs of field inspection of the work including investigation of the area affected by the work, analysis of the work, services of a consultant, including engineering and legal consultants, and any subsequent monitoring of the work, which in the case of a violation are incurred after notice of violation from the District. Inspection fees shall be at least $35.

3. PROCEDURE AND PAYMENT OF FEE.

(a) The District shall notify any person performing such work described in paragraph 2(a) of this rule of the violation. If a permit has not been issued for the work, the person performing the work shall promptly apply for a permit. If a permit has previously been issued, the Board shall rescind the permit if it finds violations of permit terms.

(b) Upon receipt of a permit application exhibits and completion of any necessary inspection and analysis showing that the work is to be performed is in accordance with District requirements, the Board may issue a permit. Upon permit approval, the Board shall notify the person who is liable for the fee described in paragraph 2 of this rule of the fee due. The fee shall be paid to the District within thirty (30) days from the date of permit approval and shall be received by the District prior to actual issuance of the permit.

(c) In cases where the permit approved by the Board requires further monitoring of the project by District staff, the District shall notify the applicant of the monitoring fee due. The fee shall be paid to the district within thirty (30) days from the date of notice and failure to pay the fee shall constitute a violation of the permit terms and the Board may rescind the permit.

4. RECOVERY OF FEE. The fee provided for in this rule may be recovered by the District by any legal action authorized by law.

5. FAST-TRACK DEPOSIT. In the case of a fast-track permit application under these rules, in lieu of the operation of paragraphs 3 and 4 of this rule, an applicant at the time of application shall provide a deposit in an amount set by Board resolution to cover the application fee and District costs in the event of inspection. On a determination that the project has been completed in compliance with the permit, the balance of the deposit shall be returned to the applicant. This paragraph shall not limit the responsibility of the applicant for additional fees under section 2 and paragraph 3(c) of this rule.

6. GOVERNMENTAL AGENCIES EXEMPT. The fee in Paragraphs 2 and 5 shall not be charged to any agency of the United States or any governmental unit

in the State of Minnesota.

As Amended May 25, 2000

1. FINDINGS. The Board finds that:

(a) It is the policy of the Board of Managers to conserve the water resources of the District by assuring compliance with the District's rules in the performance of activities within the District.

(b) Requiring a bond or other surety to be submitted with a permit application and conditioned on adequate performance of the authorized activities and compliance with District rules is an effective way to conserve the water resources of the District.

2. SURETY REQUIREMENT.

(a) A performance bond, letter of credit or other surety in a form approved by the District shall be submitted to the District with each application for a permit for an activity regulated under Rule B - Erosion Control, Rule E - Dredging, Rule F - Shoreline and Streambank Improvement, or Rule N - Stormwater Management, with the exception that a surety is not required for installation of a sandblanket.

(b) The District may require a surety to be submitted to the District for other permit applications in an amount set by the Board of Managers.

(c) The surety shall be submitted by the permit applicant but the surety principal may be either the landowner or the individual or entity undertaking the proposed activity.

3. SURETY AMOUNT.

The amount of the surety shall be set by the Board of Managers by resolution as the amount the Board deems necessary to cover the following potential liabilities to the District:

(a) Post-permit field inspection, monitoring and related fees authorized under Minn. Stat. § 103D.345;

(b) The cost of maintaining and implementing protective measures

set forth in or incorporated into the permit; and

(c) The cost of remedying damage resulting from permit noncompliance or for which the permittee otherwise is responsible.

4. SURETY FORM AND CONDITIONS.

(a) The surety shall be in a form acceptable to the District and, if a commercial surety, from a surety licensed and doing business in Minnesota.

(b) The surety shall be in favor of the District and conditioned upon the applicant's performance of the activities authorized in the permit in compliance with all applicable laws, including the District's rules, the terms and conditions of the permit and payment when due of any fees or other charges authorized by law, including the District's rules. The surety shall state that in the event the conditions of the surety are not met, the District may make a claim against it.

(c) The surety must be good for at least a one-year period and shall contain a provision that it may not be canceled without at least thirty (30) days prior written notice to the District by the surety.

5. SURETY RELEASE.

(a) For a surety covering a single project, on written notification of project completion, the District may inspect the project to determine if it is constructed in accordance with the terms of the permit and District rules. If the project is completed in accordance with the terms of the permit and District rules and there is no outstanding balance of money owed to the District for the project, including but not limited to unpaid Rule J fees, the District will release the surety. If the District has not inspected the project and made a determination of the project's compliance with the above criteria within 45 days of District receipt of written notification of project completion, the surety is deemed released.

(b) A surety covering more that one permit application will be released by the District on written request of the principal if the conditions listed in either of the following subdivisions are met:

(1) Pursuant to an inspection by the District of the final project covered by the surety, the District determines that the project is completed in accordance with the terms of the permit and District rules and there is no outstanding balance of money owed to the District for the project, including but not limited to unpaid Rule J fees. If the District has not inspected the project and made a determination of the project's compliance with the above criteria within forty-five days of District

receipt of written notification of final project completion, the surety is deemed released.

(2) The applicant submits a new surety in a form and amount satisfactory to the District.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted January 13, 2005

RULE N: STORMWATER MANAGEMENT

1. POLICY. It is the policy of the Board of Managers to:

(a) Require stormwater facilities to be included in land development projects where practicable and effective.

(b) Manage stormwater and snowmelt runoff on a regional or subwatershed basis throughout the District to:

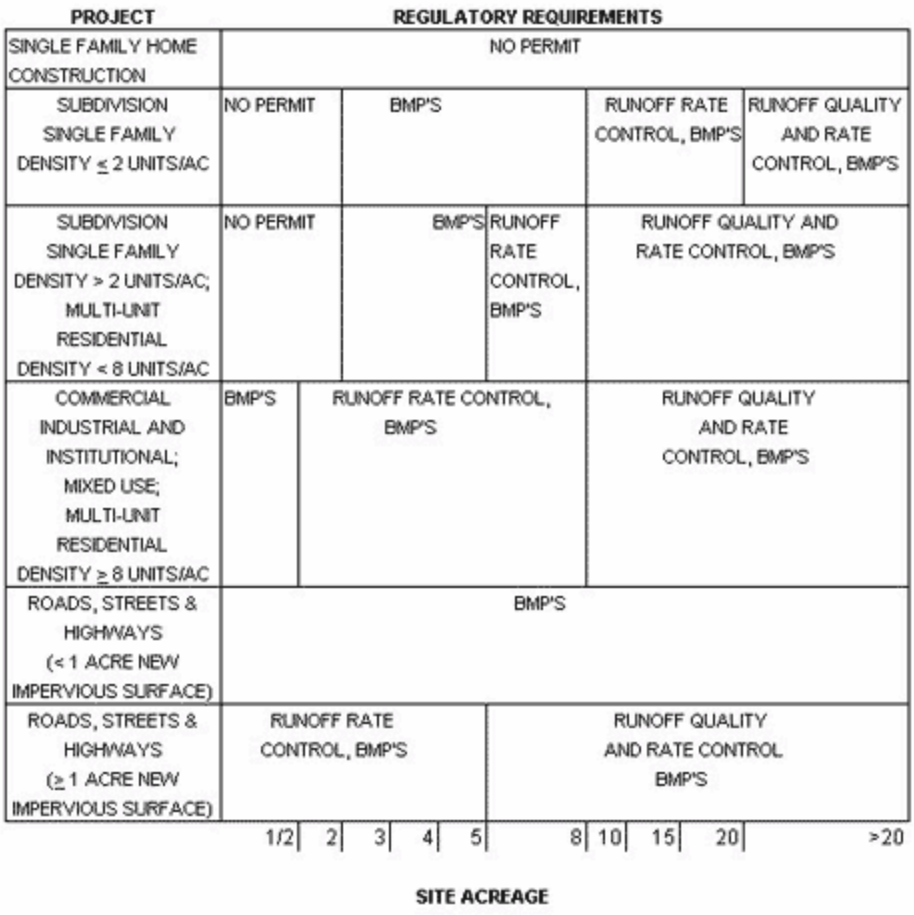
(1) promote effective water quality treatment, where feasible, prior to discharge to surface waterbodies and wetlands;

(2) limit developed peak rates of runoff into major surface water bodies to less than or equal to existing peak rates; and

(3) promote infiltration of both precipitation and runoff.

2. APPLICABILITY OF STORMWATER MANAGEMENT PERMIT REQUIREMENTS.

FIGURE 1. SUMMARY OF STORMWATER MANAGEMENT PERMITTING AND REGULATORY REQUIREMENTS ON THE BASIS OF DEVELOPMENT TYPE AND DENSITY



NOTE: Density calculation is based on total site area including dedicated areas.

As provided herein, before creating any impervious surface or changing the contours of a parcel of land in a way that affects the direction, peak rate or water quality of storm flows from the parcel, a developer of land for residential, commercial, industrial, institutional, or public roadway, sidewalk or trail uses shall submit a stormwater management plan to the District, and secure a permit from the District approving the plan. Any activity that will divert storm flows out of the watershed must demonstrate that the diversion is not injurious to water resource management purposes set forth in sections 103B.201 and 103D.201 of the Minnesota Statutes. All permit applications shall conform to and be reviewed in accordance with the provisions of Rule A of these rules. The plan shall provide for compliance with the requirements of this rule for BMP's, rate control and water quality control, as applicable. The applicability of the stormwater management requirements set forth in this rule to a given development or redevelopment is set forth at paragraphs (a) through (e) of this section and summarized in Figure 1.

(a) **Single-Family Homes**. A permit is not required for the construction or reconstruction of a single-family home or its residential appurtenances.

(b) **Single-Family, Developed or Redeveloped Subdivisions.** A permit is not required from the MCWD for construction on less than two (2) acres with a density of two (2) units or less per acre. A permit is required for residential development or redevelopment of subdivisions with a density of two (2) units or less per acre on sites of two (2) acres or more, as follows:

(1) For development or redevelopment of subdivisions of two (2) acres or more but less than eight (8) acres, the best management practices provisions set forth in section 3 of this rule are required;

(2) For development or redevelopment of subdivisions of eight (8) acres or more but less than twenty (20) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;

(3) For development or redevelopment of subdivisions of twenty (20) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required.

(c) **Medium Density Residential Land Development.** A permit is not required for the development or redevelopment on a site of less than two (2) acres of residential subdivisions with single-family units at a density of more than two (2) units per acre or multi-unit residential development or redevelopment, at a density of less than eight (8) units per acre. A permit is required for development or redevelopment on a site of two (2) acres or more of residential subdivisions with a density of more than two (2) units per acre or multi-unit residential development or redevelopment at a density of less than eight (8) units per acre, as follows:

> (1) For development or redevelopment of two (2) acres or more but less than five (5) acres, the best management practices provisions set forth in section 3 of this rule are required;
>
> (2) For development or redevelopment of five (5) acres or more but less than eight (8) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;
>
> (3) For development or redevelopment of eight (8) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in

section 4, and the water quality provisions set forth in section 5 of this rule are required.

(d) Commercial, Industrial, or Institutional Development or Redevelopment; Mixed Use; High Density Residential Development or Redevelopment. A permit is required for commercial, industrial, institutional or mixed use development or redevelopment, or for multi-unit residential development or redevelopment at a density greater than or equal to eight (8) units per acre, as follows:

(1) For all development or redevelopment, the best management practices provisions set forth in section 3 of this rule are required;

(2) For development or redevelopment activities on sites of one-half (1/2) acre or more but less than eight (8) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 of this rule are required;

(3) For development or redevelopment activities on sites of eight (8) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required.

(e) **Roads, Streets, Highways, Sidewalks, and Trails**. A permit is not required for the maintenance or improvement of a public or private road, street, highway, sidewalk, trail or other linear way not otherwise regulated under paragraphs (a) through (d), if the project does not result in a net increase in impervious surface. A permit is required for a public or private road, street, highway, sidewalk, trail or other linear way that results in a net increase in impervious surface area, as follows:

(1) For projects that result in a net increase in impervious surface of less than one (1) acre, the best management practices in section 3 of this rule will be required;

(2) For projects that result in a net increase in impervious surface of one (1) acre or more, but the total project area is less than five (5) acres, the best management practices provisions set forth in section 3 and the water quantity control provisions set forth in section 4 are required to treat the increase;

(3) For projects that result in a net increase in impervious surface of one (1) acre ore more and the total project area is five (5) acres or more, the best management practices provisions set forth in section 3, the water quantity control provisions set forth in section 4, and the water quality provisions set forth in section 5 of this rule are required to treat the increase;

(4) Sidewalks and trails that do not exceed ten (10) feet in width and are bordered by a pervious buffer of at least five feet on each side do not require a permit and are not included in any calculation of net increase in impervious surface when part of a road or street project. The interruption of pervious buffer by streets, driveways or other impervious surfaces crossing a sidewalk or trail does not invalidate this exception provided that these impervious surfaces do not exceed 25 percent of the area of the required pervious buffer.

(f) **Surety.** A performance bond or other surety in a form satisfactory to the District is required for all activity, including clearing, grading, and excavation, that results in the disturbance of five (5) or more acres of land. The District will not require a performance bond or other type of surety from cities, townships, municipal corporations, counties, the state or federal government, or agencies of any of the aforementioned.

(g) **Common Scheme of Development**. In determining stormwater management requirements under this section, development or redevelopment on adjacent sites under common or related ownership shall be considered in the aggregate. The requirements applicable to a development or redevelopment under this section shall be determined with respect to all development that has occurred on the site, or on adjacent sites under common or related ownership, since the date this rule took effect.

(h) **Additional Development or Redevelopment on Developed Sites**. When the impervious area on a site is increased by 50 percent or more, the requirements imposed by this rule will be determined with respect to the site in a pre-development condition. When the impervious area on a site is increased by less than 50 percent, the requirements imposed by this rule will be determined with respect to only the additional impervious surface and site alteration proposed.

(i) **Impact on Downstream Waterbodies.** No activity subject to a permit under MCWD Rule B, C, D or N may alter stormwater flow so as to:

(1) Increase the bounce in water level for any downstream lake or wetland beyond the limit specified below for the lake or wetland susceptibility class, during a precipitation event of critical duration with any return frequency up to 100 years in the subwatershed drainage area in which the site is located; or

(2) Increase the duration of inundation for any downstream lake or wetland beyond the limit specified below for the lake or wetland susceptibility class, during a precipitation event of critical duration with a return frequency of one, ten, or 100 years in the subwatershed drainage area in which the site is located.

No water may be discharged from a point source onto or into the ground, or into a waterbody, so as to: (a) increase the bounce in water level or duration of inundation for any downstream lake or wetland beyond the limit specified below applicable to the one-year precipitation event for the lake or wetland susceptibility class; or (b) increase the one- or 100-year peak flow of, sedimentation into or erosion of the bed or banks of a watercourse.

Susceptibility Class	Permitted Bounce Up to 100-Year Event	Inundation Period for One-Year Event	Inundation Period for 10- and 100-Year Event
Highly susceptible wetland	Existing	Existing	Existing
Moderately susceptible	Existing + 0.5 feet	Existing plus 1 day	Existing plus 2 days
Slightly susceptible wetland	Existing + 1.0 feet	Existing plus 2 days	Existing plus 14 days
Least-susceptible wetland/Lake	No limit	Existing plus 7 days	Existing plus 21 days

3. BEST MANAGEMENT PRACTICES REQUIREMENTS.

(a) BMPs addressing the potential water resource impacts associated with the proposed activity must be incorporated in all projects requiring a permit under this rule to limit creation of impervious surface, maintain or enhance on-site infiltration and peak flow control and limit pollutant generation on and discharge from the site. BMPs include site design, structural and non-structural practices.

(b) BMP's must be designed and installed in accordance with generally accepted design practices and, if specifications for the BMP are contained in the MPCA manual "Protecting Water Quality in Urban Areas (revised July 1991) and its subsequent revisions, consistent with that manual.

(c) No new point source may discharge to a wetland without pretreatment for sediment and nutrient removal. Pretreatment may be provided by non-structural means. An activity changing flow that discharges from an existing point source is not a new point source.

(d) All applications for which compliance only with BMP's is required shall delineate buildings and structures showing that door and window openings are a minimum of two feet above the 100 year high water elevation.

4. CONTROL REQUIREMENTS.

(a) Development on a site shall not increase the peak rate of stormwater runoff at the downgradient site boundary from the rate existing before the proposed-development. The criterion shall be analyzed and met for runoff-producing events of critical duration with return frequencies of 1, 10 and 100 years in the subwatershed in which the site is located.

(b) Natural existing low areas will be used, where feasible, for detention of runoff to comply with rate control criteria. Reservoir routing procedures

and critical duration runoff events shall be used for design of detention areas and outlets.

(c) The proposed project shall not adversely affect water levels off the site during or after construction.

(d) Runoff tributary to the project must be accommodated in the analyses and design of new stormwater management facilities.

(e) The volume of runoff may not increase due to the project when the receiving area of said runoff is landlocked and not capable of handling the increased volume of runoff. In addition, the applicant shall either own or have proper rights over the landlocked property to handle water from the development. Back-to-back 100-year runoff events will be used to analyze holding capacity and freeboard for landlocked areas.

(f) All stormwater rate control facilities shall be located above the projected 100-year flood elevation for the site and within drainage, utility and/or flowage easements to provide access and to prevent future alteration or encroachment.

(g) Water quantity control methods and facilities used or constructed pursuant to this rule shall be in conformance with approved Municipal Stormwater Management Plans. Outfall structures shall incorporate designs to minimize erosion and scouring.

New buildings and structures shall have door and window openings a minimum of two feet above the 100 year high water elevation.

5. WATER QUALITY REQUIREMENTS.

(a) Facilities shall be established on site to meet the water quality standards of this section. Facilities, including wet detention ponds and other systems using BMP's in addition to or in place of ponding, shall be designed to reduce phosphorus loading at the downgradient site boundary by at least 50 percent on an annual average removal basis. The applicant shall demonstrate that this requirement is met using a model and methodology that is acceptable to the District. Total tributary drainage area shall be used to calculate permanent pool volume. Pond outlets shall remove floatables from runoff before discharge for a one-year event. All ponds must provide a ten (10) foot safety bench at a slope no steeper than 10:1 (H:V) and two (2) feet of freeboard above the 100 year pond level.

(b) Quality control facility outfall structures shall incorporate designs to minimize erosion and scouring.

(c) New buildings and structures shall have door and window openings a minimum of two feet above the 100 year high water elevation.

6. REQUIRED EXHIBITS (SUBMIT IN DUPLICATE).

(a) If the water quantity or water quality provisions set forth in sections 4 and 5 of this rule apply to a proposed development, plans certified by a professional engineer registered in the State of Minnesota and reflecting the following items shall accompany the permit application (one set of plans must be full size; one set must be reduced to a maximum size of 11" x 17"):

(1) Property lines and delineation of lands under ownership of the applicant.

(2) Delineation of the subwatershed contributing runoff from off-site and proposed and existing subwatersheds on-site.

(3) Proposed and existing stormwater facilities location, alignment, and elevation.

(4) Delineation of existing on-site wetland, marshes, shoreland, and/or floodplain areas.

(5) Identification, description, permeability and approximate delineation of site soils in both existing and proposed as-developed condition, for applications proposing infiltration as a stormwater management practice.

(6) Existing and proposed normal, and 100 year water elevations on-site.

(7) Existing and proposed site contour elevations at two foot intervals, related to NGVD, 1929 datum.

(8) Construction plans and specifications of all proposed stormwater management facilities.

(9) Stormwater runoff volume and rate analyses for the 1, 10 and 100 year critical events, existing and proposed conditions.

(10) All hydrologic, water quality, and hydraulic computations completed to design the proposed stormwater management facilities.

(11) Documentation indicating conformance with an existing municipal stormwater management plan. When a municipal plan does not exist, documentation that the municipality has reviewed the project.

(12) Delineation of any flowage easements or other property interests dedicated to stormwater management purposes, including, but not limited to, county or judicial ditches.

(13) Documentation that the project has received a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit from the Minnesota Pollution Control Agency (MPCA) if required by the MPCA, once available.

(b) A maintenance agreement shall be submitted for: stormwater treatment ponds, outlet structures for such ponds, culverts, outfall structures, and all other stormwater facilities. The maintenance agreement shall specify the methods, schedule and responsible parties for maintenance and must include at a minimum, the elements contained in the District's Maintenance Agreement Form. A Maintenance Agreement Form will be provided to the applicant for use by the applicant as a maintenance agreement or as guidance if the applicant desires to draft a separate maintenance agreement. The maintenance agreement must be filed of record in the county recorder's office before any land-altering activity occurs at the site.

(c) Geotechnical soil boring results if available.

7. EXCEPTIONS.

(a) If the District has approved a municipal stormwater management plan for a municipality, or for a subwatershed within a municipality, the requirements of this rule may be deemed satisfied upon showing of compliance by an individual developer with the municipal plan.

(b) The peak flow requirement of this rule will be waived on a determination by the Board of Managers that a downstream facility(ies) is in place or has been ordered and the facility(ies) is designed with adequate capacity to limit the peak runoff rate from the subwatershed under fully developed conditions. The peak flow requirement of this rule may also be waived on a determination by the Board of Managers that the time of

concentration of the downstream receiving water body is sufficiently long such that limiting the peak rate of runoff from the project has either no practical effect or an adverse effect.

(c) The water quality requirement of this rule will be waived on a determination by the Board of Managers that a downstream facility(ies) is in place or has been ordered and the facility(ies) is designed to remove at least 50% of the total phosphorus from runoff entering the facility from the subwatershed under fully developed conditions.

(d) The requirement of paragraph 4(a) or paragraph 5(a) that peak flow or stormwater quality be managed on site will be waived on a determination by the Board of Managers that meeting the requirement on site is infeasible; that an off-site facility treating the runoff from the applicant's development or its equivalent will allow the applicant to meet the requirement or provide equivalent management; and that the applicant, before commencing any land-altering activity, will hold the legal rights necessary for design, construction and long-term operation and maintenance of the facility.

NRCS alone, given the information presented by the NRCS is general in nature and the degree of sampling is too large of a scale for land disturbing activities. The NRCS information however, is a tool suitable for runoff estimation and land use planning.

B.6 Land Erosion Susceptibility

Land that is located on high sloping land, or has previously been developed has a greater likelihood of generating more runoff than in areas that have not been developed or are located on gently sloping areas. The loams and clay soil types and gently sloping terrain in Spring Park represent a low to medium susceptibility to land erosion.

The close proximity to the shoreline of Lake Minnetonka makes land erosion an important issue from both an existing land use or new construction condition. The disturbed or exposed soils have a greater chance of flowing off site. Establishing or maintaining vegetation on exposed soil in these areas will keep silt and urban pollutants from washing into the receiving storm sewer lines and ultimately reaching the Lake Minnetonka.

B.7 Unique Features and Scenic Areas

According to Minnesota Department of National Resources (MNDNR) records, there are no occurrences of any rare plant or animal species within the city limits of Spring Park.. The MNDNR does have regulatory jurisdiction with within their Lake Minnetonka shoreline setbacks. The City of Spring Park is located within these setback limits. Before any land alteration, dredging, or grading is scheduled to occur, the MNDNR office will need to be notified.

The City does not contain the following Federal, State, or County managed areas:

- Minnesota Historic Districts

APPENDIX D

PHOSPHOROUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

APPENDIX D

PHOSPHORUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

TABLE OF CONTENTS

APPENDIX D

PHOSPHORUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

I. Introduction and Purpose

A. The purpose of the phosphorous reduction plan is to give the City of Spring Park a strategy and a plan to protect and preserve the Lake Minnetonka water resource by meeting the following phosphorous reduction goals:

1. The Minnehaha Creek Watershed District (MCWD) annual phosphorous loading reduction goal of 4 pounds.
2. To provide a strategy and guidelines for the City to meet future MPCA "Total Maximum Daily Load" limits for phosphorous.

II. Phosphorous Reduction Analysis and Plan

A. Water Quality Drainage Areas: Exhibit A shows the city separated into drainage areas which best represent existing and potential opportunities for reducing phosphorous loading to Lake Minnetonka. These areas were identified using the following criteria:

- Existing residential areas with overland drainage to lake.
- Existing development with a potential for re-development with no current BMP treatment.
- Existing development with BMP treatment.
- Potential city project areas.
- Existing areas with proprietary structure BMP treatment
- Existing areas with dry basin treatment.
- Existing development with natural treatment wetland, swales & low areas
- Public right-of-way (streets)

The areas selected to be in the 10 year phosphorous reduction analysis and plan were:

- The areas with BMP's constructed after 2000
- Existing development properties with a good potential to be re-developed within the next 10 years
- City and County streets and Public Right of Way
- Areas with a potential for a public project in the next 10 years
- Shoreline properties with the potential for voluntary buffer zone improvements

APPENDIX D

PHOSPHORUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

The remaining areas in the city are not expected to be re-developed, some of the areas offer a potential for a feasible public works improvement, or they contain an existing treatment BMP constructed prior to 2000.

III. Phosphorous Reduction Estimates

A. To meet the established MCWD goals to reduce phosphorous loading the plan needs to quantify were the reductions will come from. Utilizing the areas identified in paragraph A, phosphorous quantities were determined using the following criteria:

- Annual total phosphorous loadings and removal percentages based on the MPCA's "Minnesota Storm Water Manual", (Tables are attached at end of appendix).
- Impervious areas for re-development = 70%
- Impervious areas for existing BMP areas = Actual Calculated Area
- Re-development project phosphorous removal rates of 70%, matching MCWD permitting requirements, 70% to the most feasible removal rate for retro-fit public projects. Example adding a proprietary device on existing storm sewer.

B. Street Sweeping: The street sweeping program in Spring Park is a very important component of the phosphorous reduction plan. The estimate of phosphorous removed by the current sweeping program was based on data from the City of Plymouth testing performed in 2007. The testing data is attached at the end of this section.

1. The analysis of the estimated phosphorous removals from street sweeping in Spring Park is presented below:

   Removal criteria for different street widths:

   - Base Removal (City of Plymouth) = 1 lb./mile/24 ft. wide street.

   The base removal rate was adjusted to the different street widths in Spring Park.
   - County Road 15 – 36' wide = 1.5 lb./mile
   - County Road 51 – 30' wide = 1.25 lb./mile
   - City Streets – 18' (average) = 0.75 lb./mile

APPENDIX D

PHOSPHORUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

TABLE A
ESTIMATED STREET SWEEPING PHOSPHOROUS REMOVALS

STREET	LENGTH	REMOVAL PT.	ANNUAL SWEEPING	ANNUAL REMOVAL
County Road 15	1.18 mile	1.5lb./mile	1	1.8 lbs.
County Road 51	0.66 mile	1.25 lb./mile	1	0.8 lbs.
City Streets	2.4 mile	0.75 lb./mile	3	5.4 lbs.
			Total Annual Removal:	8.0 lbs.

2. Testing of the phosphorous content to verify removal rates and compliance with the 4 lb. annual phosphorous removals goal will be performed every two years, starting in 2010.

C. Phosphorous Reduction Tabulation

The estimate of phosphorous reduction from the current street sweeping program and the existing (>2000) BMP's exceed the MCWD's current goal of 4 pounds. The phosphorous strategy also targets the future re-development and city projects to further increase the phosphorous reductions.

An estimate of the plan phosphorous reductions for the 10 year period is presented below.

TABLE B – CURRENT ANNUAL PHOSPHOROUS LOADING REDUCTION
(This tabulation represents removals to meet MCWD goals)

Area Description	Area	BMP	Removal/lbs.
Street Sweeping	Public Row	Street Sweeping	8
Lakeview Lofts (2006)	N	Concrete Basin	0.38
Northern Ave. (2007)	T	Dry Basin	0.33
Channel Road (2009)	F	Rain Garden	0.92
The Mist (2007)	H	"Stormceptor"	0.12
		Total Current Annual Removals:	9.75 lbs.

Potential phosphorous removals from future county road sweeping (from one time to two times annually), re-development, city projects and voluntary programs could reduce phosphorous loading by another estimated 12.8 pounds.

D. Phosphorous Removing BMPS

APPENDIX D

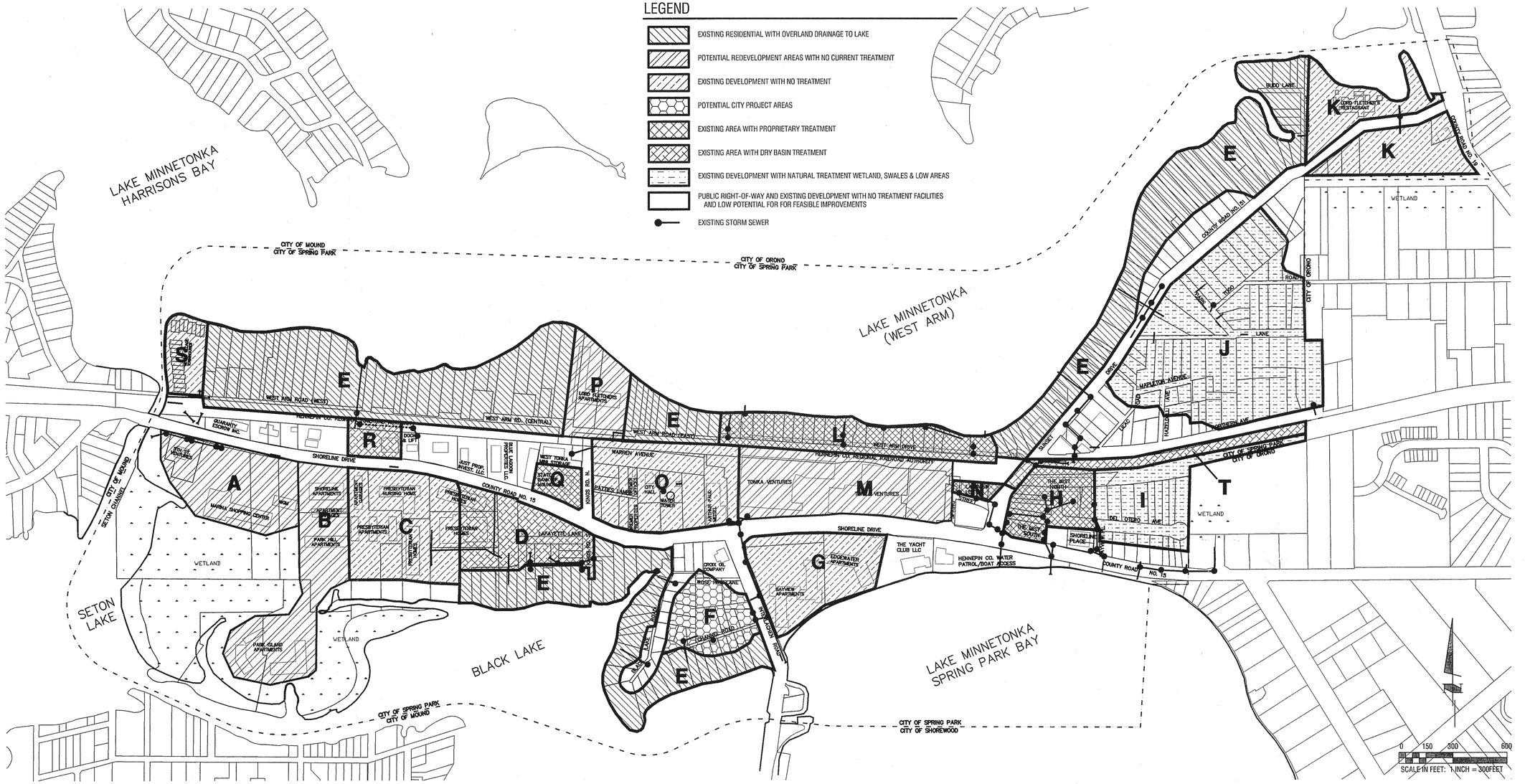
PHOSPHORUS REDUCTION ANALYSIS AND PHOSPHOROUS REDUCTION STRATEGY AND PLAN

Best management practices that would be used on re-development, public projects and general use applications would include:

- Wet ponds
- Dry basins
- Enhanced infiltration/rain gardens
- Proprietary sediment removal manholes and filters
- Street and parking lot sweeping
- Swaled drainage ways
- Existing ditches/swales/basins
- Fertilizer ban
- Existing BMP's
- Increase open space
- Maintenance of BMP's

E. Implementation program for phosphorous reduction strategies and plan

1. Continue city street sweeping, three times a year. Coordinate with County to sweep twice a year. Test street sweeping sediment for phosphorous content in 2010, every 2 years after.
2. Continue MS4 permit program and BMP maintenance program.
3. Continue implementation of City and MCWD's permitting rules and regulations.
4. Continue MS4 permit education program, with an emphasis on shoreline protection and buffer strips.
5. Prepare and submit annual plan implementation report to MCWD.



Existing Area Tabulation (Not Identified in Phosphorus Reduction Plan)			
Area	**Land Use**	**In-Place BMPs**	**Phosphorus Reductions**
C	Presbyterian Homes Complex	None	None
D	Presbyterian Homes Complex	Dry Basin	Existing (<2000)
G	Bayview / Edgewator	None	None
I	Residential	None	None
J	Residential	Flat Swales in Park	Existing (<2000)
L	Residential	Dry Basin	Existing (<2000)
P	Lord Fletchers Apartments	None	None
Q	Mound State Bank	Dry Basin	Existing (<2000)
R	Commercial	Dry Basin	Existing (<2000)
S	Seton Village	None	None

Identified Areas for Phosphorus Reduction		
Area	**Land Use**	**BMP Goals**
A	Potential for Redevelopment	70% Phosphorus Removal
B	Potential for Redevelopment	70% Phosphorus Removal
E	Residential	Voluntary Buffers - 10% of Shoreline
F	Channel Road Public Project	50% Removal with Raingarden
H	Minnetonka Mist	Existing Phosphorus Removal
K	Lord Fletcher's Parking Lots	50% Phosphorus Removal
M	Potential for Redevelopment	70% Phosphorus Removal
N	Lakeview Lofts	Existing Phosphorus Removal
O	Potential for Redevelopment or Public Project	50% Phosphorus Removal
T	Northern Avenue	Existing Phosphorus Removal
Public ROW	City Street Sweeping	0.75 lbs Phosphorus removal per mile
Public ROW	County Street Sweeping	1.50-1.25 lbs Phosphorus removal per mile

Estimate of Potential Annual Phosphorus Reduction Quantities									
Site	**Action**	**Area**	**Site Area (sf)**	**Site Area (ac)**	**Percent Impervious**	**BMP**	**Annual TP Load* (lbs)**	**Average TP Removal**	**TP Removal Amount (lbs)**
Marina Shopping Center	Redevelopment Potential	A	304715	7.00	70%	Wet Pond/Bioretention	3.27	70%	2.29
Shoreline/Park Island Apartments	Redevelopment Potential	B	377416	8.66	70%	Wet Pond/Bioretention	4.00	70%	2.80
Residential - Lakeside	10% Shoreline Buffer Strips	E	2164225	49.68	30%	Buffers	20.62	10%	2.06
Channel Road Residential	City Project (2009)	F	173059	3.97	30%	Bioretention	1.83	50%	0.92
The Mist	Existing BMP (2007)	H	163842	3.76	80%	Stormceptor	1.88	20%	0.38
Lord Fletcher's Restaurant	BMP Addition Potential	K	362295	8.32	80%	Bioretention	3.91	50%	1.96
Tonka Ventures	Redevelopment Potential	M	420356	9.65	80%	Wet Pond/Bioretention	4.51	70%	3.15
Lakeview Lofts	Existing BMP (2006)	N	20485	0.47	95%	Underground Wet Pond	0.41	30%	0.12
Central Business Area	City Project Potential	O	383454	8.80	50%	Wet Pond/Bioretention	3.94	50%	1.97
Northern Avenue	Existing BMP (2007)	T	103226	2.37	70%	Dry Basin	1.24	30%	0.37
City Right-of-Way	Street Sweeping	-	-	-	-	3 times per year	-	***	5.40
County Right-of-Way	Street Sweeping	-	-	-	-	1 time per year	-	***	2.60

*AnnualTP Load calculations based on Minnesota Stormwater Manual, Appendix L

**Average TP Removal percentages based on Minnesota Stormwater Manual, Table L.8

***Refer to Appendix C

Engineering • Planning • Surveying

MFRA

McCombs Frank Roos Associates, Inc.

14800 28th Avenue North, Suite 140
Plymouth • Minnesota • 55447
phone: 763/476-6010 • fax: 763/476-8532
website: www.mfra.com

Client
City of Spring Park

Project
Spring Park Surface Water Management Plan

Location
Spring Park, MN

Certification

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional ENGINEER under the laws of the State of Minnesota.

Registration No. Date:

If applicable, contact us for a wet signed copy of this plan which is available upon request at McCombs Frank Roos Associates, Inc., Plymouth, MN office.

Summary

Designed: JK Drawn: JJ
Approved: JK Book / Page:
Phase: PRELIMINARY Initial Issue:

Revision History

No. Date By Submittal / Revision

Sheet Title
PHOSPHORUS REDUCTION PLAN

Sheet Number Revision
EXHIBIT A

Project No. SPR18070

Mar 18, 2020 - 3:47pm - User: JJ:\SPR\SPR18070\Engineering\Drawings\Exhibit A.dwg

APPENDIX D

REFERENCE ATTACHMENTS

John Karwacki

From: Darrell Johnson [DRJohnso@ci.plymouth.mn.us]
Sent: Friday, February 20, 2009 1:16 PM
To: John Karwacki
Subject: FW: MCWD Load reduction estimates
Attachments: AR-BC320_20081008_092012.pdf

John,

The attached information was provided by Derik Asche, our Water Resources Manager. Also, please open attachment for additional info.

Darrell Johnson | Sr. Eng. Tech.
City of Plymouth
3400 Plymouth Boulevard
Plymouth, MN 55447
Phone: 763.509.5523
drjohnson@ci.plymouth.mn.us

Plymouth, Minnesota | Money Magazine's #1 Best Place to Live

From: Derek Asche
Sent: Friday, February 20, 2009 1:02 PM
To: Darrell Johnson
Subject: FW: MCWD Load reduction estimates

Darrell:

Attached are the data sheets from the U of M for testing of street sweeping samples in 2007. I used an average of 235.5 mg/kg of P. Here is how I calculated lbs of P per mile per sweep (you should check my math)

235.5 mg/kg of P * 0.0000022 lbs/mg = .00052 lbs/kg * 1,541,900 kg (1700 tons) street sweepings collected = 802 lbs P

802 lbs/277 miles of street = 2.9 lbs per mile

2.9 lbs/mi divided by 3 sweeps = 0.97 lbs/mi/sweep

FYI...We tested our street sweepings from 2008 at the U of M and they had a slightly higher concentration of phosphorus.

For our Surface Water Management Plan, street sweeping was a sufficient BMP to meet required p-reductions by the Minnehaha Creek Watershed District. The following is the text we used describing the phosphorus load reduction in our plan to the MCWD:

a. Phosphorus Load Reduction

Two subwatersheds in Plymouth encompassing four annual load reductions are identified by the MCWD. The MCWD identifies Plymouth for a load reduction of 10 lbs in the MCWD Minnehaha Creek subwatershed and a load reduction of 146 lbs in the MCWD Gleason Lake subwatershed. The Minnehaha Creek subwatershed corresponds to the City of Plymouth's Minnetonka subwatershed and the

Gleason Lake Subwatershed corresponds to the City of Plymouth's Gleason Lake, Dunkirk Lane, 19th Avenue, Hadley Lake, and Kreatz Lake/Snyder Lake subwatersheds. In addition to a 60% reduction in phosphorus for any new or redevelopment project greater than 0.5 acres the City has operated an enhanced street sweeping program since 2005.

Samples from street sweepings were tested by the University of Minnesota and found to contain [redacted]. These findings are more conservative than the report "Deriving Reliable Pollutant Removal Rates for Municipal Street Sweeping and Storm Drain Cleanout Programs in the Chesapeake Bay Basin" prepared by the Center for Watershed Protection. The City of Plymouth sweeps all City streets three times each year yielding a removal of approximately 3.0 pounds of phosphorus per street mile annually. Based on the testing by the University of Minnesota, the City of Plymouth is consistent in meeting the load reduction requirements of the MCWD (Table 89).

Table 89. Enhanced street sweeping phosphorus removals within the Minnehaha Creek Watershed.

MCWD Subwatershed	Phosphorus removals
Minnehaha Creek – Lake Hiawatha	9.6 pounds
Gleason Lake – Upstram of Gleason Lake	139.5 pounds
Gleason Lake – Upstream of Hadley Lake	26.4 pounds
Gleason Lake – Downstream of Gleason/Hadley Lakes	17.4 pounds

Additionally, since 2000, the City of Plymouth has reduced impervious surface by narrowing streets in street reconstruction areas, constructed two water quality ponds, repaired erosion on County Ditch 15, completed a wetland enhancement project, constructed four rain gardens to capture street surface water runoff from area streets, worked in cooperation with the MCWD on the Gleason Lake Inlet Pond project, and offers Water Resources Grants to residents or businesses who incorporate native plants into their landscape.

The Gleason Lake Implementation Plan (Table 100) outlines future efforts, including structural best management practices, to improve the water quality of Gleason Lake and to further reduce phosphorus loading consistent with MCWD goals. Lastly, "Housekeeping requirements" of the MCWD are described in the City's SWPPP under minimum control measure #6 (see Appendix D).

If you have any questions please let me know. Good luck.

Derek Asche | Water Resources Manager

ANALYTICAL DATA REPORT

Report to: *Shane Missaghi*

Study Name: *2007 Street Sweeping Program*

Laboratory Reference No: *S072* Date Received: *3/21/2007*

Sample Type: *Soil* Date of Report: *6/12/2007*

Sample	% Moisture, dry wgt basis	% Organic Matter		Total P mg/kg (ppm)		Choride mg/kg (ppm)
1807	4.73	1.2/1.2		184.6/177.3		658.3/694.6
1907	6.30	1.4		223.5		492.7
2007	5.02	1.7		208.9		263.8
				205.0 AVG.		
Analyst		A.F.		R.A.		M.M.

UNIVERSITY OF MINNESOTA

Department of Soil Science

Research Analytical Laboratory
135 Crop Research Building
University of Minnesota
St. Paul, MN 55108

Phone: (612)625-3101

DATARPT.XLS

ANALYTICAL DATA REPORT

Report to: *Derek Asche*

Study Name: *2007 Street Sweeping*

Laboratory Reference No: *S036*

Date Received: *10/11/2007*

Sample Type: *Street sweepings*

Date of Report: *10/31/2007*

Sample	Total Nitrogen %	Chloride ppm				
1E	0.089 / 0.096	210.8 / 216.4				
2E	0.065	74.1				
3E	0.080	75.0				
4E	0.082	27.6				
1W	0.174	592.3				
2W	0.066	51.5				
3W	0.074	33.1				
4W	0.087	15.3 / 23.6				
Analyst	M.M.	M.M.				

UNIVERSITY OF MINNESOTA

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Phone: (612)625-3101

DATARPT.XLS

University of Minnesota
Research Analytical Lab.

07/08 Soil #36
mg/kg (ppm) in the sample as received

10/31/2007

Name		P
BLK	<	29.600
1 EST		340.050
1 EST Dup		284.960
2 EST		296.130
3 EST		289.680
4 EST		323.810
BLK	<	29.600
1 WST		325.380
2 WST		212.040
3 WST		245.810
4 WST		344.990
4 WST Dup		305.160

Appendix L

Simple Method for Estimating Phosphorus Export

1. The Simple Method

The Simple Method is a technique used for estimating storm pollutant export delivered from urban development sites. The method was developed to provide an easy yet reasonably accurate means of predicting the change in pollutant loadings in response to development. This information is needed by planners and engineers to make rational non-point source pollution decisions at the site level.

The Simple Method Calculation is intended for use on development sites less than a square mile in area. As with any simple model, the method to some degree sacrifices precision for the sake of simplicity and generality. Even so, the Simple Method is still reliable enough to use as a basis for making non-point pollution management decisions at the site level.

Phosphorus pollutant loading (L, in pounds per year) from a development site can be determined by solving the equation displayed in Table L.1.

1.1. Depth of Rainfall (P)

The value of P represents the number of inches of precipitation that falls during the course of a normal year of rainfall. Long-term weather records around the state of Minnesota suggest that the average annual rainfall depth is about 26 inches. This can be used to estimate P or a user can substitute the average annual rainfall depth from the closest National Weather Service long-term weather station or other suitable locations for which a reliable record can be demonstrated (> 10 years).

1.2. Correction Factor (P_j)

The P_j factor is used to account for the fraction of the annual rainfall that does not produce any measurable runoff. Many of the storms that occur during the year are so minor that all of the rainfall is stored in surface depressions and eventually evaporates. As a consequence, no runoff is produced. An analysis of regional rainfall/runoff patterns indicates that only 90% of the annual rainfall volume produces any runoff at all. Therefore, P_j should be set at 0.9.

1.3. Runoff Coefficient (R_v)

The R_v is a measure of the site response to rainfall events, and in theory is calculated as:

R_v = r/p, where r and p are the volume of storm runoff and storm rainfall, respectively, expressed as inches.

The R_v for the site depends on the nature of the soils, topography, and cover. However, the primary influence on the R_v in urban areas is the amount of imperviousness of the site. Impervious area is defined as those surfaces in the landscape that cannot infiltrate rainfall consisting of building rooftops, pavement, sidewalks, driveways, etc. In the equation:

$$R_v = 0.05 + 0.009(I)$$

"I" represents the percentage of impervious cover expressed as a whole number. A site that is 75% impervious would use I = 75 for the purposes of calculating R_v.

1.4. Site Area (A)

The total area of the site (in acres) can be directly obtained from site plans. If the total area of the site is greater than one square mile (640 acres), the Simple Method may not be appropriate and applicants should consider utilizing other approaches, such as modeling or monitoring.

1.5. Pollutant Concentration (C)

Statistical analysis of several urban runoff monitoring datasets has shown that the average storm concentrations for total phosphorus do not significantly differ between new and existing development sites. Therefore, a pollutant concentration, C, of 0.30 mg/l should be used in this equation as a default. However, if good local data are available or an adjustment is needed, this factor can be customized for local condition.

Chapter 8 contains a range of C values for those interested in conducting a more detailed analysis of phosphorus export.

The Simple Method equation listed in Table L.1 can be simplified to the equation shown in Table L.2. Applicants with verified data indicating alternative values may choose to use the original Simple Method equation as represented in Table 1; otherwise, Table L.2 represents the revised Simple Method equation and associated values.

2. Calculating Pre-Development and Post-Development Phosphorus Load

The methodology for comparing annual pre-development pollutant loads to post-development pollutant loads is a six-step process (Table L.3).

Step 1: Calculate Site Imperviousness

In this step, the applicant calculates the impervious cover of the pre-development (existing) and post-development (proposed) site conditions.

Impervious cover is defined as those surfaces in the landscape that impede the infiltration of rainfall and result in an increased volume of surface runoff. As a simple rule, human-made surfaces that are not vegetated will be considered impervious. Impervious surfaces include roofs,

buildings, paved streets and parking areas and any concrete, asphalt, compacted dirt or compacted gravel surface.

Step 2: Calculate Pre-Development Phosphorus Load

In this step, the applicant calculates stormwater phosphorus loadings from the site prior to development. Depending on the development classification, the applicant will use one of two equations (Table L.4). The equation to determine phosphorus loading in a redevelopment situation is based on the Simple Method. The equation to determine phosphorus loading in a new development situation utilizes a benchmark load for undeveloped areas, which is based on average phosphorus loadings for a typical mix of undeveloped land uses.

Step 3: Calculate Post-Development Pollutant Load

In this step, the applicant calculates stormwater phosphorus loadings from the post-development, or proposed, site. Again, an abbreviated version of the Simple Method is used for the calculations, and the equation is the same for both new development and redevelopment sites (Table L.5).

Table L.1 Phosphorus Pollutant Export Calculation

$$L = [(P)(P_j)(R_v)/12]\ (C)\ (A)\ (2.72)^*$$

Where:

- L = Load of a pollutant in pounds per year
- P = Rainfall depth per year (inches)
- P_j = Fraction of rainfall events that produce runoff
- R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff. $R_v = 0.05 + 0.009(I)$
- C = Flow-weighted mean concentration of the pollutant in urban runoff (mg/l)
- A = Area of the development site (acres)

*12 and 2.72 are unit conversion factors

Table L.2 Simplified Pollutant Loading Calculation

$$L = (P)\ (R_v)\ (C)\ (A)\ (0.20)^*$$

Where:

- L = Load of a pollutant in pounds per year
- P = Rainfall depth per year (inches)
- R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff = 0.05 + 0.009(I)
- I = Site imperviousness (i.e., I = 75 if site is 75% impervious)
- C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l**
- A = Area of the development site (acres)

*0.20 is a regional constant and unit conversion factor

** The C factor can be customized if good local water quality data exist or if an adjustment in the 0.30 mg/l term is needed.

Step 4: Calculate the Pollutant Removal Requirement

The phosphorus load generated from the post-development site must be reduced so that it is 90% or less of the load generated prior to development, In this example, a 10% reduction in phosphorus loading from pre-development conditions is used. This should not be construed as a recommended reduction for the State of Minnesota. Applicants should check with local stormwater authorities to determine if specific pre- to post-development phosphorus reduction requirements exist. The amount of phosphorus that must be removed through the use of stormwater BMPs is called the Pollutant Removal Requirement (RR). The equation in Table L.6 expresses this term numerically.

Table L.3 Process For Calculating Pre- and Post-Development Pollutant Loads

Step No	Task
1	Calculate Site Imperviousness
2	Calculate the Pre-Development Phosphorus Load
3	Calculate Post-Development Pollutant Load
4	Calculate the Pollutant Removal Requirement
5	Identify Feasible BMPs
6	Select Off-Site Mitigation Option

Table L.4 Method For Calculating Pre-development Phosphorus Loading

New Development Phosphorus Loading, $L_{pre} = 0.5\ (A)$

Where:

- L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- 0.5 = Annual total phosphorus load from undeveloped lands (lbs/acre/year)
- A = Area of the site (acres)

Redevelopment Phosphorus Loading, $L_{pre} = (P)\ (R_v)\ (C)\ (A)\ (0.20)$

Where:

- L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- P = Rainfall depth over the desired time interval (inches)
- R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff = $0.05 + 0.009(I_{pre})$
- I_{pre} = Pre-development (existing) site imperviousness (i.e., I = 75 if site is 75% impervious)
- C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l
- A = Area of the development site (acres)

*0.20 is a regional constant and unit conversion factor

Step 5: Identify Feasible BMPs

Step 5 looks at the ability of the chosen BMP to meet the site's pollutant removal requirements. The pollutant load removed by each BMP (Table L.7) is calculated using the average BMP removal rate (Table L.8), the computed post-development load, and the drainage area served.

If the load removed is equal to or greater than the pollutant removal requirement computed in Step 4, then the on-site BMP complies. If not, the designer must evaluate alternative BMP designs to achieve higher removal efficiencies, add additional BMPs, design the project so that more of the site is treated by the proposed BMPs, or design the BMP to treat runoff from an off-site area.

Table L.5 Method For Calculating Post-Development Phosphorus Loading

$$L_{post} = (P)\ (R_v)\ (C)\ (A)\ (0.20)$$

Where:

- L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)
- P = Rainfall depth over the desired time interval (inches)
- R_v = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff = $0.05 + 0.009(I_{post})$
- I_{post} = Post-development (proposed) site imperviousness (i.e., I = 75 if site is 75% impervious)
- C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l
- A = Area of the development site (acres)

*0.20 is a regional constant and unit conversion factor

Table L.6 Computing Pollutant Removal Requirements

$$RR = L_{post} - 0.9(L_{pre})$$

Where:

- RR*= Pollutant removal requirement (lbs/year)
- L_{post} = Average annual load of total phosphorus exported from the post-development site (lbs/year)
- L_{pre} = Average annual load of total phosphorus exported from the site prior to development (lbs/year)

*0.90 is suggested post-development phosphorus load reduction. Local requirements may vary.

Table L.7 Estimate of Pollutant Load Removed by Each BMP

$$LR = (L_{post})\ (BMP_{RE})\ (\%\ DA\ Served)$$

Where:

- LR = Annual total phosphorus load removed by the proposed BMP (lbs/year)
- L_{post} = Average annual load of total phosphorus exported from the post-development site prior to development (lbs/year)
- BMP_{RE} = BMP removal efficiency for total phosphorus, Table 8 (%)
- % DA Served = Fraction of the drainage area served by the BMP (%)

Step 6: Select Off-Site Mitigation Option

If the pollutant removal requirement has been met through the application of on-site stormwater BMPs, the process is complete.

In the event that on-site BMPs cannot fully meet the pollutant removal requirement and on-site design cannot be changed, an offset fee should be charge (e.g. $X per pound of phosphorus).

Table L.8 Comparative BMP Phosphorus Removal Performance [a, e, f]

BMP Group	BMP Design Variation	Average TP Removal Rate[b]	Maximum TP Removal Rate[c]	Average Soluble P Removal Rate[d, g]
Bioretention	Underdrain	50%	65%	60%
	Infiltration	100	100	100
Filtration	Sand Filter	50	55	0
	Dry Swale	0	55	0
	Wet Swale	0	40	0
Infiltration[f,j]	Infiltration Trench	100	100	100
	Infiltration Basin	100	100	100
Stormwater Ponds	Wet Pond	50	75	70
	Multiple Pond	60	75	75
Stormwater Wetlands	Shallow Wetland	40	55	50
	Pond/Wetland	55	75	65

[a] Removal rates shown in table are a composite of five sources: ASCE/EPA International BMP Database (www.bmpdatabase.org); Caraco (CWP), 2001; MDE, 2000; Winer (CWP), 2000; and Issue Paper D P8 (William Walker, http://wwwalker.net/p8/) modeling

[b] Average removal efficiency expected under MPCA CGP Sizing Rules 1 and 3 (see Chapter 10)

[c] Upper limit on phosphorus removal with increased sizing and design features, based on national review

[d] Average rate of soluble phosphorus removal in literature

[e] See also Appendix N (link) and Chapter 12 for details.

[f] Note that the performance numbers apply only to that portion of total flow actually being treated; it does not include any runoff that by-passes the BMP

[g] Note that soluble P can transfer from surface water to ground water, but this column refers only to surface water

[h] Note that 100% is assumed for all infiltration, but only for that portion of the flow fully treated in the infiltration facility; by-passed runoff or runoff diverted via underdrain does not receive this level of treatment

IMPORTANT NOTE: Removal rates shown here are composite averages intended solely for use in comparing performance between BMP designs and for use in calculating load reduction in site-based TP models. They have been adapted, rounded and slightly discounted from statistical values published in BMP performance databases.

3. References

Caraco, D. 2001. "Managing Phosphorus Inputs Into Lakes III: Evaluating the Impact of Watershed Treatment." Watershed Protection Techniques. 3 (4): 791-796. Center for Watershed Protection. Ellicott City, MD.

Maryland Department of the Environment (MDE). 2000. 2000 Maryland Stormwater Design Manual. MDE. Baltimore, MD.

Winer, R. 2000. National Pollutant Removal Performance Database for Stormwater Treatment Practices. 2nd Edition. Center for Watershed Protection. Ellicott City, MD.

APPENDIX E

CITY OF SPRING PARK ZONING ORDINANCE SECTIONS - FOLLOWING SECTIONS NOT INCLUDED, TO BE UPDATED AS PART OF THE LWMP

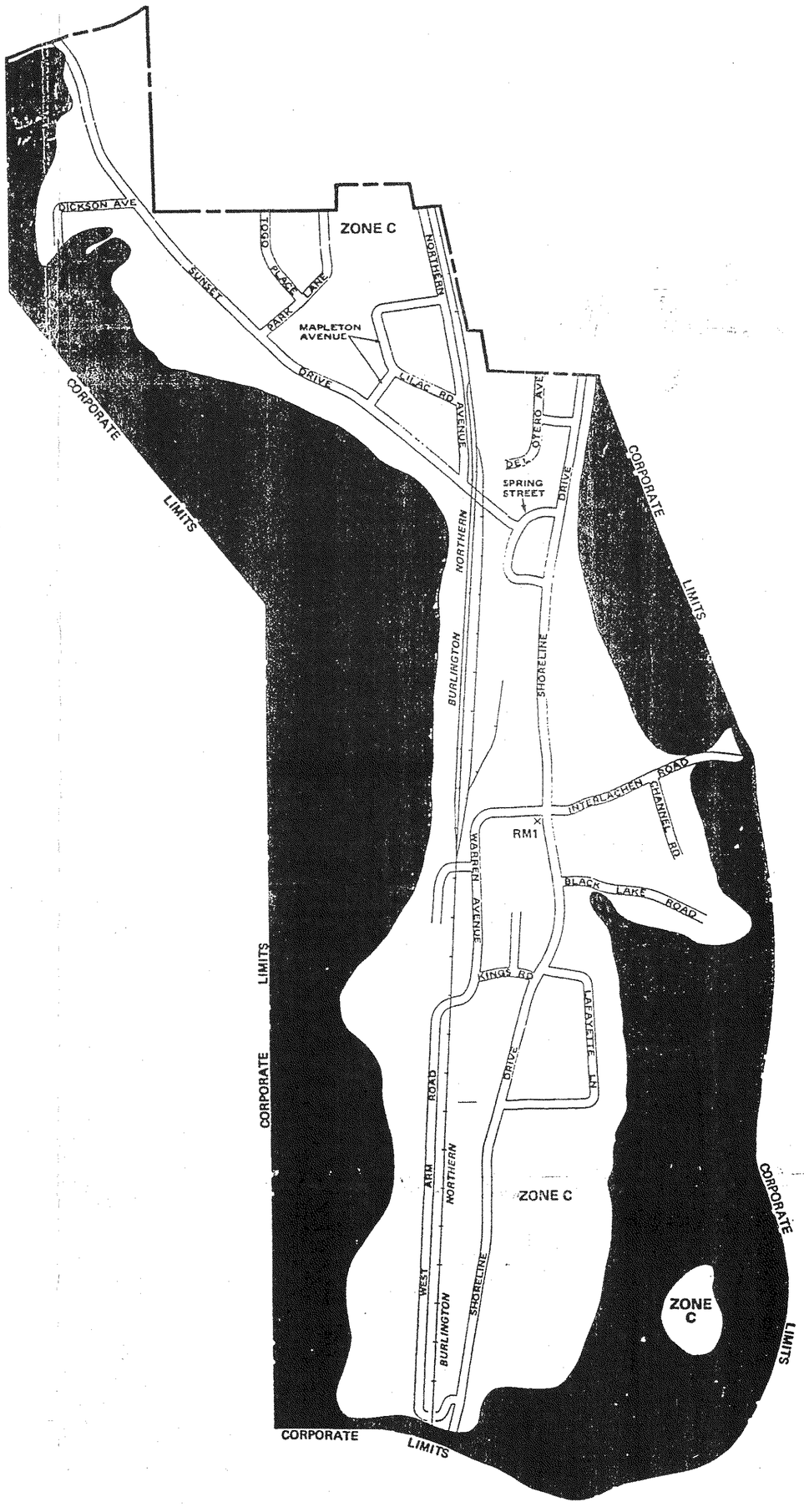
SHORELAND DISTRICT
STORMWATER MANAGEMENT
FLOOD PLAIN DISTRICT
WETLAND SYSTEMS DISTRICT

APPENDIX F

FEMA-FLOODWAY MAP

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM1	960.17	Nail located on the south face and 1.5 feet above base of a power pole bearing a traffic signal, located in the northwest corner of the intersection of Shoreline Drive and Interlachen Road.



100-Year Flood Boundary ———

500-Year Flood Boundary ———

Base Flood Elevation Line With Elevation In Feet** ——513——

Base Flood Elevation In Feet Where Uniform Within Zone** (EL 987)

Elevation Reference Mark RM7×

River Mile • M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
JUNE 7, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:

FLOOD INSURANCE RATE MAP EFFECTIVE:
MAY 1, 1979

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the CONVERSION TO REGULAR PROGRAM date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE
500 0 500 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
SPRING PARK,
MINNESOTA
HENNEPIN COUNTY

(ONLY PANEL PRINTED)

COMMUNITY-PANEL NUMBER
270185 0001 B